

ANGLIA RUSKIN UNIVERSITY

**FACULTY OF HEALTH, SOCIAL CARE AND
EDUCATION**

PROFESSIONAL DOCTORATE

**FACTORS AFFECTING THE
IMPLEMENTATION OF BEST PRACTICE IN
MEDICATION ADMINISTRATION BY NURSES
IN A UK NHS TRUST**

WENDY DURHAM

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ABSTRACT

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**FACTORS AFFECTING THE IMPLEMENTATION OF BEST PRACTICE IN
MEDICATION ADMINISTRATION BY NURSES IN A UK NHS TRUST**

Background:

Despite numerous studies that review nursing practice and patient safety, barriers exist that ultimately impact on the delivery of best practice. Best practice is defined as 'more than evidence-based care as it represents 'quality care' which, is deemed optimal based on a prevailing standard or point of view' (Nelson 2014 P.1507). Evidence suggests that to ensure implementation of best practice into the clinical environment it is important to identify methods of staff development and reduce organisational and professional conflicts in the NHS.

Research Aim:

The research aim in this study is to explore the experiences of registered nurses in medication management within a Local District General NHS hospital to identify the factors which can affect the implementation of 'best practice' into clinical practice.

Research methodology

This research was informed by Grounded Theory. Thirteen participants, all registered nurses involved in medication administration, were first purposively and then theoretically sampled and recruited. Data was collected through in-depth, semi-structured, recorded interviews. Data analysis was completed using the constant comparison method. Ethical approval was obtained prior to the study.

Key findings and recommendations

This study supports earlier research which suggested lack of staffing, skill mix, time, attitudes and behaviours all impact on the implementation of best practice. However, this study suggests there may be other factors involved. This study suggests implementing best practice is a complex situation based on the nurse's decision-making processes, their perception of risk and potential outcome to themselves, patients and colleagues. These decisions are also complicated by the nurses' personal and professional values, levels of trust between themselves and their team and perceptions of their power to influence change. If nurses feel powerless to act in relation to their own values base and professional identity, they may experience cognitive dissonance, potentially resulting in challenge avoidance, moral distress, burnout, sabotage or rebellion, increasing risks and affecting patient safety. The factors involved in implementing best practice are complex. Therefore, it is essential that evaluation is undertaken to identify the threats affecting these and strategies are implemented to improve the nurse's decision-making skills while in challenging environments.

Key words:

Best practice; Implementation; Learning; Barriers; Medication administration.

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FACTORS AFFECTING THE IMPLEMENTATION OF BEST PRACTICE IN MEDICATION ADMINISTRATION BY NURSES IN A UK NHS TRUST

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PUBLISHED PAPERS

Dissemination of information resulting from this study

Conference presentation of preliminary findings: *NET Conference 2016*: 6th – 8th September 2016. Factors affecting best practice in relation to medication administration for nurses within an acute NHS Trust

Durham, W., Sykes, C., Piper, S. and Stokes, P., 2015. Conceptual frameworks and terminology in doctoral nursing research. *Nurse Researcher*. 23, 2, 8-12.

Sykes, C. and Durham, W., 2014 Embedding NHS values: a framework and learning tool to support practice: *Nursing Management*, 2014, 20(9), pp.31-37 (see Appendix 1 p.270)

NHS Values Learning Tool – Developed by W, Durham. and C, Sykes., 2014. Published and endorsed by Health Education East of England 2014

Additional papers developed during doctorate study period.

Sykes, C., Durham, W. and Kingston, P., 2013. Role of facilitators in delivering high quality practice education. *Nursing management*, 19(9), pp.16-22

Durham, W., Kingston, P. and Sykes, C., 2012. Implementing a sign-off mentor preparation workshop. A Tripartite Approach. *Nurse Education Today*. Apr; 32(3):273-7.

FACTORS AFFECTING THE IMPLEMENTATION OF BEST PRACTICE IN MEDICATION ADMINISTRATION BY NURSES IN A UK NHS TRUST

Chapter 1 Introduction

1.1 Introduction to the thesis

The rhetoric around the failure to implement learning in the clinical environment is not a new phenomenon in the National Health Service (NHS). Over the past decade, activity in this area has engendered a wealth of leadership, educational and clinical initiatives with the intent of developing the knowledge and skill, of health care workers. Evidence suggests that despite the extent of activity, best practice is not always being implemented in the clinical environment resulting in a failure to provide basic care including pressure area management, nutritional provision, medication administration and a failure to support learners (Frances 2013, Sprinks 2016). This is not a new problem. The Royal College of Nursing (RCN, 2003) published guidance on clinical governance highlighting many previous high-profile health service failures demonstrating that health care is often ineffective and frequently unsafe. Their report suggested that effective skills within the workforce, management and leadership were essential to ensure safe effective care.

However, despite these earlier failures and subsequent recommendations, these problems remain. In 2009 the National Patient Safety Agency (NPSA), who then disseminated safety alerts to promote learning and change, reported that in the NHS about 200,000 incidents are reported each quarter (NPSA, 2009). Despite these alerts, reports of failures to act on safety alerts (Sprinks 2016) and failures in care (Sprinks 2016, Foged et al 2018, Rohde and Domm 2018) remain. These failures have also been identified by the Nursing and Midwifery Council (NMC) who highlight that the number of nurses reported to the NMC continues to rise due to concerns with a lack of competence, record keeping, neglect of basic care and medication administration (NMC, 2017). Given the number of reported incidents, it would seem, that often, the staff engaged in health care delivery may have failed to learn from these incidents and the research evidence. This suggests that this

failure to implement best practice becomes more obvious at the same time as health care users are beginning to report poor practice more widely.

As an educator in an acute NHS Trust undergoing a major management change, this was a concern. It is essential to understand why learning and factors which appear to be understood and accepted as 'best practice' are failing to be implemented. Nelson (2014) identified 'best practice' as more than evidence-based care, as it represents 'quality care' which is deemed optimal based on a prevailing standard or point of view' (Nelson 2014 p.1507). Tolmie and Rice (2015) agree, adding that it can provide advice on best practice and thorough care. These standards can include a variety of sources of evidence including practice standards, literature, research, policies and procedures as well as expert advice and learning from study. Nelson (2014) added this practice 'may be characterised as directive, evidence-based, and quality-focused' (p.1510). Implementing this requires nurses who understand the evidence, the implications and the ability to support change management and staff development as well as training and development of the staff.

However, the cost to the NHS of pre-registration, continuing professional education and releasing staff to attend training and departmental back-fill remains high. With the decreasing NHS educational budgets and the expected fall in registered nursing staff this problem may be further exacerbated in the future. Tolmie and Rice (2015) agree adding that to implement these standards there is a need for dissemination, monitoring and evaluation when implementing the standards. The shortage of nurses was confirmed by the Migration Advisory Committee (2016 p.128) who suggested this had been due "largely to the health care and independents sectors own making" because of the failure to train sufficient nurses, and restricted pay restraints. The report suggested that the shortage of nurses was due to nurses leaving the profession for a variety of reasons including stress, burnout working conditions and low job satisfaction.

The Migration Advisory Committee report (2016) also highlighted a lack of training for student nurses and existing staff despite a wealth of development opportunities within the NHS. These development opportunities include activities

for registered nurse such as formal and in-house courses, clinical supervision, peer support, mentorship and work-based learning. It also supports earlier evidence that the possible theory/practice gaps are evident (Tynjala 2008; Moore, 2010; Lawton et al, 2012; Francis 2013; Monaghan, 2015). Therefore, it is essential that nurses are retained in the profession, have the knowledge, skills and ability to implement best practice effectively. It is also paramount that educators understand why there is a failure in implementing this ‘best practice’.

This thesis explores the factors affecting the implementation of best practice focusing on medication administration. The thesis is set out into seven chapters which are further developed into sub-sections. This first chapter (*Chapter one*) introduces the thesis structure and provides a description of the background and the context within which this research took place both within the local setting of an acute NHS Trust and the wider context of nursing.

Chapter two outlines a critical review of the relevant literature in this topic. This chapter is separated into two distinct sections. Part 1, describes the literature review conducted at the start of the research to identify the themes and gaps in knowledge to explore the challenges in implementing best practice. Evidence relating to failure to implement best practice arose in many different areas of practice including medication administration, pressure area management, manual handling, and infection control. This literature review suggested that the failures in clinical practice were due to multiple factors including lack of time, support, staffing and skill-mix. After the completion of this initial literature review, it was clear that this topic was too broad to focus the research on due to the multiple topics reviewed, therefore the decision was made to focus this study into one area ‘medication administration’. Therefore, part two of this chapter will outline the second literature review undertaken into medication administration and the implementation of best practice.

Chapter three will present the aims, the research questions, the theoretical and methodological perspectives including the research assumptions of the researcher and an introduction to Grounded Theory.

Chapter four outlines the research methods to ensure the researcher was robust and trustworthy when undertaking the research. This includes a clear description of the participants, the sampling strategy, data collection methods, data analysis and the methods undertaken to demonstrate scientific rigour and the ethical considerations.

Chapter five provides an account of the findings from the research using the participants own words to introduce the resulting themes. This account is important to demonstrate that the themes arose from the participants and that this was consistent and developed from the data. These findings are then explored further in *Chapter six* where these findings are explored in relation to the existing literature to develop the theory further.

Chapter seven provides the overall conclusions as well as outlining ‘what this study adds to the body of evidence’ in this area of practice, and the future recommendations arising from this study, while the *Appendices* adds further information to support the thesis and clarification for the reader.

1.2 Background and context

Failure to implement best practice from updated research, policies or practice errors is a complex issue. The ability to implement this into health care and encourage behaviour change is dependent on the skills and knowledge of the individual and teams, the culture and the intentions of the staff, as well as the leadership capabilities of the leaders (Lawton et al 2012). It is important that senior nursing staff understand, and influence behaviour change within their work environment and teams to ensure effective practices are embedded into practice.

1.2.1 Local Context

When examining research, it is essential it is reviewed in relation to the context of the setting and the professional background. Nationally, all NHS hospitals were undergoing extreme changes due to the government’s health service review which is ongoing (Department of Health 2012). The impact of this on local health care is unknown, however, evidence like the Francis Report (2013) highlights issues with organisational culture, acceptance of poor practices and failures to challenge poor care, which raises the potential risks for patients and staff. One aspect impacting

on this is staffing. This can be seen by the Market Insight report completed by Christie and Co (2015) entitled 'The UK nursing workforce, crisis or opportunity'. This report highlighted that nursing numbers remain problematic with a shortage of 15,000 nurses', an ageing nursing workforce, an increase the use of agency and overseas nurses and a lack of student nurse training places. Buchan et al (2017) agrees highlighting a current shortfall of nurses of around 22000 nurses which is set to continue.

Staffing numbers and skill-mix was also problematic for the hospital where this research took place. This local Acute Trust, caters for NHS patients, providing hospital-based care and has approximately two hundred and twenty-three beds with a range of inpatient and outpatient services. One challenge for the hospital which was situated between two major teaching hospitals was difficulty in recruiting and retaining staff. Retaining and recruiting staff was also exacerbated by the review of the hospital's sustainability by the Health Authority which, resulted in a management change. In February 2012, the Trust become a 'partnership' with a private company. This resulted in several years of uncertainty prior to the takeover with threats of closure and uncertainty for staff. In 2015, the takeover was starting to be embedded, however suddenly the private firm pulled out of the partnership and plunged the organisation further into uncertainty. During this change, the hospital leadership was under continual change with several changes of Directors of Nursing and Chief Executives resulting in changes to the Trusts values and processes.

This problem of recruitment and retention led to a situation whereby the hospital became reliant on agency staff. Wards regularly had periods where they were staffed by large numbers of temporary staff potentially adding further pressure to the permanent staff and was recognised as an increased risk to patient safety (Rickard, 2004; Moore and Waters 2012). Although there had been a priority placed on staff recruitment and retention this remained a problem. In response, the Trust had been actively recruiting overseas nurses. Although this increased the overall numbers of staff it had its own difficulties. The overseas staff some of whom were newly qualified, needed support and time from existing staff to develop their knowledge and practice in the UK setting, increasing the challenges

for the existing staff as it impacted on their workload. These challenges all added to the impact of the change and uncertainty and further exacerbated the pressure for the staff, highlighting the need for effective leadership to improve practice and support staff development.

This need to improve practice was identified by the Department of Health (2014) who outlined the NHS outcomes framework which consists of the five outcome goals of the Secretary of State. Domain 5 was concerned with ‘treating and caring for people safely and protecting them from avoidable harm (Department of Health 2014). This includes many aspects of care including safe surgery, improving the safety culture and medication safety. Following a review of the evidence including audits, incident data, local action plans, anecdotal evidence and the literature search it was found that there were areas of practice which needed development including pressure ulcer management, infection control and medication management.

This requirement to improve standards and practice was not unique to this Trust and has been highlighted frequently within the literature with reports of incidents, medication errors, policy non-compliance and environmental problems impacting on practice across the NHS (Armutlu et al, 2008, Agyemang and While, 2010; Frances, 2013, Shawahna et al 2016). This is compounded by the increasing complexities involved in medication administration due to the growing numbers of medications and new routes of administration (Jones, 2009). The problem of medication incidents was seen in the author’s Trust which, reported 1,439 incidents between October 2011 and 31 March 2012 with 9.7% of these medication errors (NPSA, 2012). This was confirmed by the National Reporting and Learning Service (NRLS, 2012) who reported 53,234 incidents in the NHS acute trusts which occurred between 1st October 2011 and 31st March 2012.

Despite this information, the number of medication incidents reported has continued to increase. The latest NRLS report on incidents (NRLS 2017) reported 198,943 medication incidents between April 2016 and March 2017. Although this increase may indicate increased reporting due to a developing safety culture it is also important to recognise that there are errors which, occur and go unreported

and means therefore these figures may be much larger (Tobias et al, 2013). This suggests that medication management remains a problem both locally and nationally and therefore this needs review to identify why these occur and how these risks could be eliminated.

1.2.3 National context in relation to staff development

To understand the issues involved with safe practices in medication administration it is important to assess the levels of the nurse's training and competency. As a registrant with the NMC the student nurse undertakes a three-year degree program. Medication training is divided into two parts, pre-registration and post-registration training. 'The Code' (NMC, 2015) outlines the general principles of professionalism in nursing and in relation to medicines states that as a nurse you must:

‘Advise on, prescribe, supply, dispense or administer medicines within the limits of your training and competence, the law, our guidance and other relevant policies, guidance, and regulations’.

Professionalism is outlined in the NMC code (NMC, 2015, p.15) as the need to maintain the professional reputation, standards of practice and behaviour set in the Code, demonstrate integrity and leadership, inspiring trust and confidence in the profession from patients, health care professionals, and the public.

One other NMC document important in this regard, is the 'NMC Standards for Pre-Registration Nursing Education' (NMC, 2010) which provides guidance for nurses, midwives, and students on the standards expected during their training and at the point of registration. This guidance is supported by the NMC Code (2015), hospital policies and guidance which forms the basis for medication training and competence. Within the researcher's hospital, there were several guidance documents on medication administration including the overarching medicines management policy and procedure. Training sessions, competencies and annual updates are mandatory for all new nurses which must be completed prior to administering medications which support 'best practice' in medication administration.

The Standards for Pre-registration Nursing Education (NMC, 2010) highlights several cluster skills which student nurses must cover in the pre-registration period including infection control, communication and medication administration (NMC, 2010). However, although the NMC guidance for universities proposes that these elements are included in all pre-registration programmes, the way these are implemented into the different programmes is down to “local determination” (NMC, 2010 p.103). This freedom to implement the standards is both a potential benefit and risk. Although this freedom is important to compliment local requirements, it could be problematic as the different education providers may interpret it differently and therefore potentially result in staff with differing knowledge and skills on medication administration from the outset.

However, the importance of developing knowledge and skills in medication administration is not just the responsibility of the universities but the individual as well. The Code (NMC, 2015) outlines the key strategies which registered nurses base their decisions on when administering medications including working within their level of competence, documenting and reporting safety issues. However, the competency assessment is also developed by individual hospitals and organisations. At the hospital where this research took place, the organisation developed a competency pack for all newly qualified staff and staff new to the area, prior to administering medications. Newly qualified nurses (NQNs) are classed as preceptees and are normally supported by a preceptor/mentor who is usually a more experienced nurse who can offer support for a period of a year after qualification. Preceptorship is recognised nationally as a period when registered nurses are supported to develop their skills and make the transition from student nurse to registered nurse (Willis, 2012). However, the effectiveness of this transition is dependent on the practitioner supporting the nurse and the knowledge handed down to them (Rodgers, 2005). Although it is important to recognise that nurses have valuable experience and knowledge to help support newly qualified nurses, it is also important to ensure that the practices are consistent and effective.

Currently, there is no consistent national development programme for nurses who support preceptors. Additionally, the programme which equips mentors to support students on pre-and post-registered course's (mentorship) in the author's region focused heavily on assessment rather than teaching or coaching skills. Although all nurses should be involved in the development of student and junior nurses, it is important that consistent messages are provided to ensure safe practice, especially in medication administration. The local nature of training, competency packs, and assessment in practices like medication administration is useful as it takes account of the local requirements. However, it is important to recognise that this piecemeal approach of organisations developing differing competencies and training may affect patient safety, especially in medication administration.

Even though several initiatives to support improvements in medication safety have been implemented across the NHS, medication errors continue to be problematic (NRLS 2017). Shawahna et al (2016) defined a medication incident as 'a deviation from the prescriber's medication order as written on the patient's chart, manufacturer's preparation/administration instructions or relevant institutional policies'. In 2009 the NPSA suggested that even though:

“Up to 96% of medication errors are associated with no or low harm the consequences of these can still be problematic to patients and the NHS” (NPSA, 2009, p.1).

However, the way medication errors are reported has changed. Therefore, it is no longer possible to identify the level of harm sustained for medication errors alone as the level of harm is recorded for all incidents together. From the 1st October 2014 to 31st March 2015, there were 642,098 incidents reported by a specialist and nonspecialist acute Trusts, 67,727 (10.55%) of these involved medications. This, therefore, remains a significant problem for patient safety.

Despite the substantial number of reported incidents, it is recognised that the real scale of medication error incidents is unknown (NHS England, 2014). NHS England (2014) indicated that the reported medication errors was just the tip of the iceberg with errors going unrecognised or considered to be of no

significance and therefore unreported. This then results in an inability to assess the true extent of the problem. Although, Armitage (2009) suggested that ‘error is inevitable’ it is essential that we understand why nurses may fail to implement ‘best practice’, why these errors occur and what strategies may reduce them. Therefore, the literature was reviewed to identify any current trends and existing research on nursing practices, patient safety and the barriers to implementing ‘best practice’.

Chapter 2: Literature review

2.1 Introduction

When conducting research, it needs to be based on the existing literature. This chapter outlines two phases of literature reviews undertaken by the researcher. The first phase was undertaken at the beginning of the planning stage of the doctorate in 2011, focusing on the topic of ‘failure to implement learning into clinical practice’. At the end of this literature review it was clear to the researcher that this topic was very broad and difficult to explore in depth. Therefore, the researcher decided to focus on one of the areas highlighted in the initial literature review as an area needing further research and an area which her organisation had indicated as an area of concern. Therefore, a second literature review was completed to focus on the implementation of best practice in medication administration.

2.2 Preliminary Literature Review – Implementation of best practice into clinical practice

An initial literature review was completed to identify any existing research on the implementation of evidence-based practice and learning within the workplace. This literature review aimed to explore the key issues and barriers to implementation and to identify any gaps within the subject (Denscombe, 1998 p. 159). Clark (2007 p.3) states that literature reviews aim to “identify, appraise and summarise” studies of relevance to a topic to develop a greater understanding. They add that as most studies are small and can contain bias or results due to chance, their worth can often be over or under-estimated, however by combining these into a meta-analysis the reliability of results can be improved. Evans (2007 p.139) identifies different review types depending upon the aim: systematic reviews for determining effectiveness and integrative reviews which, provides a broader topic investigation and therefore differs in scope, purpose and focus by combining the results of several studies to summarise the research, draw conclusions and provide direction for further research. He also provides a process for completing a review in five stages:

- Problem Identification
- Location of studies (literature review)

- Evaluation of studies
- Collection of data from individual studies
- Data analysis

This approach was supported by Russell (2005) who agreed with the stages of problem formulation, data collection (literature searching), data evaluation and data analysis however added interpretation and presentation of results. Russell (2005) explained that although there were guidelines for reporting literature reviews these were inconsistent and lacked detail. Therefore, she suggested one method which follows the presentation of primary research and includes the introduction, methods, results and a discussion section. As the author's aim was to provide direction for further research it was decided to use an integrative review and follow this recommendation and present the interpretation of this review in the format of a discussion bringing in other evidence to base the findings into the wider evidence-base. Therefore, the final presentation of this review will consist of the following steps.

- Problem Identification
- Location of studies (literature review)
- Evaluation of studies
- Collection of data from individual studies
- Data analysis
- Discussion of the findings

(Evans, 2005 and Russell, 2005)

2. 2.1 Problem for Review

The problem for review was initially ‘a failure to implement learning into practice’. As a Practice Educator within an acute NHS Trust evaluating the impact of education is essential. There are many forms of learning taking place in the Trust including mandatory training, induction, pre-and post-registration and work-based learning. In common with the literature discussed earlier, situations have been highlighted where learning implementation appears to have failed, therefore this review aimed to explore this and identify any gaps in knowledge.

2.2.2 Literature Search

A search was initially completed within the Cumulative Index to Nursing and Allied Health Literature (CINAHL) database. CINAHL is a specialist search database for Nursing and Allied Health Professionals and has up to date literature on the issues of failing to implement learning. To locate the studies keywords were used. These keywords were initially identified by the researcher regarding the area of interest. Further keywords were added from keywords used within the literature from research. The first keywords 'implement* learning' resulted in 277 results. The symbol of * was used to identify all forms of the word implement including implementation, implementing and implemented to provide a wider search.

As, the numbers of articles identified were large (n=277) this was reduced by the limits, peer-reviewed, research, the United Kingdom (UK) and the date 2000 – 2010 to ensure the articles were up to date which resulted in 99 articles. Although the initial plan was to limit the research to the UK to ensure the findings was compatible with the researcher's setting, using these restrictions, resulted in small numbers of articles looking at the implementation of learning within the UK (n=4). Therefore, this limit was removed. Following a review of these research articles, 18 were identified for further review and the search repeated in other databases (see table 1 p.14).

Even though the literature reviewed was prime research and peer reviewed, it is important to include other literature, to add to the primary researcher's understanding of the area under review. Green and Thorogood (2009) agree, adding that this should not be the total of the literature review otherwise the researcher can miss essential information which may have a bearing on the research. Therefore, other evidence including books, reports, national guidance and relevant websites were included to add depth and context to this review. Earlier work was also included if it was deemed to be relevant and important to the review. Hand searching was used to ensure up to date research was located. This search was then repeated with other key terms and other databases to expand the evidence base allowing the literature to guide the search (See Table 1 p14).

TABLE 1: KEY SEARCH TERMS

	CINAHL (Specialist nursing database)	British Nursing Index 1975-date Specialist nursing database	Eric 1966- date Education database	Science Direct General database –
First Term entered	Implement* learning			
Number of articles located	277	61	673	458
Combined with	Barriers			
Number of results	7	4	42	24
The second term entered	Learning Transfer*			
Number of articles found	113	7	206	308
Boolean Term used	And			
Inclusion criteria	UK ; Research; 2010-2011;			
Exclusion Criteria	Child			
Resulting themes	See Table 2.			
Other search terms	Theory/practice gap Barriers to learning Evidence based practice Nurse		Learning implement* Best practice	

2.2.3. Evaluation of Studies and collection of data

Following an initial review of the literature, articles were read and relevant articles which fitted the criteria of primary research within the date 2000-2011 were retained. All themes from the data were logged and compared with the next article to look for similarities or differences in the findings. Ten articles were retained for critical analysis initially by identifying whether the title and abstract fitted into the required study aims. These articles included Moore and Price (2004); Swain, Pufahl, and Williamson (2003); Kyrkjebo and Hage (2005); Maben, Latter and Macleod Clark (2006); Meyer et al (2007); Moseley and Davies (2007); Ploeg et al (2007); Gerrish et al (2008a); Hunter et al (2008) and Newton et al (2009). Following the critical reading, key areas of data including the samples, methods, aims and findings were placed into a grid for easy comparison (Appendix 2 p.276).

Once the studies had been selected the main themes from each paper were identified and added to the grid to enable comparison, identify any consistent findings across the papers (See Table 2 p15) and critically evaluated (see table 3 p.24).

TABLE 2: RESULTING THEMES FROM LITERATURE REVIEW

Resulting themes from the literature reviewed
Lack of time (workload, Time for learning and reflection) Lack of resources Lack of confidence and knowledge in using research reports Culture non-receptive to change Lack of support from managers, peers, colleagues Obeying covert rules Poor role models Role constraints Staff shortages Work overload Lack of supernumerary time Inability to practice skills or work with facilitators Lack of confidence in implementing new techniques Skill mix Inter-professional issues Cognitive issues e.g. assessing, providing constructive feedback, creating a learning environment Learning preferences Lack of engagement Indifference to students from ward staff Lack of learning opportunities in practice Influence of other nurses

These identified findings were collated and added into a grid to extract and compare the different themes and results and how they related to each other. From these, the main themes were identified and examined in more detail. These were then discussed in relation to the findings and other research to enhance the discussion. Following completion of the analysis further articles and literature were obtained to explore these issues in greater depth.

2.2.4 Data Analysis

The final stage of data analysis took place to evaluate the robustness of the research findings. A framework identified by (Hawker et al, 2002) was utilised to assess this robustness. This framework was supported by Flemming (2009) who had used the framework to assess the quality of the evidence used for a systematic review. Although this literature review was not a systematic review it was important to use a framework to assess the credibility of the research and therefore this approach was used. The framework consisted of nine factors including review of the abstract, title, introduction, aims, method, sampling, data analysis, ethics

and bias, findings, results, transferability/generalizability and the implications and usefulness of the studies. The framework was also suitable for research across the paradigms and therefore suitable to support the critique of these articles (Hawker et al, 2002). The first aspect of any literature identified is the abstract and title.

2.2.5 Abstract, Title, Introduction, Aims and Ethics

All articles provided a clear title, search keywords and abstract (n=8) or summary (n=2) to provide an outline of their research and findings. There was a clear and significant background for the studies which provided clarity to ensure the reader could see the relevance to their own practice and research. All the articles included a section on ethics which clearly described the process they undertook including issues of confidentiality and informed consent.

2.2.6 Method: Data Collection and Sample

Four of the studies used a quantitative approach (Swain, Pufahl, and Williamson, 2003; Moore and Price, 2004; Moseley and Davies, 2007 and Gerrish et al, 2008a) while the other six utilised a qualitative approach. Moore and Price (2004) used a cross-sectional study reviewing nurse's attitudes and barriers to implementing pressure area care. Cross-sectional studies are defined as a study whereby the researcher reviews a population to look at "the prevalence or determinates of health in the population at one point in time" (Gerrish and Lathlean 2015 p.263). The study by Moore and Price (2004) aimed to explore the attitudes, knowledge and behaviour of nurses in relation to pressure ulcers and found that a positive attitude alone was not sufficient behaviour change.

One study limitation from Moore and Price (2004) was that it was unclear which 'cross section' was being used as this area of the research was not discussed and therefore unclear. However, a convenience sample consisting of three hundred registered nurses were sent a questionnaire with a response rate of 43%. A pilot study was used to check the questionnaire validity which strengthened their findings. Data analysis was completed using the Statistical Package for Social Sciences (SPSS) along with the SPSS Text Smart for the open questions. The SPSS statistical package is recognised as an appropriate and effective method for analyzing all research statistics from the descriptive to more complex statistical

data adding robustness and identifying any significance in the findings (Moule 2015).

Moseley and Davies (2007) also completed a quantitative study using a questionnaire which was analysed using SPSS which looked at mentors of nursing students to assess their satisfaction with the role and what difficulties they encountered. Although the Thurston scale was identified by the authors as a less known instrument for devising questionnaires than the Likert scale, they clearly described the process they undertook and the difference between the two scales improving clarity for the reader. Again, limitations were discussed by the authors and with a large response rate of 89% from 89 mentors, suggesting this could be a credible report. This study found that although the mentors were positive role models overall and enjoyed the role, they did face time constraints, increased workloads and lack of staff which affected their ability to support learners in the way they wanted to. However, Moseley and Davis (2007) believed that although there were organisational constraints these had been explored in depth in the literature. They added that it was the cognitive and intellectual aspects of the student development which mentors found the most difficult such as developing relationships, keeping up-to-date with the student's programme and giving constructive feedback.

Gerrish et al (2008a) used a cross-sectional approach, and identified two groups being compared as junior and senior nursing staff. They sent a questionnaire to a large sample of 1411 nurses, which they identified as a Developing Evidence-Based Practice (DEBP) tool. This was set out in five sections using a Likert approach and focused on exploring the participant's knowledge, barriers to locating and implementing evidence as well as implementing change. To ensure the tool was valid the authors piloted it, with twenty nurses. Following the pilot, the tool was amended slightly which may have been a limitation in their study. However, 42% (598) responded which was accepted as a good response (Gerrish et al, 2008a) and was analysed using descriptive statistics. Ellis (2013p.106) argue that descriptive statistics tend to give a basic idea without the detail.

According to Maltby, Day and Williams (2007) descriptive statistics involve ‘techniques to collect, organize, and interpret data. Polit and Beck (2018 p.229) suggest these statistics, aim to describe and summarize the data. Although seen as weaker than random controlled trials these studies offer a valuable insight into nursing and social care practice (Maltby, Day and Williams 2007). The data from this study was analysed, using the Statistical Package for the Social Sciences (SPSS) and a clear description of the process was provided. The study found that many factors are involved in implementing best practice including the ability to locate and apply the evidence, team culture, interest in research, as well as the nurse’s personal knowledge and experience.

Finally, Swain, Pufahl, and Williamson (2003) used a self-reporting questionnaire designed to answer the questions ‘what students are doing’ and ‘whether this impacts on what they should be doing’. With a high response rate of 139 responding out of 148 nursing students, they found that although students had a ‘good’ knowledge of recommended manual handling techniques with 86% of correct responses they were frequently unable to use them. Data included open and closed questions and therefore included some qualitative responses which were reported briefly in the article. Data was analysed using SPSS software, however they also included some open question responses which aimed to show why the participants chose not to conform. To enhance reliability, they used a second independent coder to review a 25% sample blind of the open questions to increase the trustworthiness of the data which resulted in an inter-rated reliability of between 91-100% (Swain, Pufahl, and Williamson, 2003) supporting the study credibility.

The other studies used a qualitative approach. They all used appropriate samples and appropriate data analysis methods although the methodology was different. Two studies used longitudinal approaches. Maben, Latter and Macleod Clark (2006) followed up a cohort of student nurses (n=72) at qualification using a questionnaire and semi-structured interviews at 4-6 months and 11-15 months post-qualifying (n=26) to identify newly qualified nurse’s values of nursing at registration and over the 15-month period. The interviews were taped, transcribed and analysed by thematic content analysis which is the analysis of data into themes

and patterns (Polit and Beck (2018 p. 282) and then were analysed further using constant comparison.

Newton et al (2009) also conducted a longitudinal study over a two-year period reviewing twenty-eight second and third year nursing students and their experiences of barriers to learning in practice. One limitation of Newton's research was that although they collected data at various times during the two-year programme the article only reported the data from the first interviews. This data focused on participants work history, activities, and engagement within the clinical environment. As there was no information from the subsequent interviews or why these were excluded, it is difficult to see the whole picture, however, this discrepancy was identified and discussed. One area which increased the truthfulness of these two studies was that both researchers reported the study limitations. These limitations included 'elite' bias where people who have more confidence are more likely to participate (Maben, Latter and Macleod Clark, 2006), and sustaining long-term participant engagement (Newton et al, 2009). This problem of long-term data collection was discussed by Newton et al (2009) who provided effective measures to overcome these, including assigning each researcher several participants to follow-up increasing consistency and enabling effective relationships to be developed which strengthened their approach. Despite the limitations of longitudinal studies, there are benefits including the way researchers can explore changes to participants at intervals over time (Polit and Beck 2018 p.408) which in this case included the changing ideals and actions of nurses as their experience developed.

Meyer et al (2007) and Ploeg et al (2007) used a questionnaire survey approach. Surveys have several benefits because they are cheap, easy to administer and can reach large numbers of people. However, questionnaires have been criticised because the respondents are different from each other, may have differing literacy or reading skills or other reasons for replying rather than the research itself, potentially decreasing the study reliability (Polit and Beck 2018). Meyer et al (2007) also used semi-structured interviews following different training interventions ranging from three days to year-long courses to identify the impact of critical care skills training for ward-based nursing staff. Their sample included

forty-seven course attendees and nineteen managers across two sites. Their interview schedule was based on their chosen subject, the evaluation framework and prior evaluation experience previously used in other research which increased reliability. They undertook coding analysis using NVivo software which is recognised as an effective tool for analysing qualitative data (Koshy, 2010 p.116). The resulting codes were verified by the evaluation team and reviewed by another experienced group of researchers to increase the trustworthiness and reliability of the research.

Pleog et al (2007) also used semi-structured interviews; they wanted to identify the factors affecting the implementation of best practice guidelines. Their sample included fifty-eight staff and eight project leaders from twenty-two organisations which had implemented clinical guidelines for best practice. The interviews were audiotaped telephone calls following the implementation of guidelines to identify the implementation effectiveness. One disadvantage to telephone interviews is the inability for the researcher to note visual clues, however Ploeg's team implemented several ways to improve the studies credibility including collecting data from different agencies, participants, team debriefing and a data analysis audit trail. Data was transcribed and analysed using coding and thematic analysis by two of the researchers. Although there were limitations in the study including the fact that they were unable to determine differences between provider groups (e.g. RN and health care aids) these were acknowledged. The findings suggested that implementation of the guidelines was affected by the individual, the team and the organisations.

The three other studies (Kyrkebo and Hage, 2005; Moseley and Davies, 2007; and Hunter et al, 2008) all used different approaches. Although these differences prevent direct comparison they all demonstrated an effective methodology and process in relation to their methodology. Hunter et al (2008) used an ethnographic approach which "seeks to capture, interpret, and explain how a group, organisations, or community lives, experience and make sense of their lives and world" (Robson 2002 p.89). The data collection method included fieldwork observations in the practice setting over three shift patterns, followed up by eight in-depth interviews to identify how nurse clinicians learn from each other.

Fieldwork has some inherent problems such as the 'hawthorn' effect which occurs when someone behaves differently under observation to when alone, however, this method is accepted as an acceptable method for ethnographic and qualitative research (Robson, 2002 p.310) and the researcher completed the study as a participant to try to reduce these potential problems.

Kyrkebo and Inge (2005) completed six focus groups to identify nursing student's experiences of improvement knowledge in clinical nursing. Benefits to focus groups include that they can be a highly efficient method of collecting qualitative data, have natural quality controls in place with the participants and are relatively inexpensive and flexible (Robson, 2002 p.284). The disadvantages are reported as the inability to ensure confidentiality, the result cannot be generalised and the facilitation takes considerable skill (Robson 2002 p.284). Nonetheless, the authors addressed the study limitations and described interventions to increase the credibility of the study. These limitations and interventions included a pilot study and reviewing the questionnaire following feedback to clarify the questions. The six focus groups consisted of four to five people resulting in a large data set. During the focus groups, both researchers were involved, one as moderator to the group the second as observer and note taker. Both authors independently analysed the material to ensure this credibility was maintained. Although all the studies had limitations, they all appear credible, there was a clear audit trail and the processes and ethical considerations were clearly discussed.

2.2.7 Findings and results

Whittemore and Knafl (2005) suggested that when completing an integrative review, data analysis needed to be completed in a systematic way with the data from the primary sources being coded and categorized using a constant comparison method. In this case all articles were read and themes from the papers were identified and placed in a table and then compared to the next paper. The similarities and differences were noted and sorted into subthemes and categories to ensure the themes were compared to the findings of the other papers and overall themes identified.

Although all the studies had a slightly different focus and method, it was interesting to see the common findings. In 2003 Swain, Pufahl, and Williamson (2003) completed a survey to identify whether nursing students implemented manual handling training into clinical practice and found this was not always achieved. Swain, Pufahl, and Williamson (2003) identified several reasons why this implementation failed including the influence of other staff, lack of equipment, time and conflict between learning and patient needs which supported the idea of the theory-practice gap. Maben, Latter and Macleod Clark (2006) argued that this 'gap' shows clear disparities between what is taught and those encountered in the clinical environment. However, what is not clear is whether this 'gap' is unavoidable, a result of the learning approaches or organisational cultures (Newton et al 2009).

Maben, Latter and Macleod Clark (2006) like Swain identified several factors which prevented learning implementation despite strong nursing values. These factors were developed into two categories which they termed 'organisational' and 'professional' sabotage (Maben, Latter and Macleod Clark 2006 p.465). Organisational sabotage was defined as structural and organisational constraints e.g. time pressures, resources, role constraints, staff shortages and work overload, and 'professional sabotage' as obeying covert rules, lack of support, staff shortages and poor nursing role models (Maben, Latter and Macleod Clark (2006 p.469). This had also been highlighted earlier by Kyrkebo and Inge (2005) who identified a gap between that which student nurses learnt and that which they saw in clinical practice. They suggested that the students learning processes were influenced by the culture, role models and recommended the need for further development emphasising openness about beliefs, values and attitudes using a reflective approach.

All the studies apart from Newton et al (2009) highlighted increased workloads, lack of staff and skill mix as factor's which would prevent learning or the ability to carry out nursing tasks effectively. There were two categories which everyone agreed with firstly, that learning, and implementation of best practice was dependent on the attitudes, values and influence of staff and secondly, this was dependent on the time taken to implement these. It is interesting to note that all ten

studies highlighted organisational and professional aspects in some form which they claimed could potentially prevent the implementation of best practice and learning. However before identifying the major themes from the results it is important to assess whether the literature is credible and relevant to guide the study.

2.2.8 Transferability / generalisability and the implications and usefulness of the studies

Once the critical evaluation of the studies has been completed the reader can identify the transferability (the extent to which qualitative findings can be transferred to other groups (p.421) or generalisability (the inference that the findings can be generalise from the sample to the population in quantitative research p.148) of the findings to their own setting (Polit and Beck 2018). Table 3 (p24) shows the studies included in this review and the measures taken to enhance the integrity in the results. Four of the studies within this review used a quantitative approach. Muijs (2013) suggests that when using the quantitative paradigm, researchers must check their findings are robust. Therefore, the researcher needs to consider the validity, reliability and generalisability of the findings to increase the confidence and transferability of the findings to other similar groups.

TABLE 3: ASSESSMENT OF STUDIES CREDIBILITY

Studies using a quantitative approach							
Study reviewed	Abstract, title, key words, introduction aims and ethics clear and relevant	Methods and sample	Data collection and analysis	Validity	Reliability	Generalisability	Actions taken to increase reliability
Gerrish, K., Ashworth, P., Lacey, A., Bailey, J., 2008a. Developing evidenced based practices: experiences of senior and junior clinical nurses. <i>Journal of Advanced Nursing</i> . 62(1), pp.62-73	Y	Cross-sectional Study Compared junior and nurses Sample 1411 RN's Data collection method - Questionnaire using Likert ratings	Data collection method - Questionnaire using Likert ratings	Y	Y	Not discussed but	Descriptive statistic (SPSS). Evidence to support size of sample illustrated effectively
Moore, Z., Price, P., 2004. Nurses' attitudes, behaviours and perceived barriers towards pressure ulcer prevention. <i>Journal of Clinical Nursing</i> , 13(8), pp.942-951	Y	Cross sectional study reviewing nurse's attitudes and barriers to implementing pressure ulcer care Sample – 300 RN's	Data collection method - Questionnaire SPSS plus SPSS Text Smart for the open questions	N	N	No - pilot study with aim of further research	Pilot studies and review of the questionnaire . Descriptive statistic and SPSS
Moseley, L., & Davies, M., 2007. What do mentors find difficult? <i>Journal of Clinical Nursing</i> . 17, pp.1627-1634	Y	Sample 89 nurse mentors	Data collection method - Questionnaire SPSS	N	N	No aim to generalize due to non-randomised sample and the response rate.	Descriptive statistic and SPSS

Swain, J., Pufahl, E., and Williamson, G., 2003. Do they practice what we teach? A survey of manual handling practice amongst student nurses. <i>Journal of Clinical nursing</i> , 12, pp.297-306.	Y (Summary provided)	Questionnaire Sample – 148 nursing students Questionnaire included some open questions to identify reasons for answers and participants own words used.	Data collection method - Questionnaire SPSS plus second independent coder for open questions	N	Y	Y	Review of questionnaire Data analysed using SPSS Linked to other research findings to add strength
Studies using a qualitative approach							
Included Study	Abstract, title, key words, introduction aims and ethics clear and relevant	Methods data collection, sample and analysis	Credibility Member checking	Transferability The extent of external applicability of findings identified by thick descriptions	Dependability Audit trail	Confirmability Researcher self-criticism and analysis	Actions taken to increase credibility
Maben, J., Latter, S., and Macleod Clark, J., 2006. The theory practice gap: impact of professional bureaucratic work conflict on newly qualified nurses. <i>Journal of Advanced Nursing</i> . 55(4), pp.465-477	Y	Longitudinal study Questionnaire and semi-structured interviews Sample 72 students Student nurses at qualification and twice over the next 15 months. Data analysis - Constant comparison used	N	Y	Y	Y	States Lincoln and Gubas criteria to assess trustworthiness and credibility.
Meyer, E., Lees, A., Hunnphris, D., and Connell, N., 2007. Opportunities and barriers to successful learning transfer: impact of critical care skills training. <i>Journal of Advanced Nursing</i> . 60(3), pp.308-316.	Y	Survey & Semi-structured interviews – Sample 47 course attendees and 19 nurse managers Coding analysis using NVivo	N	Y	Y Clear full information on processes	Although no limitations or researcher role discussed they did use another group of experienced researchers to ensure trustworthiness	Questionnaire based on previous research and literature review External review and minor changes implemented. Interpretive approach.

Kyrkjebo, J., and Hage, I., 2005. 'What we know and what they do: nursing students' experiences of improved knowledge in clinical practice'. <i>Nurse Education Today</i> . 25(3), pp.167-175.	Y (Summary)	Focus groups x 6 (27 participants in total) 2 nd person unfamiliar with the student's course co-moderated and observed the focus groups to independently assess data.	N	Y	Y	Y	Pilot study and review of questionnaire and focus groups 2 nd researcher observed and assessed data
Newton, J., Billett, S., Jolly, B., and Ockerby, C., 2009. Lost in translation: barriers to learning in health professional clinical education. <i>Learning in Health and Social Care</i> . 8(4), pp.315-327.	Y	Longitudinal study over 2 year period Telephone interviews Sample – 28 2 nd & 3 rd year nursing students Analysis – thematic coding	N	Y	Y	Y	Team members assigned a group. Thematic analysis via NVivo 8.
Ploeg, J., Davies, B., Edwards, N., Gifford, W., Elliot Miller, P., 2007. Factors influencing best practice guideline implementation: lessons learned from administrators, nursing staff and project leaders. <i>Worldviews on Evidence-based Nursing</i> . Fourth Quarter, pp.210-219	Y	Semi-structured interviews Sample 58 nurses and 8 project leaders	?	Y	Y	Y	Credibility informed but process not clear
Hunter, C., Spence, K., Mckenna, K., Iedema, R., 2008. Learning how we learn: an ethnographic study in a neonatal intensive care unit. <i>Journal of Advanced Nursing</i> . 62(6), pp.657-664	Y	Ethnography Observation & 8 in-depth interviews	N	Y	Y	Y	Interviews and observation as participant

2.2.9 Validity

Validity is defined as the ‘degree to which inferences made in a quantitative study are accurate and well founded’ (Polit and Beck 2018 p.421). Maltby, Day and Williams (2007) and measures what it aims to (Boswell and Cannon 2017 p359). Ellis (2013 p.89) refers to this as whether the data collection tool has accuracy to in measure what it is aiming to measure. When looking at whether the researchers measured what they intended they all had appropriate methods clearly defined which demonstrated their methods. However only Gerrish et al (2007) discussed validity in relation to the tool used. This may be in part due to the articles word limit, nevertheless they all identified the limitations in their work and the methods used to enhance this further. Gerrish et al (2007b) explored the use of the tool in Gerrish et al (2007a) which gave clear and in-depth information on how this tool was developed and suitable to collect the data effectively thus increasing the validity and reliability of their findings.

2.2.10 Reliability

All the studies discussed potential bias and methods to reduce these. Reliability is defined as ‘consistency or the absence of variation’ (Polit and Beck 2018 p. 175). This is concerned with checking the replication of results to ensure the results remain the same when repeated (Ellis 2013 p.74). Moore and Price used a random sample of nurses to reduce any potential bias with a large sample size. Gerrish et al (2008a) highlighted that they used the whole population to avoid bias and also ensured there was anonymous questionnaire completion.

Although Swain did not use a random controlled sample they did use the SPSS program to analyse the quantitative data. They also added the aspects from the open questions to illustrate the themes using participants own words as well as using another researcher to independently code the data to give confidence that the data was accurate and replicable. Mosley and Davies (2007) did not use a random controlled sample and reported a low response rate which could affect the reliability of the findings however this was highlighted by the researchers as the reason that they would not be generalizing the findings. Nevertheless, all the studies gave sufficient information on the methods and data collection tool and potential bias to show that this could be replicated.

2.2.11 Generalisability

Generalisability was discussed by all the participants. Gerrish et al (2007) who argued that to ensure generalisability further research was needed. However, they had used appropriate statistical analysis and confirmed statistical significance ($P < 0.001$) of the differences between senior and junior nurse's confidence in finding and using evidence. This is important as a statistical significance of $P < 0.05$ means that the results did not occur by chance therefore $p < 0.001$ is seen as highly significant (Moule 2015).

Swain, Pufahl and Williamson (2002) also discussed generalisability suggesting that although their individual study had limitations which could affect generalisability the fact that the findings matched others in the field offered an element of generalisability although further testing was needed. The other two studies stated they were not aiming to generalise as Moore and Prices study was a pilot preceding further research and Mosley and Davies suggested that despite the high response rate they were not attempting to generalise because of a lack of a random sample and the response was 'less than complete' (Mosley and Davies 2007).

The methods used to assess the value of the research are different in qualitative research as the aim of qualitative research is not aiming to be transferable but to show trustworthiness. Although qualitative research has been criticised as lacking rigour, credibility and transferability to other settings, it can result in a rich source of data promoting insights into the experiences of individuals and groups (Duffy et al 2000, Henderson, Fox and Malko-Nythan 2006). To address some of the criticisms there have been several processes introduced which aim to evaluate and improve the validity and credibility of the research. One evaluation framework by Gill and Johnson, 2010 p.228) based on Lincoln and Guba's work in 1985 identified four areas for evaluating qualitative research including Credibility, Transferability, Dependability, and Confirmability.

2.2.12 Credibility

The first aspect to be reviewed in qualitative research is credibility. Credibility is identified as the way we assess the truthfulness of the findings (Beck 2000). To

assess this the researcher needs to consider the provision of ‘member checks’ or the extent to which an account is corroborated by participants (Gill and Johnson, 2010 p.228). This is supported by Boswell and Cannon (2017 P. 145) who argue that where possible the data should be taken back to participants to identify the truth of the data as well as using experts to check the resulting data and interpretations. Of the six articles which used qualitative data, none reported that they had used member checking to enhance their credibility. Maben, Latter and Macleod Clark (2006) and Ploeg et al (2007) reported that they had considered credibility within their work, however, the process was not highlighted. This may have been due to the way the articles were reduced in words to fit the journal article, however, this makes it difficult to assess credibility.

2.2.13 Transferability

The extent of external applicability of the findings identified by thick descriptions (Gill and Johnson, 2010 p.228) was identified by all six studies which utilised coded data. All of them provided good descriptions and quotes from their respondents which linked to their findings.

2.2.14 Dependability and Confirmability

Dependability is the audit trail to allow others to replicate the work if required while confirmability is the researcher’s self-criticism and demonstration of their analysis (Gill and Johnson, 2010 p.228) and objectivity of the data (Boswell and Cannon 2017 p. 398). All researchers provided clear reports of their process, so it would be possible for others to reproduce the main elements of the research. In addition apart from Meyer et al (2007) they all discussed their impact on their research and therefore, all studies could be dependable and confirmable. Although some aspects such as limitations were not always discussed (Meyer et al 2007) this may also be due to the article word limit however this does make it difficult for the reader to see whether the researchers had considered these areas of potential bias within their own analysis and therefore reduce the overall credibility of the study.

2.2.15 Relevance of the studies

When looking at an integrated review it is essential to not only review each study independently but to assess this rigour and credibility over the findings. All articles supported the original theme of failure to implement evidence-based practice and learning into practice. Two studies Gerrish et al (2008a) and Moseley and Davies (2007) used a slightly different approach, one reviewed guideline implementation and the other ‘mentors’ experiences which can reduce credibility (Polit and Beck 2018 p.265). However, they did demonstrate a clear link to the overall review theme and therefore were included. Although Polit and Hungler (1999 p.207) suggested that integrative reviews could be biased if the results include studies unlike each other, in this case it was acceptable to ensure a wide review into the subject as it provided the broader investigation of the topic (Evans 2007 p. 139). Despite the inherent limitations and potential bias in the individual studies as an integrative review, the combined studies demonstrated reliability and trustworthiness as promoted by Clark (2007).

2.2.16 Discussion of the Findings

The literature shows that despite the number of initiatives implemented within the NHS to improve standards, evidence continues to highlight failures to implement best practice and research into practice (Swain, Pufahl, and Williamson, 2003, Moore 2010). Maben, Latter and Macleod Clark (2006) identified several issues which prevented best practice being implemented despite the development of strong nursing values which they highlighted as ‘professional and ‘organisational sabotage’ and included lack of resources.

Lack of resources was confirmed as a factor which prevents the implementation of best practice and learning into practice by eight other studies (Swain, Pufahl, and Williamson, 2003; Kyrkebo and Hage, 2005, Meyer et al, 2007, Pleog, 2007, Moseley and Davies, 2008, Gerrish et al, 2008a, Hunter et al, 2008, and Moore, 2010). The importance of this can be seen by the example of manual handling where equipment such as slides sheets were not always available when moving patients with complex needs and therefore implementing learning from manual handling training was not possible (Moore and Price 2004).

This need for adequate resources and the management of these resources was supported by McCaughtry et al (2006) who argue that if resources are limited then education rarely succeeds. However, resources also include the staff (Coleman and Earley 2005). Therefore, it is essential to consider staff shortages and overloaded work patterns. McCormack, Manley and Garbett (2004) agrees, suggesting that when practitioners are faced with an increased workload with insufficient resources including staff it can lead to them feeling 'powerlessness and disempowered'. The feeling of powerlessness was highlighted by the respondents in Maben et al's (2006) study, which suggested that staff were "busy and had limited time increasing pressure on the nurses" which "eroded their compassion" (P.469), another staff member explained that staff had less time with patients, less patience with them and were unable to document properly (P.470).

This problem with high workloads was confirmed by Meyer et al (2007) who found that high workloads prevented learners from practicing their competencies and made it difficult for experienced staff or mentors to spend time supporting learners which according to Monlfenter et al (2009) increases the learner's confidence and the development of new skills. Newton (2009) agreed arguing that learners reported indifference from ward staff, a lack of learning opportunities in practice and were frequently unable to spend time with their role models or mentors. However, even with sufficient staff, problems can occur if there is a lack of skilled staff.

Skill-mix is concerned with the ratios in clinical environments between registered and unregistered nursing staff. The RCN (2010) recommended the skill mix, should ideally not drop below a ratio of 65 registered nurses/35 unregistered staff. Blegen, Vaughn, and Vojir (2007) agree reporting a direct link between the increase of registered nurses and a decrease of errors and patient incidents. This correlation between the increase of registered nursing staff and decreased inpatient mortality was confirmed by Rafferty et al (2007) who found that the increase in registered nurses also improved staff retention. However, with the potential decrease in registered numbers following the implementation of the all-graduate profession and increased numbers of support staff, this problem is likely to remain,

resulting in reduced support for learners and fewer experienced role models for nurses to develop their skills from.

This learning from senior colleagues or mentors is essential to allow the learner to develop their skills (Wenger 2010). The way nurses learn their skill was identified as from beginner to expert with support from an experienced professional (Benner, 1984). Hunter et al (2008) suggests that junior staff seek advice from senior colleagues which helps develop their knowledge and skills and learn from observation. They describe this as the 'orientation of nurses or learning to do things the way we do things here'. Wenger (2010) agrees explaining that learning from experienced staff helps build on existing knowledge and develop new knowledge with observation, reflection, and discussion to develop the understanding of the learner and identification of the key skills of the profession however with the organisational constraints identified above this is not always effective in practice.

Clinical nurses act as role models to students and junior staff by being observed and demonstrating effective work practices to a professional standard. The importance of role models is confirmed by Donaldson and Carter (2005) who completed a Grounded Theory study looking at the value of role modelling. They found that if a role model was perceived as 'good' then the learner could develop their skills and values. This can be seen by one respondent in Donaldson and Carter's (2005) study who reported that the mentor was everything she herself wanted to become a nurse. Perry (2008) agreed and found that role models were effective at helping to implement learning and develop their knowledge and skills.

However, Swain, Pufahl, and Williamson (2003) argued that not only could the other staff prevent the implementation of learning they could also influence learners to participate in prohibited activities e.g. the 'drag lift'. Reasons given including lack of time and resources, however 40% of the sample, reported that they continued with poor practices due to the influence and practices of other staff which they felt unable to challenge. When asked 'why they felt unable to challenge' responses including being worried about being accepted, working in unpleasant environments and feeling their involvement would be unwanted. This feeling of their point of view being unwelcome was highlighted by one respondent

who reported “they wouldn’t listen to a student” (Swain, Pufahl, and Williamson 2003 p.301). This problem is not unique to students as NQN’s and inexperienced staff also experience this problem of obeying hidden rules (Maben, Latter and Macleod Clark 2005). One reason for this was identified by Sherif in 1936 (cited in Buchanan and Huczynski 2010) who argued that in an organisation a person’s viewpoint will shift to an alternative view if there is doubt or uncertainty. This doubt about their practice is more likely to occur during the early days of the nurse's career or when starting new roles.

A period of preceptorship or induction for nurses starting new roles is important in relation to their expectations, the new situation and their values. Maben, Latter and Macleod Clark (2006) suggested that although during and after their initial pre-registration education, student nurses have high values, these personal and professional values and beliefs are often not followed through into actions. NQN’s and new starters to environments may feel vulnerable and uncertain as they start to attempt to implement learning.

Failures to support junior staff results in a culture where inexperienced nurses find challenge, learning and the implementation of best practice difficult remain (Gerrish et al, 2008a, Newton et al, 2009). Part of this problem is clearly linked to the perceived organisational issues identified by all studies including lack of time, resources, workload and skill-mix. One respondent in Maben et al’s study stated: “We need a lot of time we can’t give because we are too busy” (Maben, Latter and Macleod Clark, 2006 p.469). This potentially results in staff that understand ‘best practice’ but accept that implementing this is not possible due to the workplace situations.

This perception that it is difficult to implement best practice can lead to coercion of others into the practices and therefore increases the ‘sabotage’ or covert rules in the department. Fincham and Rhodes (1998 p.199) agree, suggesting that ‘sabotage’ as discussed by Maben, Latter and Macleod may be because of conflicting rules, which results in workers breaking one rule to fulfil another. This can then lead to the ‘hidden’ curriculum (Coleman and Earley, 2005). For example, by reducing the amount of time spent on supporting learners, more time is available

for patient care (Maben, Latter and Macleod Clark, 2006, Meyer et al, 2007, Monlfenter et al, 2009). If this practice continues for a time it can be accepted by staff as part of their 'norms' and therefore low on the priorities. Therefore, it is essential that future studies identify ways to reduce the organisational and professional 'sabotage' and increase the learning culture of the organisation.

2.2.17 Implications for future research

Understanding the implications for future research is essential for nurses to try to minimise the problems especially considering the potential cultures which can occur. DeSiliets and Dickerson (2008) argues that if an organisation's culture means that innovative approaches to care, are unwelcome, then it may be better to change the culture. Kyrkjebo and Hage (2005 p.167) agree, adding we need a nursing culture of:

“Reflection, openness, and scrutiny of underlying and organisational values and assumptions in care”.

However, this is not easy, Coleman and Earley (2005, p.27) define organisational culture as the climate or atmosphere of an organisation. They explain that the 'hidden' curriculum is powerful making it difficult to change. They concur with earlier research that staff tend to learn their roles and organisational requirements through their experience of observing and working with their role models rather than by what they are told.

If role models are promoting poor or 'covert' practice, then the practices will continue to flourish unless the organisational and professional barriers can be changed. Gerrish et al (2008a) argue that the nursing culture seems to be disempowering to junior nurses who are less confident at finding, understanding and implementing the best practice. It also means that in organisations like the NHS, different areas may have differing cultures and practices and nurses entering departments may be expected to conform (Fincham and Rhodes, 1998 p.199, Maben, Latter and Macleod Clark, 2006). This need to conform has the potential for organisations to repeat activities which lead to a lack of success (Brookes, 2009 p.275).

Mezirow (2000, p.3) argues that “much of what we know is based on our values and feelings which depend on the context in which they are embedded”. He adds that for learning to embed, learners have to ‘transform our taken-for-granted frames of reference to make them more exclusive, discriminating, open, emotionally capable of change and reflective to develop beliefs and opinions which will prove more trustworthy or justified to guide action’ which he termed ‘transformational learning’ (Mezirow, 2000 p.7). He adds that, individuals and groups engage in a reflective discourse which will then lead to change and emotional intelligence (EI).

EI was described by Goleman (1998) as our ability to recognise and manage our own emotions, motivating themselves and others and recognising and managing emotions in others. Anbu (2008) explains that EI is based on our own self-awareness which includes emotional awareness, accurate self-assessment, self-confidence and self-regulation which includes self-control, trustworthiness, adaptability and self-motivation including achievement, drive and commitment. Akerjordet and Severinsson (2008) add that when leaders have EI they can enhance organisational, staff and patient learning outcomes. Akerjordet and Severinsson (2008) completed a literature review of eighteen articles reviewing EI in a ten-year period (1997-2007) and suggested that if leaders have EI they can improve work environments. Although literature reviews can provide a review of the ‘best available’ evidence they should be up to date, and unbiased (Parahoo, 1997 p.97). In this case, although they identified 235 articles their rigorous inclusion and exclusion criteria resulted in eighteen valid articles to review. One part of the review which could show bias was that their objectives were to determine gaps based on common sense however, this was not defined and therefore is difficult to assess. Nevertheless, they did suggest two other factors including previous knowledge and critical thinking skills.

These critical thinking skills are an important part of the nurses’ skill. Standing (2010 p.4) argues that “each stage of the nursing process requires the use of judgment and decision making and this judgment is more effective when critical thinking skills are in use”. This need for critical thinking skills is supported by other researchers including Timmins (2006) and Forneris and Peden-McAlpine

(2009). Critical thinking skills and decision making need to include reflection to develop contextual learning and problem-solving skills within the practice setting which in turn can develop the transformational skills needed for current practice (Mezirow, 2000 p.257, Kyrkebo and Hage, 2005). However, the result of this critical thinking and practice is dependent on the nurse's involved and their skill in decision making.

Although decision making is a skill it is not always easy to explain. This was highlighted by Traynor, Boland and Buis (2010a) who found that nurse's decision making was based in their personal experience. Payne (2013) agreed adding that as the nurse's experience developed so did their decision-making skills. However, Fry and MacGregor (2014) suggested that it was not experience alone but the practitioner's self-confidence which enhanced the nurse's decision-making skills. Fry and MacGregor (2014) completed a multi-center qualitative exploratory study which showed that when the nurses had self-confidence they were able to problem solve and think critically while making decisions and practicing independently. They also found that exposure to policies and increased frequency of the task enhanced the nurse's decision making. Thompson and Stapley (2010) suggests that decision making comprises of cognition and judgment as well as socially constructed behaviour and does not always change with educational initiatives. However, Fry and MacGregor (2014) suggested that if nurses felt they are not coping then they may experience a loss of self-confidence which can affect their decision making and critical thinking skills and therefore become a risk to patient safety.

Thompson and Stapley (2010) completed a systematic review on decision making in nursing. A systematic review aims to explore the available evidence base, evaluate and interpret this to improve the consistency of results and the strength of the findings enhancing the transferability of the findings (Glasziou et al, 2001). The review used appropriate methods advocated by the Cochran library to enhance credibility. The review found that although education initiatives can work, results were inconsistent. Thompson and Stapley's (2010) findings suggested that nurses enter the profession with high values but may have low levels of critical thinking and critical reflection skills. Previously Hedberg and Satterlund (2004) suggested

that decision making is dependent on three things, the person deciding, the task and the setting. However, it is also based on the nurse's knowledge based on their practice context, culture, organisational structures, level of education and experiential learning (Carr, 2005). If decision making is poor, then nurses may be unable to develop the self-awareness and EI needed to challenge poor practices and enhance patient safety. It may also foster an environment which allows teams to work within covert rules and cultures to continue, which are not conducive to learning, putting patients at risk.

2.2.18 Conclusion

This literature review demonstrates that despite numerous studies looking at organisational culture, barriers to learning and improving patient care more needs to be done to enhance implementation of learning and best practice in clinical practice. Maben, Latter and Macleod Clark (2006) identified two categories affecting learning including 'organisational and professional sabotage'. All the studies reviewed concurred with at least one or more of the factors from each category as illustrated in Figure 1 (p38). These factors were derived from this data analysis process discussed using a thematic approach which involved collating, comparing and contrasting the themes from each paper assessing the themes and results and how they related to each other. From these, the main themes were identified principal areas of agreement included the lack of time and resources (organisational) as well as values and attitudes (professional) that affect best practice implementation. This inability to implement best practice was exacerbated by the time which learners could spend with role models (preceptors, mentors, and teachers) and the need for reflection and skills practice.

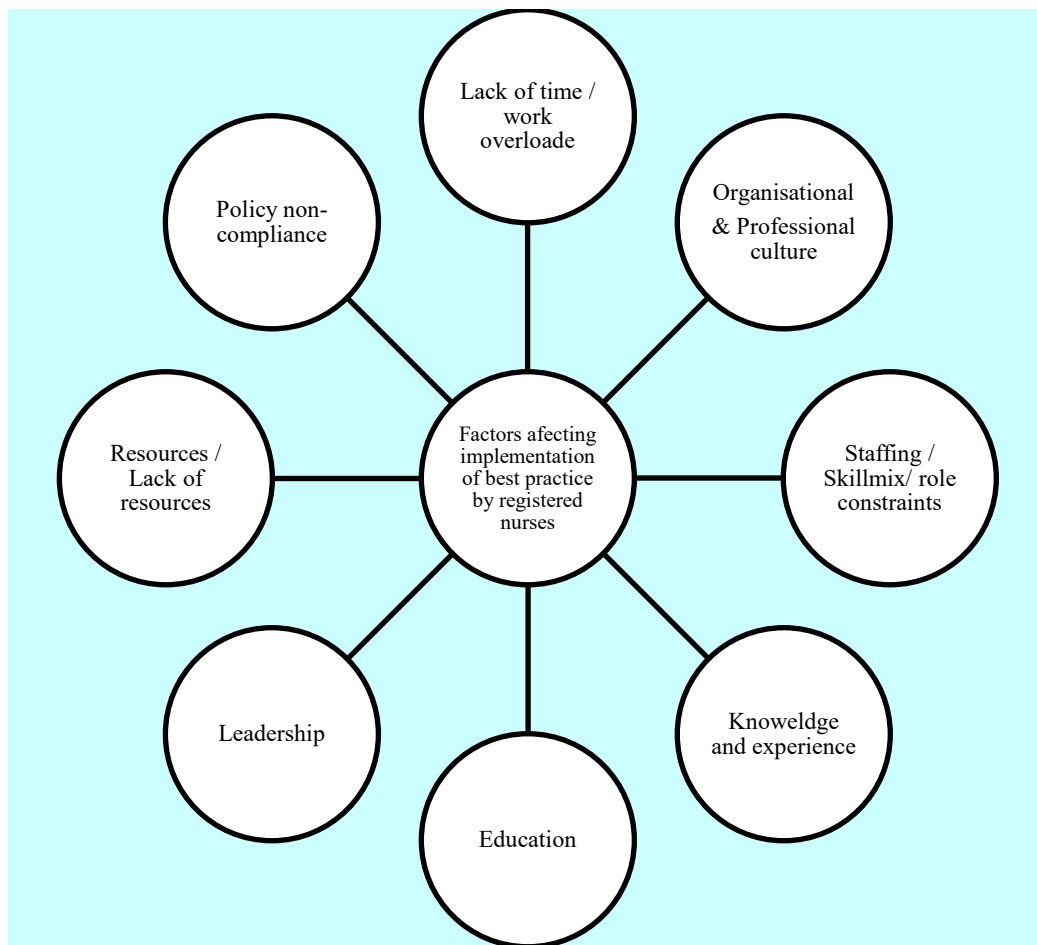


FIGURE 1: THEMES FROM PRELIMINARY LITERATURE SEARCH

To ensure best practice is implemented into clinical practice and the concerns raised by the Francis report (2013) are eliminated, the profession needs to continue to explore the challenges with implementing best practice. However, on completion of this literature review it became apparent that to manage this research it would be beneficial for the researcher to focus the research on one area of practice. When considering the area to focus on several areas were considered including the literature, the findings, resulting themes and the practice challenges within the local Trust. During this literature review medication administration was identified as an area which remained problematic. This was also supported by the incident data from national data (NLRs 2017), local data and reports from senior staff and therefore relevant nationally and locally. The challenges of medication administration had been highlighted by many researchers, including Lawton et al (2012) who found that factors affecting medication administration were

multifactorial which supported the previous literature search findings. Therefore, a second literature review focusing on medication administration and the factors affecting the implementation of best practice in this area was undertaken.

2.3 Focused literature review into medication administration and failure to implement best practice

Following the initial literature review medication administration was identified as an area with a gap in knowledge and the focus for this research. Therefore, a second literature search was conducted on medication administration in 2014. This aimed to identify any existing evidence, on medication administration, patient safety and the barriers to implementing best practice. The same process was undertaken for this review as in the initial literature review including the following steps.

- Problem Identification
- Location of studies (literature review)
- Evaluation of studies
- Collection of data from individual studies
- Data analysis
- Discussion of the findings

2.3.1. Problem for Review

The problem for review was developed following the initial literature review which identified factors affecting the implementation of best practice in medication administration including lack of time, staffing and skill mix potentially resulting in reduced patient safety, staff discontent and potential errors. In common with the initial literature review, situations have been highlighted nationally and locally therefore this study focused on medication administration to identify any gaps in knowledge and strategies for improvement.

2.3.2 Literature review process

The search was completed initially in CINAHL to locate the studies using the term ‘medication administration’. The search included the following limits peer reviewed, research, UK and the date 2000 – 2013 to ensure the articles were up to

date which resulted in six articles. However, after review, it was apparent that only one article was helpful to this review. Therefore, another term was entered as ‘medication error’ and this was combined with the key word learning, using the Boolean term ‘and’. Following a review of these articles eighteen were identified for further review and the search repeated in other databases (see Table 4 p4).

TABLE 4: SEARCH CRITERIA

CINAHL Search	
Databases	CINAHL; BNI; ERIC
First Term entered	Medication administration
Number of articles found with keyword	6
Second term entered	Medication error and learning
Number of articles found	122
Boolean Term used	And
Inclusion criteria	UK; research; date
Resulting themes	Lack of time, human factors, staffing, skill mix, interruptions
Other search terms	Implementing; incident reporting; barrier; learning; education; evidence-based; best practice. Nurse

Although the author recognised there were several levels of nurses from student nurse to experienced nurses, the grade of nurse was not used as an exclusion criterion. This was because nurses from the full range of grades and experience influence medications and therefore it was important to include all nurses from newly qualified nurses through to the senior nurses. Therefore, the word ‘nurse’ was used as a key word. There was also no distinction made on the type of medication such as intramuscular or oral as it was important to review evidence on medication administration rather than limit the search in this way. This search was then repeated with other key terms as identified in table 4 allowing the literature to guide the search. Following initial review of the literature articles were read, reviewed, and several articles fitting the criteria of primary research, from 2000 - 2013 were retained. Although the search was initially restricted to original studies from the UK this resulted in only six appropriate articles. On review of articles from overseas it was clear that contributory factors identified were similar to the UK therefore four further articles were identified for inclusion into the integrative review.

2.3.3 Evaluation of Studies and collection of data

Ten articles were retained for critical analysis initially by identifying whether the title, aims and abstract fitted into the required study which included: Fry and Dacey (2007); Tang et al (2007); Armitage, Newell, and Wright, (2007); McBride-Henry and Foureur (2007); Eisenhauer, Hurley and Dolan (2007); Dougherty, Sque and Crouch et al (2011); Hesselgreaves et al (2011); Kim and Bates (2012); Lawton et al (2012); Murphy and While (2012). Following critical reading, key areas of data including the samples, methods, aims and findings were reviewed and placed into a grid for easy comparison (Appendix 3 p282), the themes from the findings of the articles were identified (See table 5 p41) and the research methods and factors affecting credibility/validity were assessed (see table 6 p43). During this process all themes from the data were logged and compared with the next article to look for similarities or differences in the findings.

Table 5: Organisational and environmental factors

Resulting themes from the literature reviewed	
Medication administration Errors Latent conditions / failures Policy factors Patient miss-identification Remedies/strategies e.g. tabards Human factors Personal neglect Values/behaviours Protocols/policies and resistance Error types	Lack of knowledge Research gaps Calculations Levels of experience / service Shift times Single or double handed medication rounds Timings of medications Patient safety Incident reporting Empowerment

2.3.4 Data Analysis

Data analysis took place to evaluate the robustness of the research findings (Clark, cited in Webb and Row, 2007). The framework identified by Hawker et al (2002) was used to critique the literature and included the aims, methods, sampling, data analysis, ethics, findings, results, transferability/generalizability and the implications and usefulness of the studies as illustrated below.

2.3.5 Abstract, Title, Ethics, introduction and aims

All articles provided a clear title, search key words and abstract to provide an outline of their research and findings and demonstrated that they were relevant to the readers own area of interest (Polit and Beck 2018 p.61). Five of the articles included a section on ethics which clearly describe the process they undertook including issues of confidentiality and informed consent. The rest confirmed ethical approval had been obtained although this was limited with one or two sentences illustrating confidentiality which may have been due to the journals word limit.

2.3.6 Method; data collection and sample

There was a mix of study methodology including quantitative, qualitative and mixed methods (quantitative and qualitative responses). Three studies – Fry and Dacey (2007), Murphy and White (2012) and Tang et al (2007) used a questionnaire-survey approach. Fry and Dacey (2007b) used a cross sectional survey to explore the factors contributing to incidents in medicine management with a structured questionnaire developed from the literature, which used a combination of open, closed and Likert scale questions to increase the validity in their results. Cross sectional studies are defined as studies based on observations of different age, or development groups at one point in time (Polit and Beck 2018 p.149). In this case the nurse's ages and experiences were used as the basis for the comparisons.

Murphy and While (2012) who researched medication administration practices by children's nurses also used a survey approach and developed their own questionnaire, adapted from an existing validated tool. The questionnaire was analysed via the SPSS statistical package and answers to open ended questions transcribed for thematic analysis.

Table 6: Research methods and factors affecting credibility/validity

Studies using a quantitative approach							
Study reviewed	Abstract, title, key words, introduction aims and ethics clear and relevant	Methods and sample	Data collection and analysis	Validity	Reliability	Generalisability	Actions taken to increase reliability
Kim, J., and Bates, D., 2012. Medication administration errors by nurses: adherence to guidelines. <i>Journal of clinical Nursing</i> . 22, pp.590-598	Y	Observational Study Quantitative percentages Convenience sample Observed 293 cases of medication activities	Data Collection - Checklist based on five rights for observation Descriptive statistics	Content validity checked by 3 experts Observers trained for role	Y	Y	Observers trained and educated into observation techniques. Checklist validated by 3 experienced nurses. Observation completed in afternoon to reduce the hawthorn effect.
Fry, M., and Dacey, C., 2007a Factors contributing to incidents in medication administration. Part 1. <i>British Journal of Nursing</i> . 16(9), pp.536-559 Fry, M., and Dacey, C., 2007b Factors contributing to incidents in medication administration. Part 2. <i>British Journal of Nursing</i> . 16(11), pp.676-81	Y	Quantitative questionnaire	Analysis – SPSS Descriptive statistics	Content validity & face validity Pilot study	y	Y Recognised a potential lack of validity due to untypical small sample	Face validity Content validity Internal consistency of questions SPSS data analysis Y

Tang, F., Sheu, S., Yu, S., Wei, J., Chen, C., 2007. Nurses relate the contributing factors involved in medication errors. <i>Journal of Clinical Nursing</i> . 16, pp.447-45	Y	Descriptive statistics Focus groups (N=9) Semi-structured questionnaire constructed following focus groups	Themes developed through constant comparison Quantitative data by SPSS inferential statistics	Y	Y	Supports previous studies but small sample size means more research needed to confirm results and transferability	Face validity / Content validity SPSS analysis Narrative comments coded by two independent researchers inconsistencies discussed with focus group members
Armitage, G., Newell, R., and Wright, J., 2007. Reporting drug errors in a British acute hospital trust. <i>Clinical Governance: An international Journal</i> . 12(2), pp.102-114	Y	Quantitative descriptive statistics and thematic analysis reported as statistics		Not discussed	Not discussed	Y	Randomised sample Free text of incidents coded by content analysis 10% co-rated SPSS analysis Thematic content analysis of incidents 5 experts reviewed face validity
Murphy, M., and While, A., 2012. Medication administration practices among children's nurses: a survey. <i>British Journal of Nursing</i> . 21(1), pp.928-932	Y	Quantitative descriptive statistics	Thematic analysis of open questions reported as descriptive statistical data	Face validity of the tool confirmed by experts	Y	Limited due to small sample size from one hospital	Percentages used to illustrate all findings
Studies using a qualitative approach							
Included Study	Abstract, title, key words, introduction aims and ethics clear and relevant	Methods data collection, sample and analysis	Credibility Member checking	Transferability The extent of external applicability of findings identified by thick descriptions	Dependability Audit trail	Confirmability Researcher self-criticism and analysis	Actions taken to increase credibility

McBride-Henry, K., and Foureur, M., 2007. A secondary care nursing perspective on medication administration safety. <i>Journal of Advanced Nursing</i> . 60(1), pp.58-66	Y	Three focus groups – part of larger study	Member checking by small number of focus group members	Y	Y	Not discussed	NVivo analyse Narrative themes reviewed by research team to ensure themes consistent with content of narratives.
Eisenhauer, L., Hurley, A., and Dolan, N., 2007. Nurses reported thinking during medication administration. <i>Journal of Nursing Scholarship</i> . 39(1), pp.82-87	Y	Semi-structured interviews and tape recordings 40 nurses in practice	Not discussed	Y	Y	Not discussed	First level review by two independent researchers Two person consensus in subsequent analysis
Dougherty, L., Sque, M., and Crouch, R., 2011. Decision-making processes used by nurses during intravenous drug preparation and administration. <i>Journal of Advanced Nursing</i> . 68(6), pp.1320-1311	Y	Ethnography study Focus groups, observation and interviews	Not discussed	Y	Y	Y	Journal and field notes Two interviews analysed by independent specialist 20 nurses
Lawton, R., Carruthers, S., Gardner, P., Wright, J., McEachan, R., 2012. Identifying the latent failures underpinning medication administration errors: An exploratory study. <i>Health Research and Educational Trust</i> . 47(4), pp.1437- 1458	Y	Cross sectional qualitative design !2 nurses and 8 managers interviewed	Not identified	Y	Y	Study unable to test causation further research to explore causation and relationship between themes	Thematic content analysis Inter-rater comparison by 2 researchers
Hesselgreaves, H., Watson, A., Crawford, A., Lough, M., and Bowie, P., 2011. Medication safety: using incident data analysis and clinical focus groups to inform educational needs. <i>Journal of Evaluation in clinical Practice</i> . 19, pp. 30-38	Y	Mixed methods Categorical analysis of 1058 incident reports and three focus groups	Not identified	Y Quantitative data analysed appropriately	Y	Not discussed but appropriate methods completed via data to identify spread and type of incidents Qualitative data to identify themes	Part 1 Unclear incidents analysed collaboratively with a clinical and non-clinical researcher Random sample of incidents analysed by four researchers

Tang et al (2007) used a semi-structured questionnaire developed from the nine experienced nurses who discussed the ‘situations leading to errors’ in the focus groups (Tang et al, 2007). The questionnaire was validated by being reviewed by ten registered nurses who were asked to recall one experience of a medication incident and used the questionnaire to identify the contributing factors of the error. Again SPSS analysis was undertaken and a panel of five experts reviewed the questionnaire to increase the face validity of the tool.

Kim and Bates (2012) observational study reviewed the nurse’s adherence to guidance during medication administration and developed a checklist to aid this process. Their checklist was based on the ‘five rights of medication administration (right medication, right time, right dose, right patient and right route) and this was validated with the use of three experienced staff and the observers were trained to ensure consistency

McBride-Henry and Foureur, (2007); Hesselgreaves et al, (2011) and Dougherty, Sque and Crouch, (2011) used focus groups as their data collection method. Benefits to focus groups are that they can be a highly efficient method of collecting qualitative data, have natural quality controls in place with the participants and are relatively inexpensive and flexible (Robson, 2002 p.284). The disadvantages are reported as the inability to ensure confidentiality, a lack of generalizability and skilful facilitation (Robson, 2002 p.284). Nonetheless all the authors addressed the study limitations. Additionally, two of the researchers combined their methods with other methods. Hesselgreaves et al (2011) used incident data initially in phase one which used a quantitative focus before moving on to the focus groups while Dougherty, Sque and Crouch (2011) used a three-phase ethnographic study using focus groups, observation and interviews. The Ethnographic approach “seeks to capture, interpret, and explain how a group, organisation, or community lives, experience and make sense of their lives and world (Robson, 2002 p.89). The data collection method included three focus groups with fourteen registered nurses to define the ‘novice’ or ‘experienced’ IV medication administrator. The focus groups were followed by observations in the practice setting and semi-structured interview’s. Again, the limitations of the study were outlined clearly including the observer bias discussed earlier.

Overall all the studies appear credible, they were clearly written, and all described their processes effectively, although there were some limitations overall these were identified, clearly defined and managed effectively. All researchers recorded a clear process to enable others to replicate the study, the limitations and described their findings clearly.

2.3.7. Findings and Results

The findings and results were assessed using constant comparison as advocated by Whittemore and Knafl (2005). All articles were read, and themes were identified and compared. The similarities and differences were noted and sorted into subthemes and categories explored to examine any relationships and key themes. The evidence demonstrated that despite the wealth of initiatives implemented to improve medication safety, medication errors in nursing practice continue to occur and variations in nurse's practice remain. Following thematic analysis of the papers, several key themes emerged (See Figure 2 p48). These key themes included staffing, skill mix, policy non-compliance, organisational culture, increased workload, fatigue and lack of time to complete work.

The review indicated that these factors were often interdependent. As in the earlier literature review, the findings of these studies suggest a link between the practices of staff, their knowledge and the environmental demands including increased workload and fatigue resulting in a complex situation influenced by many factors. It was clear that these factors often overlapped as in the case of increasing workloads and fatigue. It is this combined nature of the factors which poses the problems to staff. Although the findings are important the implications and usefulness of the studies must be assessed.

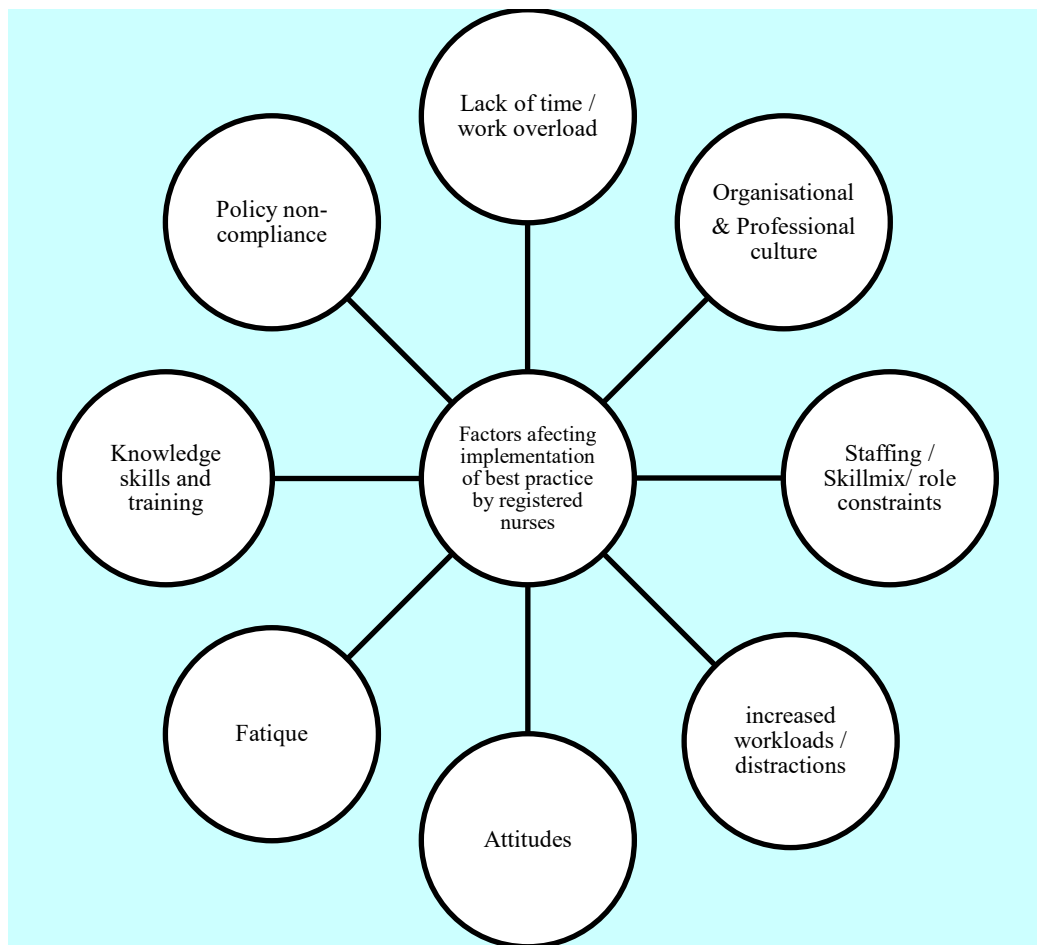


FIGURE 2: KEY THEMES FROM SECOND LITERATURE REVIEW – MEDICATION MANAGEMENT

2.3.8 Transferability / generalisability and the implications and usefulness of the studies

Five of the studies within this review used a quantitative approach and the validity, reliability and generalisability of the findings were reviewed. Although Fry and Darcy (2007b) highlighted that they were unable to ensure the ‘validity’ of the questionnaire, they assessed the face and content validity (the degree to which the questions answer represents the data to be collected) of the data collection tool using clinicians and a statistician during the pilot stage. They also checked the internal consistency of the questions by checking appropriate responses were given to some of the questions. They also used a combination of open, closed and Likert scale questions to increase the validity in their results. Tang et al’s (2007) questionnaire was validated by being reviewed by ten registered nurses who were asked to recall one experience of a medication incident and used the questionnaire

to identify the contributing factors of the error. Murphy and While (2012) adapted their survey from an existing validated tool which was reviewed for validity by a panel of five experts and included a pilot study which again resulted in minor amendments to the questions. While, Kim and Bates (2012) developed their observational checklist based on the 'five rights of medication administration (right medication, right time, right dose, right patient and right route) and this was validated with the use of three experienced staff. Kim and Bates (2012) recognised that observations may result in bias due to the Hawthorn effect however to minimise this the observers were trained and educated in observation techniques and employed only after they reached an agreed standard. The observations also took place during the afternoon shift so that the nurses would get used to the observers as part of the team in the morning thus resulting in potentially less observer bias. However, as the afternoon medication round is usually more simplistic and quicker than the morning drug round this may potentially affect the significance of the findings. Conversely, Armitage, Newell and Wright (2007) did not discuss validity or reliability however did discuss the methods and a clear audit trail of their methods

2.2.9 Reliability

Apart from Armitage, Newell and Wright (2007) all researchers discussed how they enhanced the reliability in their work. Reliability is defined as 'consistency or the absence of variation' (Polit and Beck 2018 p. 175). This is concerned with checking the replication of results to ensure the results remain the same when repeated (Ellis 2013 p.74). In this case the authors gave clear audit trails and discussed the potential bias as well as the factors which would enhance the ability to replicate the research. Tang et al reported a large response rate of 80% (n=90) which they suggested enhanced the reliability in their findings. The validity, analysis and sampling procedures were clearly reported, and every effort was made to report the credibility of the study. Murphy and While (2012) reviewed the survey tool and minor amendments were made. Following completion of the tool a pilot study of fifteen nurses was completed and there was a clear audit trail. Fry and Darcy (2007b) also completed a pilot study to check the questionnaire while Kim and Bates (2012) ensured that the observers were trained to a consistent

standard to ensure they obtained reliable results all of which would support reliability.

2.2.10 Generalisability

It is interesting to note that all researchers recognised that the limitations in their sample size, setting and methods meant that the study was less likely to generalise to other settings although useful. Both Armitage, Newell and Wright (2007) and Kim and Bates (2012) highlighted that their research was carried out in a single hospital which would affect generalisability. The other three studies all pointed out that their small sample size meant that these studies were not sufficient for generalisation, but further research could confirm this.

Although there are limitations with the studies they all discussed the methods to enhance their studies reliability, validity or truthfulness, the methods used and the way their research was implemented as illustrated in Table 6 (p43). Again, for the qualitative research specific criteria for analysis was used including credibility, dependability and confirmability.

2.3.11 Credibility and Transferability

The member checks or corroboration to enhance credibility was highlighted in two of the studies (McBride-Henry and Foureur, 2007 and Hesselgreaves et al, 2011). However, they all included the thick descriptions needed to demonstrate transferability and external applicability (Gill and Johnson, 2010 p.228). All studies utilised coded data with good descriptions and quotes from their respondents which related to the themes identified.

2.3.12 Dependability and Confirmability

All researchers provided a clear audit trail and therefore demonstrated dependability which allows others to replicate the work if required. However only Dougherty, Sque and Crouch (2011) specifically mentioned confirmability, the researcher's self-criticism and demonstration of their analysis (Gill and Johnson, 2010 p.228). Nevertheless, all the others did discuss methods used to enhance the credibility of their research including the use of independent researchers to

corroborate the themes identified by the researcher which increases the confidence in the results.

2.3.13 Relevance of the studies

When looking at the relevance of the studies it was interesting to note that all of these studies supported the original theme of failure to implement best practice into practice and in relation to the integrated review demonstrate good rigour and credibility over the findings. The overall findings echoed the findings in the first literature review and therefore supported the premise that there are many factors affecting medication administration and best practice. These factors included lack of time, staffing and skill mix as well as policy failures and cultural issues. All the studies incorporated methods to enhance transferability, credibility and appropriate methods to collect and analyse the data. The studies supported the need for further research to be undertaken to enhance understanding within this area of practice and how staff practice and patient safety can be improved. Therefore, these studies were relevant and provided a good basis to explore the gaps in practice which included the lack of implementation of best practice into practice.

2.3.14 Discussion of the Findings

Increased workload

One factor affecting the nurse's ability to ensure safe and effective medication administration is the perceived workload that many nurses experience. Tang et al (2007) reported that the participants believed workload to be a factor, with a percentage of 7.5% of medication errors believed to be due to increased workloads. This link between errors and workload was supported by Murphy and While (2012) who found that 78% of their participants believed high workloads impacted on medication errors, 30% higher than Tang et al's (2007) study. Their findings were also further supported by Sprinks (2012) who added that the combination of increased workload and a reduction in staff had a direct link to increased stress and burnout which continues to be an issue in the NHS. Buchanan and Secombe (2013) agree adding that NHS nursing numbers has reduced and is indicative of an overall decline which is set to continue. Other evidence concurred and found a direct correlation between low staffing numbers, increased workloads, an increase

in stress for nurses as well as a decrease in the quality of care including medication incidents and increased staff sickness which would result in further cycles of staff shortages (Duffield et al, 2011, Bolo and Yako, 2013). This sickness then has the potential to add further increases in workload for the remaining staff.

One aspect to consider is when and how the workload effects patient care. It is important that all nurses can deal with their workload, using skills such as prioritisation and planning to ensure safe effective care. The development of these skills remains an integral part of the student nurses training. The problems arise when the workload increases, and staff feel unable to manage their workload within the time available (Duffield et al, 2011, Bolo and Yako, 2013). If this continues it is likely that staff become tired and patient safety risks may increase. Although errors do occur during quiet times, the effect of increased workload is recognised as an issue in increasing risks to patient safety. Lawton et al (2012) agreed outlining several workload factors affecting medication safety including physical and mental factors, fatigue, the volume of work and the environment. Lawton et al (2012) used a cross-sectional design. Their methods were clearly described, and the resulting themes were clear.

One limitation of this study was the terminology used. Lawton et al (2012) identified '10 higher order' themes but failed to explain to the reader what these were or the definition of these. This clarity in writing is important to enable readers to understand the resulting themes however despite this the research findings and the processes were well documented and backed up with examples and developed using a recognised thematic content analysis framework. These findings were also supported by other researchers who reported on the effects of high workloads including, Maben, Latter and Macleod Clark (2006) who found that when staff were busy with a perceived lack of time, it resulted in increased pressures for the nurses. Tang et al (2007) added that this could potentially cause nurses to modify their practice and cut corners increasing the risks to patient safety in medications administration. However, if this modification is combined with other factors such as fatigue the risks could be increased significantly.

Fatigue

Fatigue is another factor which may have an impact on staff. This fatigue is exacerbated by the increased workloads, long shifts or the number of shifts which staff must complete without a break. This link between fatigue and errors was confirmed by Murphy and While (2012) who completed a quantitative survey reviewing the practices of children's nurses' medication administration. Murphy and While (2012) found that 61% of their participants had identified fatigue as a cause of medication errors. Although this number is a sizable percentage it is important to be aware that although one hundred and thirty mentors were contacted only fifty-nine (32%) returned them. Although this percentage is recognised as a good result for postal votes it does mean that not all nurses' views may be represented. There are many reasons people do not return questionnaires including lack of time or interest, or because they did not understand the questions. However, the questionnaire was based on an existing survey tool which was developed further to ensure it was fit for purpose. This recognition of fatigue as a risk factor for medication incidents or errors was also supported by Fry and Dacey (2007a) who argued that fatigue was found to be a contributory factor in medication errors. One issue which may impact on fatigue is shift patterns and length of shifts.

This link between fatigue and shift work is an important concept as an increasing number of departments are changing from eight hour shifts to longer twelve-hour shifts. Stone et al (2006) found that nurses working twelve-hour shifts had more job satisfaction and were less tired due to the reduced number of shifts that nurses needed to work. Trinkolff et al (2011) disagreed that long shifts resulted in less tiredness arguing that extended hours for staff can increase tiredness. Glendon and Gibbons (2015) completed a systematic review which suggested that staff working twelve-hour shifts were more likely to experience an error. The link between increased medication errors and long shifts was supported by Han, Trinkoff and Geiger-Brown (2014) who found that the job demands, shift patterns and long hours can result in chronic fatigue and therefore strategies should be implemented to manage these. Hendren (2010) had earlier suggested that managers must ensure that staff take breaks and are creative in how the shifts are planned, for example by limiting staff to only two long shifts a week. Nevertheless, Hendren adds that

often it can be the nurse themselves who opt to continue this shift pattern as they often prefer to do three long shifts and have longer periods of time off. This risk is increased when staff are dealing with other factors including interruptions during the medication rounds.

Interruptions

Interruptions during medication administration are highlighted as a factor which could lead to forgetfulness or lack of attention during administration. One of the initiatives to reduce this risk are the tabards designed to be worn during the medication rounds which state 'do not disturb' (Craig, Clanton and Demeter, 2014). However, there are problems with this initiative. Tomietto, Sartor and Mazzocoli (2012) found that although patients were likely to avoid disturbing nurses wearing the tabards, this was inconsistent, and would be unlikely to prevent other professionals from approaching staff administering medications. The reasons staff may interrupt and whether these are essential to patient care are not always clear.

Interruptions to the medication round were a common finding in several of the studies reviewed (Tang et al, 2007, Dougherty, Sque and Crouch, 2011). Fry and Darcy (2007b) undertook a survey and found that 93% (n=127) of respondents (registered nurses) believed interruptions affected medication errors. Their findings were also supported by other evidence (Tang et al, 2007, Biron, Lavoie-Tremblay and Loiselle, 2009; Murphy and While, 2012). This link between interruptions and increased errors is a problem which must be reviewed if we are to improve patient safety.

The risks associated with interruptions was also supported by Biron, Lavoie-Tremblay and Loiselle (2009) who suggested that the number of times they are interrupted means that nurses are rarely able to complete one nursing task without any interruptions occurring. This concern with interruptions is important for two reasons. Firstly, because medication rounds are the most interrupted nursing activity (which they found to be at a rate of six interruptions per hour) and secondly these interruptions are well known to contribute to medication errors (Biron, Lavoie-Tremblay and Loiselle, 2009, Murphy and While, 2012). Tang et al (2007)

pointed out that around 50% of errors could be attributed to interruptions of various kinds including interruptions by other staff, as well as the other activities such as answering the telephone, looking for missing medications as well as talking to staff or patients. Bennett et al (2010) agreed concluding that these interruptions are a concern as they affect the 'working memory of the staff', which causes a 'lack of focus and increases frustration and stress levels' (p.16). However, this is not a new problem as interruptions have been identified as a factor affecting patient safety for many years. In 1999 O'Shea (1999) reported that interruptions had been recognised as a problem since 1990. However, the problem remains (Shawahna et al 2016). It is interesting to note that even though there have been many studies highlighting the risks and the ways identified to reduce interruptions, including tabards or increased signage, these have not yet resolved the issue.

The 'do not disturb tabards' were implemented in several hospitals as a method to improve patient safety. This strategy aimed to prevent both patients and staff from disturbing the nurse, decrease the potential errors and increase patient safety (Currie 2014). Craig, Clanton and Demeter (2014) found that the use of white vests significantly reduced the number of interruptions. However, Currie (2014) suggested that although these vests had been successful previously, there had been mixed results in other countries. Currie (2014) suggested that in England some staff did not like the wording 'do not disturb' adding that there has been controversy on these as the wording may prevent patients from approaching the nurse even in times of emergency. Craig, Clanton and Demeter (2014) agreed adding that this may result in the patients not disturbing the nurse which may affect patient safety anyway. Although it is important for patients to be able to approach the nurse when needed, it is also important to recognise the potential effects of this or ensure staff can deal with these effectively without effecting the medication.

Other initiatives have been implemented to reduce interruptions which had similar levels of success including posters and signage. These promote the same 'do not disturb' message, as a way of alerting both patients and staff to avoid interrupting nurses administering medications but, these have also had limited effects over time (Jones 2009). Jones (2009) argues that studies implementing these interventions may be compromised by study bias or lack knowledge of the long-term effects,

resulting in nurses who may become complacent and less effective. Bennett et al (2010) agree suggesting there could be a lack of resolve in the initiatives which could be attributed to staff becoming complacent once they are used to seeing these interventions in practice and therefore the interruptions continue. However, Craig, Clanton and Demeter (2014) and Currie (2014) argue that these interventions could be successful if used in combination with awareness training. Nevertheless, the evidence suggests that interruptions may increase the pressure in times of high workload which could then increase the potential for nurses to lose their focus resulting in omissions or mistiming with medications.

Although interruptions can be a mitigating factor in medication errors, it is also important to recognise that these are inevitable. It could be argued that experienced highly professional staff should be able to deal with these sorts of interruptions. However, Fry and Darcy (2007b) found that there was a relationship between grade and medication error involvement with an increase of errors as the nurse's grade increased. They argue that although the seniority of staff did not correlate with the number of years' experience, there was an increase in incidents reported. This increase in reporting by senior nurses could indicate a greater sense of accountability and the fact that senior nurses were more likely to be involved in medications administration regularly. This also suggests that junior staff may not be reporting incidents which are an added risk. It is possible that this could be exacerbated in areas which have inadequate skill mix ratios.

Skill Mix

Skill-mix is concerned with ratios in clinical environments between registered and unregistered nursing staff as well as the experience the registered staff have developed. Blegen, Vaughn, and Vojir, (2007) suggests that an effective skill mix is important, reporting a direct link between the increase of registered nurses and a decrease of errors and patient incidents in inpatient departments. To rectify this the RCN (2010) recommended that the ratio of registered to unregistered staff should not drop below a ratio of 65%/35% (registered nurses / support staff), to ensure safe staffing levels. This increased safety with increased registered nurses is also supported by Moore and Waters (2012) who argue that although diluting

skill mix can be appealing in times of financial constraints, this could reduce the quality of patient care, resulting in increased mortality and decreased job satisfaction. This had also been highlighted earlier by Rafferty et al (2007) who argued that there was a significant link between the nurse patient ratio and mortality rates. Rafferty (2007) found that nurses working in those areas which had high patient ratios had lower levels of job satisfaction, high burnout levels and were seen to report reduced quality of care for patients.

However, two years later Shuldham et al (2009) completed a study which found that although there was an association between lack of staffing and patient outcomes the link was weak. One interesting suggestion made by Shuldham (2009) was that extra staff may have a negative impact on staffing. This negative impact was said to be because they may assume someone else has performed the nursing tasks. For example, turning patients to prevent pressure ulcers, which might not get done and therefore put patients at risk. Nevertheless, Shuldham (2009) acknowledged that their study findings were tentative at best due to the small study, which could not be generalised and did not have the power of large studies like Rafferty's. They also added that Rafferty's study had considered many variables for each outcome which may increase the validity of the study. In addition, a study by Aiken et al (2014) confirmed these findings adding that an increase in the nurse's workload would increase the mortality significantly. This suggests that the numbers of registered staff should generally be increased rather than decreased. However, skill mix involves not just numbers of staff but the experience and skills of the nurses.

Skill mix between experienced and junior registered nurses is a key area for review. Hesselgreaves et al (2011) reported that there was an increase in incidents in environments which had a high proportion of NQN's and an inability to relieve experienced staff to train them. However, the study by Tang et al (2007) reported that only 1.9% (2) of the nurses who reported an error considered that the error was related to their newly qualified status. Nevertheless, Unver, Tastan and Akbayrak (2012) suggest that this status as a new nurse does have an effect because NQN's are less likely to recognise the causes of error than the more experienced nurse and therefore continuing training is essential. Fox, Henderson and Malko-

Nyhan (2005) agreed that there was a clear need for NQN's to have adequate support, supervision and adequate staffing and skill mix to ensure their transition into the department. Manias, Aitken and Dunning (2005) agree, adding that the transition from student to graduate can involve periods of anxiety and lack of confidence requiring support from senior staff to help them make the transition effectively. Therefore, it is essential to try to identify ways to help resolve these issues. There have been several initiatives to help NQN's transition with the main process being a period of support in the form of preceptorship (Rodgers 2005). However, preceptorship can be ineffective if used in areas with high workloads or skill mix issues and may affect the developing knowledge and skills of the practitioner.

Medication knowledge and skills

The knowledge and skills needed for safe medication administration include knowledge of medications, calculations and knowledge of policies and procedures (Dougherty, Sque and Crouch 2011). Newly qualified and junior nurses generally develop their practical and theoretical skills in relation to medications with the support of senior colleagues. This support and development by senior nurses are essential to allow the learner to develop their skills from beginner towards the expert practitioner (Benner 1984). Hunter et al (2008) agreed adding that junior staff seek advice from senior colleagues which helps develop their knowledge and practice but they also learn through observation of practice. Hunter et al (2008) describe this as the 'orientation of nurses or learning to do things the way we do things here' (p.662). Wenger (2010) concurs arguing that learning from experienced staff helps build on existing knowledge and develop new knowledge through observation, reflection and discussion to develop the understanding of the learner and identification of the key skills of the profession. However, with the issues of workload and skill mix identified above this development is not always effective in practice.

Although experienced nurses act as role models for students and junior staff by being observed and demonstrating effective work practices as in the case of medication administration, the effectiveness of this training is determined by the ability of role models. Donaldson and Carter (2005) reported a Grounded Theory

study looking at the value of role modelling. They found that if a role model was perceived as 'good' then learners could develop their skills and values. This can be seen by one respondent in Donaldson and Carters' study (2005) who reported that the mentor was everything she herself wanted to become as a nurse and that she had learnt a lot from the role model. Perry (2008) also found that role models were effective at helping to implement learning and develop their knowledge and skills. However, Swain, Pufahl and Williamson (2003), reviewed student nurse's practices in manual handling and found that although students had a good knowledge of correct manual handling procedures this was not always carried out in practice. This study suggested that not only could the other staff such as nurses and health care assistants prevent the implementation of learning they could also influence the learner to participate in activities which were not recommended such as the 'drag lift'. Murphy and While (2012) agreed, adding that when junior nurses asked for support on medicines management it was an opportunity for the senior nurses to "enforce previously established practices in a ward area" (p.932). This enforcement of established practices could also be exacerbated by junior staff who feel unable to challenge other staff (Lawton et al 2012). If this cycle of enforcement and failure to challenge continued for a time existing practices could then become accepted by staff as part of their 'norms' or culture. It could also result in nurses who challenge being perceived as being difficult, especially in cultures where poor practices are accepted, or the staff feels the need to conform to the established practices to fit in, for example with policy non-compliance.

Policy compliance

Failure to follow policies is an important aspect which may have a significant impact on medication incidents. These might include failure to check the patient's identification effectively, taking short cuts in the checking procedure or in failing to report errors. These failures were reported by one respondent in Lawton et al's (2012 p.1445) study who stated, 'my reaction now is to say nothing, it didn't happen'. This failure to follow policy in relation to medication administration was supported by McBride-Henry and Foureur (2007) who suggested that instead of the following policy, staff were following the department culture which had been

in place. This link to established practices in departments can be a difficult aspect for inexperienced staff.

Often when a practitioner starts in a new team there is a period of adjustment, both in relation to the development of new skills and integration into the team and new ways of working within the department or organisation (Maben, Latter and Clark, 2006). It is now that the new nurses are inducted into the established practices or culture which can conflict with the individual's own values and beliefs, which could result in non-compliance with policies and procedures. As discussed Maben, Latter and Macleod Clark (2006) argued that during and after training nurses have high values originating from training which develops through their professionalism.

However, with NQN's and new starters to environments feeling vulnerable and uncertain as they begin to attempt to implement learning these personal and professional values and beliefs are often not followed through into actions (Maben, Latter and Macleod Clark, 2006). Lawton et al (2012) develop this further by suggesting that the ward atmosphere, led by matrons and sisters, could be seen in two ways. First, those who wanted to focus on speed and secondly, those who focused on patient safety in medication administration. The staff who focused on speed were more likely to adopt or modify policies or procedures. Eisenhauer, Hurley and Dolan (2007) referred to this as 'workaround' where staff would bypass the hospital policies or procedures to save time. Dougherty, Sque and Crouch (2011) suggested that this workaround, may be due to the theory of planned behaviour. This theory was developed by Ajzen in 1985 following the earlier work by Fishbein and Ajzen (1980) who developed the theory of reasoned actions (Ajzen, 1991).

This theory of reasoned actions aims to explain how individuals make decisions on behaviours which they may choose to adopt or not (Fishbein and Ajzen 1980). Their model suggests that background factors such as personality, emotion, values, education and information, could be some of the factors which, can affect whether someone would take on a behaviour. The individuals behavioural, normative and control beliefs are then considered internally before someone identifies the

perceived behaviour which can be seen in relation to a perceived change as seen in Figure 3 p61

This model has been used successfully in practice to examine and confirm the way that nurses personal attitudes, subjective norms and moral obligations effected the response to the use of physical restraints in the older person and was advocated as a framework which, could be useful in examining nurses' intentions in practice (Werner and Mendelson, 2001).

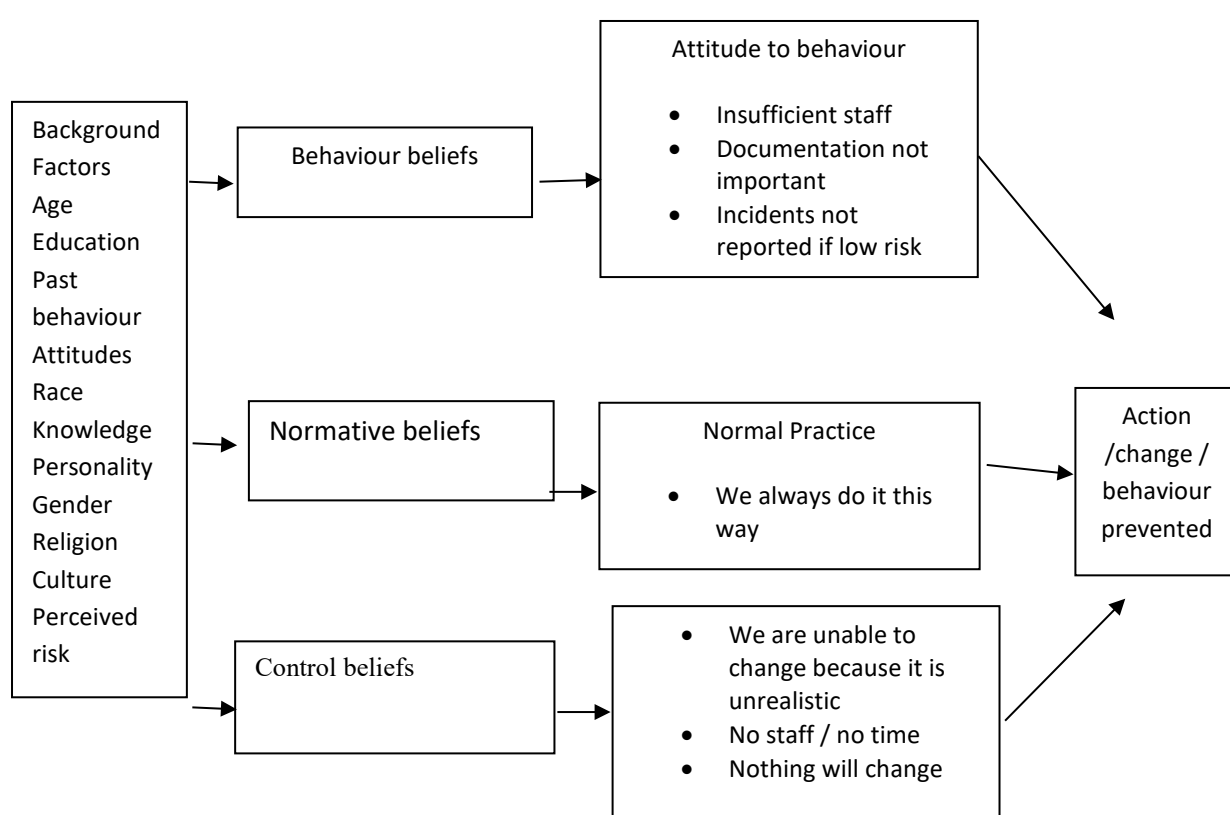


FIGURE 3: THEORY OF REASONED ACTION (FISHBEIN & AJZEN 1980)

However, Ajzen (1980) suggests this model is not a complete picture as it is how the attitudes are perceived in relation to the proposed behaviour which is important and can help to determine which actions will be acted upon and those which will be more difficult. Dougherty, Sque and Crouch (2011) suggest that this theory is based on the behavioural intent of the person which is developed from the evaluation of the perceived consequences of their actions. Dougherty, Sque and

Crouch (2011) completed a three-phased ethnographic study using focus groups, observation and interviews. The paper reporting these findings only discussed the observation and interview stages of the study nevertheless the limitations of the bias and potential Hawthorn effect were highlighted by the researchers (Dougherty, Sque and Crouch 2011). These researchers suggested that in this case there may have been the observation of 'atypical' behaviour. This may also mean that participants were not unduly concerned about being observed whilst failing to act to relevant policies, therefore suggesting that there was the risk of other 'more worrying behaviours' not seen during the observations.

One key finding of Dougherty, Sque and Crouch's (2011) study into nurses' decision-making was that there was often a failure to check the patient's identification as they 'knew the patient' (p.1308). This assumption results in staff who believed that there was a minimal risk as the right patient would get the right medicine. It is important to note that this may also be when departmental cultures develop where staff 'cut corners or violates safe practices by modifying policies or protocols to reduce the time taken to complete the task'. This was highlighted earlier when Pape et al (2005) argued that mistakes happen easily when nurses fail to check the patient identity when administering medications. This links to Maben, Latter and Macleod Clark's (2006) findings of 'professional sabotage' which included compliance with covert rules, lack of support, staff shortages and poor nursing role models as identified above. This professional sabotage can potentially result in practices which develop in the department and organisation and affect patient safety.

To ensure the safety of patients it is imperative that these organisational factors are modified, and staff are supported to develop their practices. However, as Dougherty, Sque and Crouch (2011) indicate, changing a nurse's practice in areas like these may take more than the implementation of new policies or training as it will also require a change of attitudes and behaviours. Therefore, it is essential to understand what causes these cultures to develop and how these can be corrected.

Organisational Culture

Organisational culture is not an easy issue to understand or explore. Coleman and Earley (2005 p.27) define organisational culture as the “climate or atmosphere of an organisation”. They explain that the ‘hidden’ curriculum is powerful, making it difficult to change. They confirm earlier research that staff tend to learn their roles and organisational requirements through their experience of observing and working with their leaders or role models rather than by what they are told. If role models are promoting poor or ‘covert’ practices, then it will continue to flourish unless we can change the organisational and professional barriers. Gerrish et al (2008a) agreed, arguing that the nursing culture seems to be disempowering to junior nurses who are less confident at finding, understanding and implementing the best practice. This also means that different areas may have differing cultures and practices and others entering departments may be expected to conform to local practices (Maben, Latter and Macleod Clark, 2006, Dougherty, Sque and Crouch, 2011, Lawton et al, 2012) increasing confusion and barriers to implementing best practice or changing the culture itself.

The addition of the interruptions, skill mix issues and lack of decision making can make it more difficult for staff to provide effective patient care as in the case of safe medication administration. One respondent supporting this in Maben’s study stated: “We’ve got a lot of patients who need a lot of time that we can’t give because we are too busy” (Maben, Latter and Macleod Clark, 2006 p.469). This conflict between the work and time results in staff that understand ‘best practice’ but who accept that this best practice is not always possible due to the workplace situations and therefore support the coercion of others and the increase of the covert rules in the department (Lawton et al, 2012). This was also highlighted in an earlier study by Fincham and Rhodes (1998) who suggested that this may occur because of conflicting rules, which results in workers breaking one rule to fulfil another. The effect of this then becomes the ‘hidden’ curriculum (Coleman and Earley, 2005). For example, by reducing the amount of time spent on checking name bands effectively or not watching patient’s take their medications, more time is available for another aspect of patient care. If nurses believe there is a lower risk of errors occurring (as in the case highlighted on patient identification), it can

result in them failing to change practice or to learn from previous errors and mistakes.

The role of the nurse must also be considered if patient safety is to improve in medication administration. McBride-Henry and Foureur (2007) argue that nurses themselves have a great deal of experience and knowledge of organisational culture and can distinguish between safe or unsafe care within medication administration, especially if there is effective communication within the department. They also found that the failure to communicate effectively with the wider team affected the safety in administration and resulted in staff that would rely on their own practices. Although the researchers accept the limitations of their study as being unrepresentative to other areas due to the small sample size, these findings do support other research which highlighted the importance of challenge and culture change (Dougherty, Sque and Crouch, 2012, Lawton et al, 2012). However, this challenge to the culture or to other professionals is clearly not easy. Despite the evidence discussed above outlining the need for change and challenge, a gap in practice remains (Francis 2013). Therefore, it is essential that all professionals within health care understand the implications and the methods which can be utilised to manage the change as well as the reasons why previous attempts at change have failed.

Education and Training

One method to enhance change and reduce medication errors might be to ensure that effective training and development is available for staff. The evidence reviewed included the need for regular medication updates and training for new and existing staff as well as protected medication rounds which could potentially improve patient safety and the reinforcement of policies and procedures. (Fry and Darcy, 2007a, Fry and Darcy, 2007b, Tang et al, 2007, Hesselgreaves et al, 2011, Murphy and While, 2012, Kim and Bates, 2012). However, Dougherty, Sque and Crouch (2011) argue that the current education provision for medication administration needs to be restructured. They suggest that training needs to include a variety of factors including the behaviours and attitudes of nurses, the risks of failing to follow policies and strategies to minimise risks including interruptions and drug calculations.

It is also important to develop and enhance the clinical decision-making skills of the nurse (McBride-Henry and Foureur, 2007). Standing (2010) supports this arguing that

“Each stage of the nursing process requires the use of judgment and decision making and is more effective when critical thinking skills are in use” (p.3).

Critical thinking skills include reflection to develop contextual learning and to develop problem-solving skills within the practice setting, which in turn can develop the transformational skills needed for current practice (Kyrkebo and Hage, 2005, Mezirow, 2000, Forneris and Peden McAlpine, 2009). However, to improve any of these skills quality education programmes and competencies should be implemented. There are several methods available to develop training including:

- Classroom-based programmes
- Competencies
- E-learning
- Reflection
- Practice sessions
- Protocols

However, there is yet no consistent method or programme for teaching and developing medication administration. The result of this inconsistency of training throughout the country is that medication administration training can be variable depending on where the training is undertaken. Pryce-Miller and Emanuel (2010) argue that to ensure effective staff development, both universities and health care organisations must make a commitment to continually develop nurses and students to improve patient safety. However, as medication administration is a complex process staff should have training which supports each element, for example calculation skills (Pryce-Miller and Emanuel, 2010). This was supported by Wright (2006) earlier who suggested that ‘nurse’s drug calculation skills have become a national concern’ (p.46). They proposed that organisations and staff themselves should provide opportunities to revise and improve their key clinical skills in medication management. One method utilised for staff development training which could complement all learning is the reflective learning approach.

Reflective practice is one method used to help staff to develop their practice and identify areas of practice that could be improved. Jones (2009) suggests that as much of the literature refers to poor calculation skills, poor adherence to protocols or policies and ineffective practice, it is important that these are all be addressed. Hesselgreaves et al (2011) who completed a mixed methods study using focus groups and a critical analysis of incident reports agreed, adding that nurses learn about each other, from each other, suggesting that learning together on the incidents could enhance patient safety and staff development. They also argued that learning needed to be developed for inter-professional learning rather than the current multi-professional training provision. What is clear is that current education needs a review, not only on the risk factors but also the way these programmes are designed and implemented.

Human Factors

Identifying the causes of medication incidents is often difficult and includes multiple factors. The Human Factor Analysis and Classification system developed from the work of James Reason (2000), identified four levels of failure including preconditions for unsafe acts, organisational influences, unsafe supervision and unsafe acts. The model by Reason (1990), is important when considering the reason for errors as it is imperative that practitioners understand the causes of errors. Reason (1990, p.210) suggested that several 'failure types' including fallible or imperfect decisions, line management deficiencies, such as organisational and supervision failures and the 'failure tokens' which includes the psychological precursors of unsafe acts and unsafe acts themselves. These can be organised into four categories.

1. Unsafe acts
 - a. Error: Omissions, wrong route, drug, time.
 - b. Violations: Policy non-compliance
2. Pre-conditions for unsafe acts
 - a. Attitudes, fatigue
3. Unsafe supervision:
 - a. Inadequate training
4. Organisational influences:
 - a. Staffing, skill mix

Table 7 (p67) identifies the potential failure types and how they relate to the themes identified from the literature and presented in this chapter. It is interesting to note that the factors identified within the four themes such as workload, skill mix, interruptions, policy compliance and unsafe supervision and the organisational culture identified are areas consistently reported within the literature above as areas which effect practice and will pre-dispose staff to an increased risk of incidents occurring.

TABLE 7: POTENTIAL FAILURE TYPES RELATED TO IDENTIFIED THEMES FROM THE LITERATURE (ADAPTED FROM REASON 1990)

Themes from literature	FAILURE TYPES			
	Pre-conditions for unsafe acts	Unsafe acts	Unsafe supervision	Organisational Influences
Fatigue	Y			
Workload	Y		Y	Y
Interruptions	Y			Y
Skill mix	Y	Y		Y
Policy non-compliance	Y	Y		
Knowledge and skills		Y	Y	Y
Training		Y	Y	Y
Organisational culture	Y			Y

However, it is important to recognise that it is often not one factor alone which causes incidents but complex and multi-factorial situations and factors, for example, there are continual reports of low staffing numbers and poor skill mix issues, all of which lead to staff becoming tired and struggling to manage the workloads which would meet the preconditions for unsafe acts. Tang et al (2007) reported that ‘about 37.5% of errors are due to increased workloads and inexperienced staff’ (p.1302). Duffield et al (2011) agreed adding that when there was an increase in workload, core nursing care was left undone. However, Tang et al (2007 p.447) added that medication errors result from multiple factors including increased workloads, lack of training, complicated patient conditions, nurse’s personal neglect or unfamiliarity with medications. Murphy and While (2007) agreed adding interruptions, fatigue, inadequate knowledge and policy non-compliance.

Nevertheless, even when there are organisational causes of errors such as increased workloads the individual factors for practitioners remain an issue. This is supported by Reason (1990) who argued that errors occurred due to unsafe acts based on either unintended or intended action such as slips or lapses or failure to apply rules or to apply them correctly as identified in Figure 4 p69. This suggests that the multi-factorial aspects of increased workloads, staffing and skill mix issues may not be the full picture. Therefore, it is vital to review the acts themselves to fully understand the situation.

Unsafe Acts

Unsafe acts are divided into two parts, intended and unintended actions. The intended actions include violations and mistakes (Reason 1990). One type of violation is sabotage, such as tampering with medications or equipment or deliberately falsifying records (Reason 1990). Although important, sabotage is not explored in this research. The intended action includes other violations such as policy non-compliance where staff fail to follow policy. The intended actions also include mistakes arising from the individual, either from a lack of knowledge resulting in poor practices, and rule-based mistakes where good rules are either misapplied (using the wrong syringe to draw up insulin) or bad rules are applied such as failing to calculate and assuming others know because of experience. Unintended actions are those which, include omissions, memory failures and place-losing usually when distracted.

All these intended and unintended factors can be seen within the findings of Tang et al (2007) and Murphy and While (2012). Understanding these factors may be a way to help develop the safety culture needed to improve patient safety. However, developing a safety culture is not easy. Tingle (2013) looked at the ways organisations can implement a patient safety culture, including areas for consideration such as:

- Embracing a learning culture
- To place quality of care and patient safety at the top of their priorities
- Patients and carers to be involved with all levels of health care from board to ward
- Safe staffing
- Training on quality improvement for all managers.

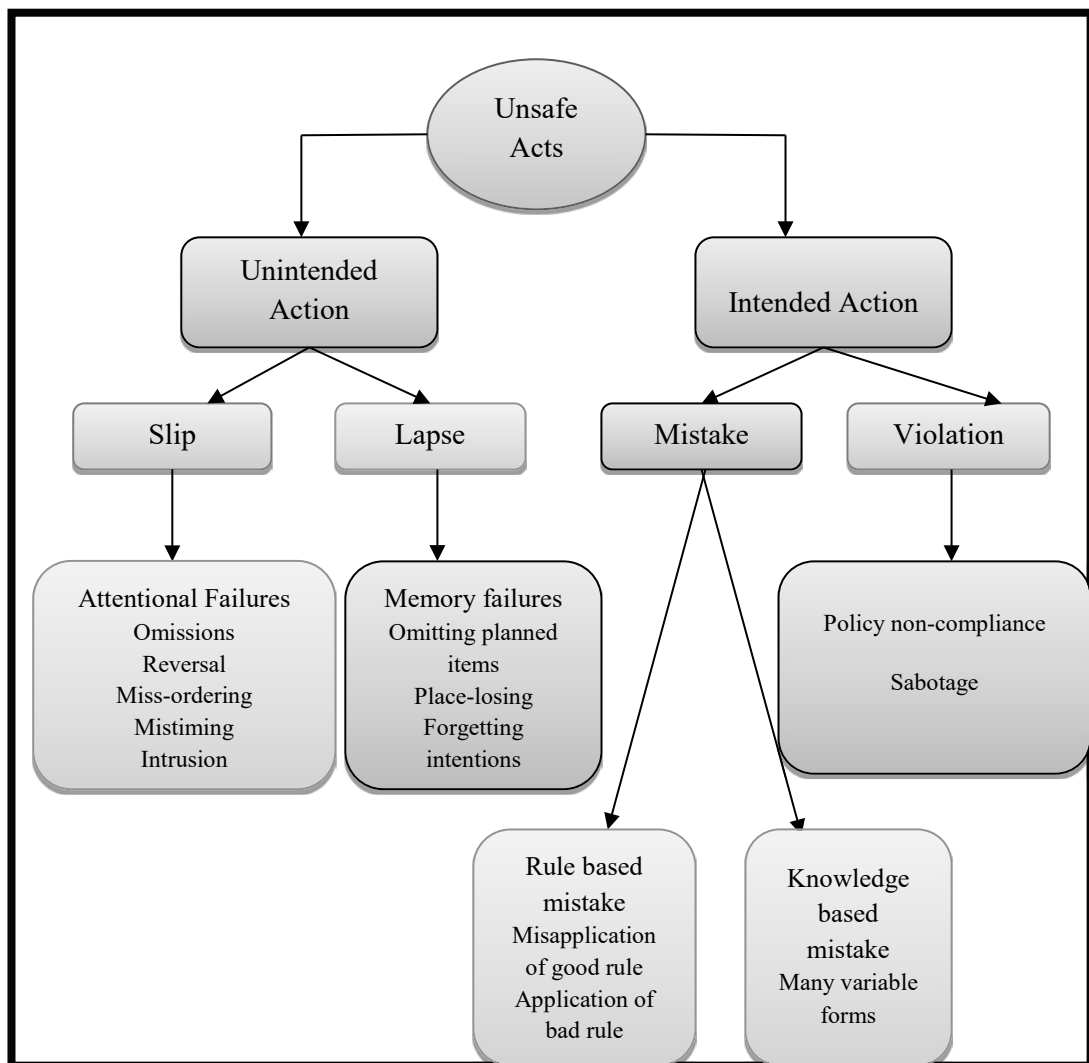


FIGURE 4: UNSAFE ACTS (REASON 1990)

To ensure this training and development of knowledge and skills is successful there is a need to ensure learners have time and opportunities to access high-quality training. Meyer et al (2007) agreed, adding that often learners could be prevented from practising their competencies from courses and it can be difficult for experienced staff or mentors to spend time supporting them. Monlfenter et al (2009) agreed with this need for time to work with mentors arguing that it helps to increase the learner's confidence and the chance of developing new skills. It was also supported by Newton et al (2009) who suggested that often learners reported the indifference to students or new starters from ward staff, a lack of learning opportunities in practice and that learner were frequently unable to spend time with

their role models or mentors. Although knowledge and training are highlighted as one of the key areas of prevention it is interesting to note that at present there is no consistent method for this to occur across the UK. Training is incorporated to all pre-registration programmes by the NMC cluster skills (NMC, 2010) which outline the standards all NQN's must meet (see Table 8 p70).

TABLE 8: CLUSTER SKILLS (NMC 2010)

Essential cluster skills (NMC 2010)	
Outcome The newly qualified graduate nurse should demonstrate the following skills and behaviours. They should be used to develop learning outcomes for each progression point and for outcomes to be achieved before entering the register.	
Point 33	People can trust the newly registered graduate nurse to correctly and safely undertake medicines calculations
Point 34	People can trust the newly registered graduate nurse to work within legal and ethical frameworks that underpin safe and effective medicines management.
Point 35	People can trust the newly registered graduate nurse to work as part of a team to offer holistic care and a range of treatment options of which medicines may form a part.
Point 36	People can trust the newly registered graduate nurse to ensure safe and effective practice in medicines management through comprehensive knowledge of medicines, their actions, risks and benefits.
Point 37	People can trust the newly registered graduate nurse to safely order, receive, store and dispose of medicines (including controlled drugs) in any setting.
Point 38	People can trust the newly registered graduate nurse to administer medicines safely and in a timely manner, including controlled drugs.
Point 39	People can trust a newly registered graduate nurse to keep and maintain accurate records using information technology, where appropriate, within a multi-disciplinary framework as a leader and as part of a team and in a variety of care settings including at home.
Point 40	People can trust a newly registered graduate nurse to work in partnership with people receiving medical treatments and their carers
Point 41	People can trust the newly registered graduate nurse to use and evaluate up-to-date information on medicines management and work within national and local policy guidelines.
Point 42	People can trust the newly registered graduate nurse to demonstrate understanding and knowledge to supply and administer via a patient group direction.

The expectation is that all Registered Nurses are competent practitioners in medication management and must maintain competence as identified by 'the Code' (NMC, 2015). The code points out that all nurses must comply with their

employer's policies and procedures and must maintain their competence through revalidation.

2.3.15. Conclusion

This critical review of the literature has demonstrated that despite the numerous studies looking at medication administration and the innovations and training available to decrease medication errors, more needs to be done to identify ways of decreasing these errors and maximise patient safety. The main areas of agreement within the research studies included the increased risks from interruptions during medication rounds, skill mix, workload and a failure to conform to policies or protocols. Although there are several factors involved in medication administration (See Figure 5 p71), it is unlikely to be a single cause for errors but is more likely to be a culmination of the factors which result in an error occurring in practice.

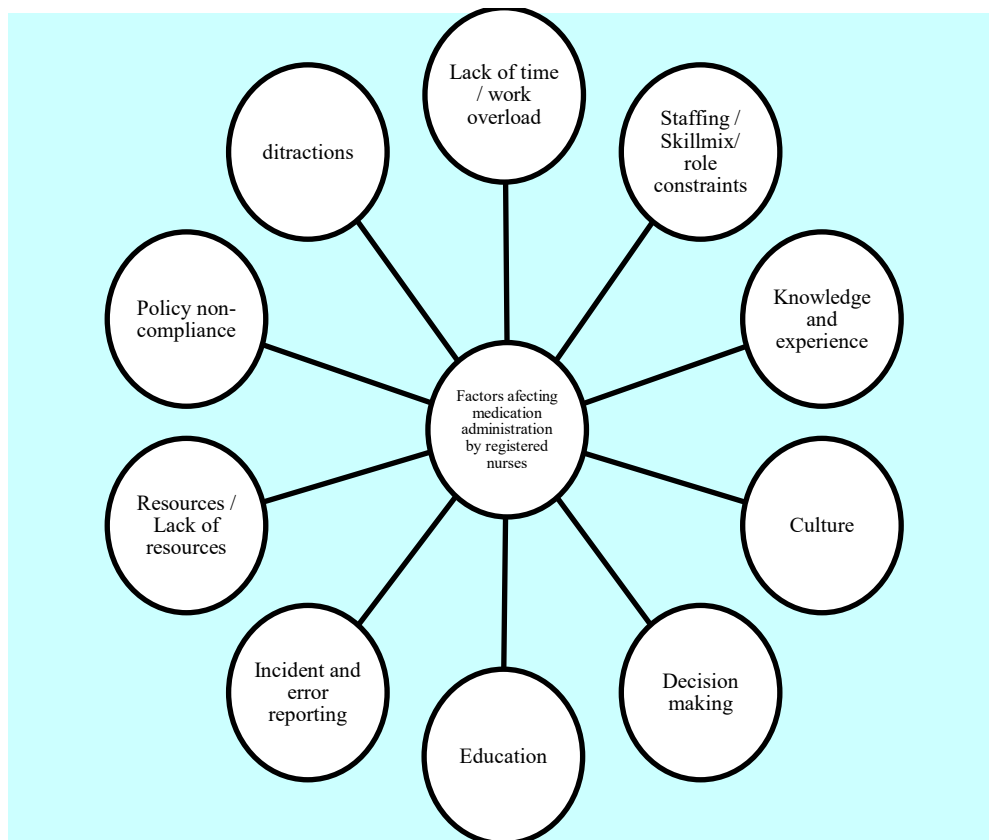


FIGURE 5: THEMES IDENTIFIED FROM LITERATURE REVIEW

There are several aspects highlighted which impact on these issues including the organisational (skill mix, workload) and professional (culture, values) factors identified above (Maben, Latter and Macleod Clark, 2006). These issues are exacerbated by the staff within these environments who can have a positive or negative impact on the ward culture and on junior staff and their resulting practices. The culture within the environment has a role in improving patient safety and can be the key to reducing errors and improving the patient's care and experience within the NHS. However, it is evident that this ability to change the culture is not easy. Changes in culture require an organisational approach and the resulting practices are dependent on the decision-making ability of the practitioners, their role models and leaders, their education and training as well as their ability to challenge poor practices and develop the junior staff within the departments.

The research highlights many factors which effect medication errors including high workloads, skill mix, interruptions, and failures to follow policy as well as cultural issues. However, this is not the full picture. Medication administration and resulting incidents remain a problem within the NHS. These incidents are said to be affected by the knowledge, behaviours and actions of the staff and the acts they may take. They are also affected by organisational issues and the complex environments. However, despite attempts to reduce these risks, it continues to be problematic for staff and patients. With reports highlighting large numbers of incidents relating to medication (1st October 2014 and 31st March 2015 - 67,727 medication incidents NRLS, 2015), the evidence suggests that medication incidents are a multifaceted problem with many different aspects which can result in increased risks for patients (Maben, Latter and Macleod Clark, 2006, Tang et al, 2007, Bennett et al, 2010, Hesselgreaves et al, 2011, Craig, Clanton and Demeter, 2014). This would suggest that this remains a significant problem for staff and health care organisations and therefore, must improve and learn from incidents is essential.

There is also the question to ask, that if we know what causes the problems why do the attempts to improve the situation continue to fail? This would suggest that there could potentially be elements yet unexplored. The evidence suggests that

work needs to continue in the NHS to develop safety cultures and methods to ensure the reduction of medication errors and enhance best practice implementation to improve patient safety. This work needs to identify how health care workers can ensure policy compliance and that staff are supported to develop skills and knowledge in medication administration, as well as strategies to deal with the complexities of practice. There have been many attempts to explore these issues and identify ways to influence this area of practice, however these have been inconclusive. This study has set out to explore this further to identify what factors may be impacting on medication administration and best practice and to assess what else can be done to reinforce earlier work.

This chapter has outlined two literature searches which explored practice and the factors effecting the implementation of best practice, one generic and one relating to medication administration. Both searches identified similar findings with staff who demonstrate positive values but who experience many factors affecting the way they practice. This includes aspects such as a lack of time, staffing, skill-mix deficits, interruptions, fatigue, stress and burnout. The findings indicate that these factors can affect the practices of the nurses including policy non-compliance and work practices which may lead to cultural practices and increase the risk to patient safety. All the researchers recognised that there were differences in practice and theory. However, there was an overwhelming agreement that further research was required to explore these issues in more depth with the aim of enhancing patient safety and staff development as a gap in knowledge remains. Although the findings from both reviews were similar the researcher was keen to identify whether this was the case in her own setting and whether there are any other aspects affecting this topic which so far may not have been identified. Therefore, it was important to look at whether this was a problem and if so, why? The research questions were developed to answer these questions based on the reviews completed as outlined in Figure 6 p74. These are discussed further in Chapter 4.

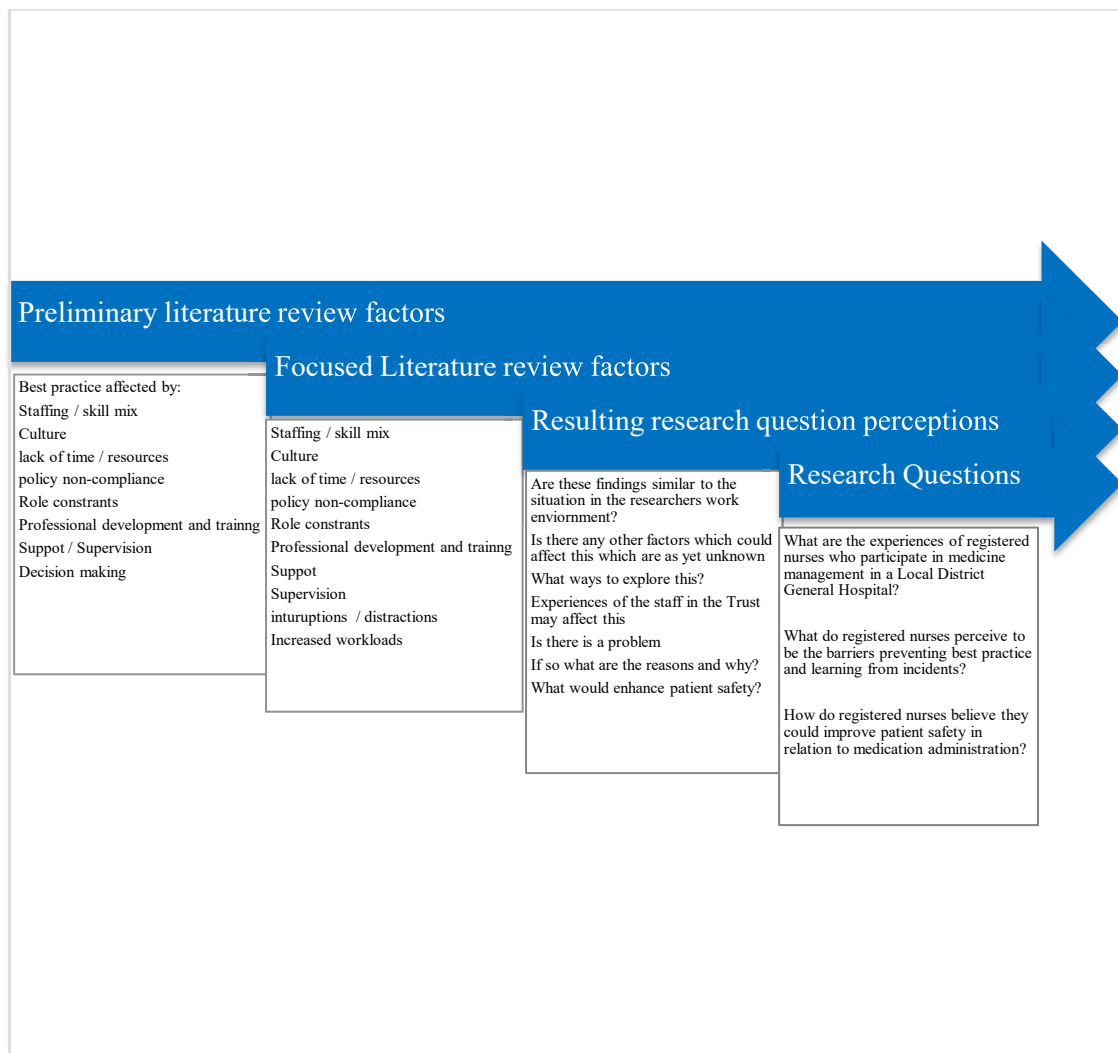


FIGURE 6: LITERATURE REVIEW FINDINGS LINKED TO RESEARCH QUESTION

Chapter 3: Theoretical and Methodological Perspectives

The theoretical perspectives are important when developing a research study as it refers to the way researchers can identify how they have positioned their research, and how it fits in relation to the research theory. This allows a framework for the researcher to consider not only the methods but also their own assumptions, their position in the research and the overriding link between their study and the chosen research design. Cresswell (2009) points out that researchers usually identify the type of research undertaken by their beliefs, their area of discipline, and the beliefs of advisers as well as the researcher's past experiences in research. However, it is also important to ensure that the chosen method can answer the research questions.

This research aims to explore whether there is a failure to implement best practice into clinical practice and why this may continue using medication administration as a focus. The reason for the choice of subject was through the literature searches and local evidence which suggested that policies, guidelines and knowledge from learning and evidence were not always implemented consistently despite the staff undergoing training and understanding the requirements and standards. As an educator, the researcher was keen to explore these issues in more depth to ensure safe effective practice for all patients and develop an understanding of why this continues despite evidence available to enhance practice. This chapter will identify the theoretical perspectives and methodology chosen by the researcher and why this was the chosen method. This will include the research assumptions and a review of Grounded Theory and how this is being implemented in this study but first it needs to identify the research aims and question.

3.1. Aims of the research

Research Aim: To explore the experiences of registered nurses who participate in medication management within a Local District General NHS hospital and identify the factors which can affect the implementation of 'best practice' into clinical practice.

3.2. Research questions

- What are the experiences of registered nurses who participate in medicine management in a Local District General Hospital?
- What do registered nurses perceive to be the barriers preventing best practice and learning from incidents?
- How do registered nurses believe they could improve patient safety in relation to medication administration?

Once these questions have been developed it is important to identify the most efficient methodological approach to answer these.

3.3. Research assumptions

Understanding research approaches and assumptions are essential for researchers to ensure the methodology and methods chosen can answer the questions effectively. Lobiondo-Wood and Haber (2002) argue that all research approaches have different languages and assumptions adding that all research is based on a worldview or paradigm. A paradigm is defined by Polit and Beck (2018) as “a worldview, a general perspective on the world’s complexities” (P.6). Polit and Hungler (1999) suggest that there are four ways that people respond to basic philosophical questions in research, which include:

- Ontologic – what the nature of reality is
- Epistemology – how the researcher is related to those being researched
- Axiology – The role of the values or ethics in the research
- Methodologic – how the knowledge is obtained.

These are associated with two approaches, the positivism paradigm which mainly links to the traditional research approach (Quantitative) or the naturalistic paradigm which links to qualitative research (Polit and Beck (2018 p. 6). The key concepts are defined in table 9 (p77) which provides a comparison of the major assumptions for each of these approaches.

The major assumption which fits with the researcher’s worldwide view is the naturalistic approach. Research conducted within the naturalistic paradigm is mostly undertaken using a qualitative approach to research.

TABLE 9: MAJOR ASSUMPTIONS

Assumption	Positivist paradigm	Naturalistic Paradigm
Ontological	Reality exists	Multiple realities which are subjective and created by individuals
Epistemological	Inquirer independent from sample subjects	Inquirer interacts with sample subjects
Axiological	Objectivity is needed	Subjectivity and values are inevitable
Methodological	Deductive process	Inductive process
Adapted from Polit and Hungler 1999 (P.11) and Polit & Beck 2018 P.7)		

Strauss and Corbin (1998) point out that the qualitative approach is research which is concerned with people's lives, lived experiences, behaviours and feelings taken from the researchers' environments. Mason (2002) agree, adding that the qualitative approach has the potential to provide "very well founded cross-contextual generalities" (p.1) despite the criticism of qualitative research.

Qualitative research is often criticised as lacking the scientific rigour and credibility which is accredited to traditional quantitative research. However, qualitative research has been used successfully and can provide a rich source of knowledge, promote insight and awareness of human experience and influence change (Vishnevsky and Beanlands 2004; Welford, Murphy and Dymrna 2011). Moule and Goodman (2014) agree adding that although qualitative research is seen lower down the 'hierarchy of evidence' in comparison to the random controlled trials, it is accepted as a valuable addition to the body of research methods adding value to the available evidence and best practice. For this study, the use of the qualitative approach, which gives rich data identified by the participants in the researchers' environment, was essential, because it explored their perspective and their understanding of their own reality.

The link to the researcher's reality links closely with the first major assumption, the ontological approach to qualitative research which, Polit and Hungler (1999), suggests is that 'reality exists'. Koshy (2010 P. 23) agrees and describes ontological issues as 'social reality' which is the assumption made in relation to the reality which is socially constructed. Blaikie (2007) argues that the social sciences is concerned with 'answering the question, what is the nature of social

reality?’ Answering the question is pivotal to this research as the researcher wanted to identify and explore, what the individual reality is, in relation to practice and the factors affecting the practice. This fits well with the constructivist approach to research. Blaikie (2007) suggests that constructivism is a process of people making sense of their world not only by themselves but in conjunction with others. This view is supported by Creswell (2009) who argues that constructivist researchers believe that people develop subjective meanings of their experiences which are diverse. Blaikie (2007) expands this to incorporate two strands of constructivism. The first, radical constructivism, he suggests is to do with the ‘meaning giving of the individual mind’, (P22), and the second, as social constructivism, which he suggests is a ‘collective generation and transmission of meaning’ (Blaikie, 2007 p.22). This was like the process adopted by Charmaz (2006) who argued that her approach was to use Grounded Theory as a method to explore social actions which researchers can use to construct theory in partnership with others. Charmaz (2006) adds that this is based on the interpretive stance of research and therefore sees both data collection and analysis as being developed from the researcher’s relationship and interaction with participants.

The appeal of this approach to this researcher was that constructivism is said to develop understanding, with multiple participant meanings and theory generation (Creswell, 2009). This approach is important in relation to this study as the aim was to understand the experiences and perspectives of the subject of medication errors and why we do not implement best practice in this area into clinical practice. This is based on shared understandings and practices. However, it is important to understand that this ‘social reality’ will differ from department to department and between individuals (Mason, 2002, p.14). It is also important for the researcher to recognise that it will also differ from her own ‘social reality’ and therefore needs to be considered.

Understanding the reality and how they are formed is essential if there is to be a sustained change. Cormack (1996), points out the social context is built through interactions and communications. This was highlighted earlier by Berger and Luckmann (1966) who suggested that our reality is formed from our interactions and experiences which start as a child and continues to develop an individual

understanding of reality as individuals interact with others and experience new situations. This links closely with the second and third major assumptions 'Epistemology' and 'axiology'. According to Cormack (1996), epistemology is the knowledge of reality and what we know about our reality while axiology is concerned with ethics and the potential bias and values. Blaikie (2007) defines epistemology as a theory of how people develop 'knowledge of the world around us and how we know what we know' (P.18). In the setting, where the research was conducted, it was important to understand that the researcher's reality was different to the other staff due to their roles, knowledge, values and experiences. Therefore, when implementing the research, it was important to recognise these differences with the aim of reducing the potential bias which will be discussed later in chapter 5. The last major assumption which needs to be considered is the Methodological approach

The methodologic assumption is concerned with the knowledge generated from the research. The methodologic assumption is defined by Polit and Hungler (1999 P. 11) as 'how knowledge is obtained'. They describe two types of processes 'deductive' from the positivist paradigm and 'inductive' which links to the naturalistic and qualitative research. This was also supported by Blaikie (2007) who added two more processes including abductive, which aims to discover the individual's construction of their reality and how the people give meaning to their social world, and retroduction, which seeks to discover structures and mechanisms of observable phenomenon, develop a hypothetical model and seeks to prove or disprove it. Initially, it was thought that as a qualitative study induction would be the best process for this research. Blaikie (2007) suggests that the inductive research develops from the data collection to generalisations with the aim being to identify the patterns of relationships, or patterns.

Welford, Murphy and Dymrna (2011, p.29) agree, explaining that qualitative research is generally an inductive approach. They define Induction, as being 'directed towards bringing knowledge into view' but, they explain that it is generally 'descriptive, naming phenomena and positioning relationships'. This view is supported by Williamson, Jenkinson and Proctor-Childs (2010 P. 134) who adds that the inductive approach is where theories emerge from real life situations

with an emphasis on subjectivity, understanding and explanation, depth and prolonged engagement. This was also discussed earlier by Polit and Hungler (1999) who suggested that inductive approaches are interpretive, grounded in the participants' experiences, flexible and context bound, based on qualitative research. However, induction is not sufficient on its own to develop theory. McGhee, Marland and Atkinson (2007) agreed, and suggest that the theory from Grounded Theory is developed through an inductive – deductive interplay. They suggest that although initial ideas are inductively developed from the data into mini-theories, they need to be confirmed and refuted using constant comparison and theoretical sampling which leads to deductive reasoning. They suggest that it is the inductive – deductive interplay which helps the theory to develop. However, according to Charmaz (2006), it is abduction which may be more likely to lead to theory development in Grounded Theory. Abduction in qualitative research is said to:

“move from the everyday concepts underpinning the interaction of individuals and the accounts provided by those interactions to social scientific descriptions, which either generate social theories or are understood through existing social theories” (Gilbert 2006 p.207)”.

Blaikie (2007) suggests that although induction can answer questions, abduction can go further and produces understanding for the researcher by providing reasons for the phenomenon. Blaikie (2007) adds that this strategy can enable the construction of theory derived from the participants' meanings, motives, beliefs and interpretations of their everyday lives which induction and deduction often ignore. Blaikie (2010) identifies several levels of the abductive strategy including:

1. To discover how participants, view their world by discovering the concepts used to represent their world and the meanings given to them
2. To generate technical concepts from these lay concepts
3. Developing an understanding with others to refine the concepts with others in the same or contrasting situations leading to refinement.

This supports the premise of Grounded Theory, which aims to develop theories from the experiences of the participants. By collecting data, using reflection and analysis of accounts of the individuals' experiences data can be identified and, through reflexivity, cycles of change can be understood and generate new theory. Charmaz (2006) agrees, claiming that the reasoning used within Grounded Theory

is abduction because the researcher is looking at experiences, making theoretical links and inferences and then rechecking by comparing to further data and experiences. However, it is important for the researcher to identify how this links to the theoretical assumptions discussed earlier. Table 10 (p81) demonstrates the theoretical assumptions (Ontologic, Epistemologic, Axiologic and methodologic) and how these relate and impacted on this study.

TABLE 10: THEORETICAL ASSUMPTIONS

Assumption	Effect on Researchers Study
Ontologic	Realities of staff may be different depending on their past experiences, new roles, organisation and local cultures. This includes personal and professional values and beliefs. There may also be some shared reality due to the shared profession and organisation of the researcher and participants
Epistemological	As a co-worker in the organisation, interaction is essential. Insider - outsider participation
Axiology	Interpretation, bias and values of the researcher are inevitable due to the nature of the research. Reflexivity required throughout the research process to enable the researcher to be aware of these potential areas of bias.
Methodologic	The research will be abductive as identified by Charmaz (2006)
Outcome approaches	
Abduction	Researcher will collect data on the interaction of individuals and the accounts provided by those interactions to generate theories or understand them with existing theories
Adapted from Polit and Hungler (1999), Williamson, Jenkinson and Proctor-Childs (2010) and McNiff and Whitehead (2011)	

These research assumptions, help the researcher to identify which methodology is appropriate to answer their research question. Three options were initially considered including phenomenology, ethnography and Grounded Theory. The first, 'phenomenology', is a research approach which aims to explore the lived experiences of participants and generally involves studying small numbers of participants through prolonged engagement (Creswell, 2009). Although this can be interpretive in design, Flood (2010), argues its aim is to focus on revealing meaning rather than developing theory. In undertaking this research, it was expected that the chosen methodology would aim to form a theory to help explain, why, despite a wide-ranging evidence base, failure to implement learning remains a problem, therefore, phenomenology was discounted.

The second methodology discounted was ethnography. Ethnography is an approach where the researcher studies a cultural group in their own setting (Creswell 2009). Moule and Goodman (2014) add that this approach describes and interprets how participants' behaviours are affected by their experiences. In this form of research, the researcher enters the field and becomes immersed in the data allowing the researcher to gather an insider's perspective and to collect data so that detailed data about the people and culture can be provided (Moule and Goodman, 2014). As this can lead to rich data and theory it was initially considered as a method the researcher could employ, but on further review, it was again discounted. One key consideration when discounting this was that the researcher must immerse themselves within the group. Goulding, (2005) points out that this immersion is a time-consuming process and involves the researcher spending considerable time within the setting. In this research, the participants were located in different departments and on different shifts and to spend the extended time in these areas was considered to be unachievable in light of the researcher's main role and time commitments, therefore this was discounted.

On reviewing, all the qualitative methodologies Grounded Theory was chosen as the most appropriate methodology for this research. According to Creswell (2009), Grounded Theory is a process whereby the researcher derives an abstract theory, grounded from the data in relation to the experiences of the participants. McCann and Clark (2003) argue that the epistemological approach of Grounded Theory is based in symbolic interactionism which explores the interactions between people's social roles and behaviours. In this study, the researcher was interested in why, despite the wide range of literature exploring the implementation of best practice, this was not always implemented. Therefore, Grounded Theory was identified as the method best suited to answering the research questions and developing a theory from the data.

3.4. Grounded Theory

The research presented in this thesis will be underpinned by Grounded Theory. Grounded Theory is concerned with exploring and trying to explain social experiences in society from the perspective of those who have experienced these situations. In this case, the nurse's experience, implementing evidence into

practice, knowledge of medication administration and the factors affecting patient safety. To do this there are various methods involved to allow the theory to evolve from the data including the sampling strategy, participant recruitment, data collection and data analysis, all of which will be discussed in this chapter.

Polit and Beck (2018), argue that Grounded Theory ‘tries to account for people’s actions from the perspective of those involved’ (p.189). Grounded Theory researchers aim to identify a problem and then the actions needed to address it by discovering the area of concern and the ‘basic social processes’ to resolve it, by generating theory from the data (Polit and Beck, 2018, p.198). Developed by Glaser and Strauss in the 1960’s it is described as a ‘style of qualitative research’ where the theory develops from the emerging data (Bell, 2005). However, following the release of a book by Strauss and Corbin (1998), which aimed to make it easier for students using Grounded Theory by outlining the process, it became clear that the two researchers did not agree on the key concepts underpinning Grounded Theory research. This later account by Strauss and Corbin resulted in disagreements between the two original authors as Glaser (1992) argued that the method was too restrictive and would stifle researchers. Urquhart, Lehmann, and Myers, (2010) argued that the two approaches differed in two ways:

1. Four coding steps instead of the original three coding steps.
 - a. Glaser and Strauss's coding = open, selective and theoretical
 - b. Strauss and Corbin Coding = open, axial, selective and coding for the process.
2. That Strauss and Corbin’s method which, provided ready-made tools to assist with conceptualisation would ‘force’ the data down one path and would ignore the emergent nature of Grounded Theory.

Annells (1997) compared both approaches and summarised the key differences in the approaches used in relation to their research perspectives (see table 11 p84). This demonstrates that although similar in outlook initially, their world views were quite different. Their ontological and epistemological standpoints were clearly at odds with one another and resulted in a difference in the way it was perceived and presented.

TABLE 11: COMPARISON OF CLASSIC GROUNDED THEORY AND STRAUSS AND CORBIN

Research Approaches	Classic Grounded Theory	Strauss and Corbin's Grounded Theory
Ontological	Critical realist	Relativist
Epistemological	Modified objectivist	Subjectivist
Methodology	1 st step in research which leads to further research (experimental or survey)	Framework for action constructed and verified.
Annells (1997)		

However, it is important not only to understand these differences but to recognise that since then the Grounded Theory method has developed further. This was highlighted by Charmaz (2006) who explained how on reading Glaser and Strauss's description of the methodology, she took up their challenge for researchers to 'use Grounded Theory flexibly and in their own way (p.9). Charmaz (2006) suggests that the constructivist approach that she has taken allows the theory to emerge from the data and analysis to be created from shared experiences with the participants and other data adding that this lies within the interpretive approach. She further explains that the constructivist approach develops from the data created from the shared experiences and relationships of the researcher and participants where they can create their meanings and actions in situations which in this case would be medication administration. This was supported by Creswell (2009) who added that this type of worldview allows the researcher to develop understanding, multiple participant meanings, social and historical construction and theory generation. In preparing for this research these three qualitative approaches were considered including the classic, the adapted model by Strauss and the model by Charmaz. Charmaz (2006) argued that unlike Glaser and Strauss, her work assumes that

“Neither data nor theories are discovered. Rather we are part of the world we study and the data we collect. We construct our grounded theories through our past and present involvements and interactions with people, perspectives and research practices” (p.10).

Charmaz (2006) advocates using the principles of Grounded Theory in a flexible manner to advance the interpretive design to construct a theory which, resonated with the researchers own worldview, therefore the constructivist method as proposed by Charmaz was chosen as the most appropriate methodology to underpin this research. As discussed earlier, constructivism aims to develop

understanding, with multiple participant meanings and theory generation (Creswell, 2009). It explores the social situations and behaviours resulting from these and is useful to develop the theory in the area of practice. Furthermore, the process described by Charmaz was clearly defined and allows for the researcher to work within clear pathways without being restrained therefore this method was chosen to underpin the conduct of this research.

This chapter has outlined the theoretical and methodological decisions underpinning the research. The researcher assumptions are that multiple realities exist in the world and in this case, in clinical practice, the realities of the participants in this research were different depending on their past experiences, knowledge, values and the organisational and local cultures. As a co-worker with an insider – outsider relationship, interaction is essential and therefore the researcher's epistemological and ontological approaches are aligned to the qualitative paradigm. The researcher acknowledged that interpretation, bias and the values of the researcher impact on the research and therefore reflexivity was essential throughout. Exploring these issues and the alternative approaches available to conduct research, including Grounded Theory, phenomenology and ethnography, led the researcher to adopt the Constructivist Grounded Theory methodology outlined by Charmaz (2006) to underpin this research.

This chapter outlined the research aim and questions and the theoretical perspective underpinning these. This outlined the overarching paradigm (naturalistic/abductive/constructivist) and the methodology (Grounded Theory). It was then important to develop the research methods to ensure that these are consistent with the research theoretical perspectives and that the methods can answer the set questions. This is supported by Polit and Beck (2018 p. 8) who argue that researchers should progress through a systematic way from the identification of the problem to a solution. The problem was identified through the literature reviews and the knowledge of the researcher. Although the literature identified several reasons for the failure to implement best practice and the challenges of medication administration, the author wanted to identify whether this was similar in her own setting. However, the author also believed that this may not be the complete answer and that there may be some unknown influences which

could affect this. Therefore, following a review of the methodological approaches and methods for research the researcher decided to use the Grounded Theory approach with interviews to generate theory to assess whether this was a problem in the trust and why this failure in practice continues despite the evidence. The methods used to complete this research and the rationale for these decisions are discussed in chapter 4.

Chapter 4: Research Design

4.1. Introduction

The different methods of research available to researchers makes it imperative that researchers provide sufficient information to enable others to understand and critique the methods used. This helps to ensure sufficient information to allow replication and judge the credibility of the research. This clarity is important in Grounded Theory due to the opposing and conflicting approaches available to researchers as identified by Glaser and Strauss (1967), Strauss and Corbin (1998) and Charmaz (2006). Grounded Theory is concerned with exploring and trying to explain social experiences in society from the perspective of those who have experienced these situations. In this case, it is concerned with nurse's experience and knowledge of medication administration as well as the factors which might increase or decrease patient safety. There are several stages of the research process, some unique to Grounded Theory and others used in other approaches.

This chapter outlines the methods used in this research. It includes the participant's details, how they were recruited, the ethical principles employed to protect the participant's rights, the credibility of the researcher and research itself, as well as the methods employed to develop the tools used within the research. When conducting research, it is imperative that the researcher identifies their role and effect on the study. Therefore, this chapter will also discuss the researcher's role and reflexivity used throughout the research to minimise the researcher bias or influence which is inherent in qualitative research (Boswell and Cannon 2017 p.195). The final areas discussed within this chapter includes the data collection methods, data analysis and rationale for the decisions taken and why this method was chosen above others within this research.

4.2. Sampling Strategy

4.2.1. Sample

Participants were recruited from registered nurses involved with medication administration within the organisation. The research setting included all areas of the hospital where nurses routinely administered medications including, medical and surgical wards, accident and emergency and the intensive care unit. The

population included all registered nurses in these departments, who were then invited to participate in the research. This resulted in a self-selected sample purposive sample of nurses who administered medications on a regular basis chosen for their skills and knowledge. Purposive sampling is defined by Denscombe (2010) as a method where participants are ‘hand-picked’ with a relevance to the study to enable a rich data from the participants to emerge from their experiences and knowledge in the area being researched, which, in this case, was medication administration. Although the initial sample began as a purposive sample as the research progressed it became increasingly theoretical.

4.2.2. Theoretical Sampling

Theoretical sampling was essential in this Grounded Theory research because it enables the identification of specific data sources from participants identified as being able to provide the information, on their experiences in relation to the topic under investigation. It also allows the emergence of the resulting theory which ensures the researcher looks for participants who can provide specific information and then find others who can provide clarification and refinement of existing data. This allowed the researcher to explore emerging themes and seek further information to each evolving category, seeking further clarification from other participants to add to the theory. Theoretical sampling is defined as ‘a route of discovery based on the development of a theory’ grounded in the data (Denscombe 1998). Charmaz (2006) agrees suggesting that theoretical sampling is emergent, helping to expand and strengthen themes and then later to demonstrate links between the categories. The themes are developed further using constant comparison whereby the researcher compares each subsequent data with the previous data enabling them to develop the initial codes, exploring and refining these into categories and eventually into a theory (Charmaz, 2006). Charmaz (2006) adds that this allows researchers to predict where and how they can find the data needed to fill the gaps in their research and ultimately leads to data saturation. Yu Chen and Boore (2009) agree that saturation happens when a category is well developed, and no additional information is emerging. One issue which needs consideration is when the researcher recognises the stage at which data saturation is achieved or when each category has no further insights being developed.

This ability to respond to the resulting data and explore new emerging codes or categories is important in ensuring that the researcher can be flexible, adapt the interview questions and the study focus as the themes and theories emerge. This is supported by Glaser and Strauss (1967) who suggest that theoretical sampling is a method of data collection suitable for theory generation. Theory generation includes the need for the researcher to consider how and where the data are collected, coded and analysed. This ongoing exploration is important to identify the most appropriate data to find next and where that data will come from until data saturation is achieved. However, before this process can begin the participants must be recruited.

4.2.3. Sample Recruitment

For this study to be effective it was important to have a sample large enough to answer the questions. Therefore, it was important to be able to access many potential participants to enable a sufficient number to take part. To maximise the chances of recruitment and reduce the risk of bias a plan to ensure recruitment was effective but ensured participants' rights was developed. This included a poster, displayed within the clinical units for two weeks, a participant information sheet being distributed to potential participants and ensuring the participants freely gave informed consent. This involved three stages; advertising, informing the participants and gaining valid consent.

4.2.4. Student Recruitment

Stage 1: Advertising

Initially, the ward matrons were asked to contact the potential participants on the researcher's behalf. The ward managers were identified as 'gatekeepers,' which according to Creswell (2009) are the people who can facilitate access to the study participants. The ward managers and lead nurses were initially approached to request their support to display a poster for two weeks asking for volunteers and then to disseminate the email to appropriate staff two weeks later. The first aspect of recruitment was the development of a poster (see appendix 4 p.286) which asked for volunteers, for the study. The aim of using the poster was two-fold, firstly to provide information to staff but also to recruit staff. The key to poster design was

to keep it clear, simple, and concise (Taggart and Arsianian 2000). Therefore, the content was restricted to three issues, the research title, the contact details of the researcher and the researcher's supervisors, as well as key information on what they could expect if they volunteered. It is important that posters are easy to understand and quickly identify the point of the content to the reader to raise their interest.

When designing the poster, the researcher highlighted the following.

1. Are you a registered nurse?
2. Do you administer medications?
3. Would you be interested in improving patient safety?

The aim of this was to highlight to the interested parties, the main requirements of the sample. Firstly, that the researchers wanted to recruit registered nurses, secondly that they needed to be actively involved in medication administration and thirdly, that the study was aiming to identify strategies that might contribute to patient safety. Although it is assumed that all nurses are interested in patient safety, this question was included as it was felt that these three questions were likely to encourage nurses with these values to read the poster and consider participating in the research. Following research ethics and governance approvals, the poster was put up in all clinical areas in the organisation for two weeks. It was interesting to note that prior to the information being disseminated to the nurses, four nurses had already approached the researcher to discuss participation from the poster alone and all subsequently took part. Following the initial two-week period an email (Appendix 5 p.287) was sent to the ward manager to request their support with the next stage of recruitment which, required the ward managers to send out information to the potential participants. This was sent to the participants by email (Appendix 6 p.288) and included the participant information sheet (PIS) (Appendix 7 p.289).

Stage 2: Participant information Sheet

The PIS is an overview of the study which is given to participants to inform them of the study aims and their rights. The use of a PIS is accepted as good practice (Green and Thorogood, 2009, p.111). Sharing information in this way was important for two reasons, firstly it ensured the staff had a clear understanding of

the information including the rationale for the study as well as information on their rights, such as their ability to withdraw from the research at any time. Secondly, it allowed the information to be provided to a group, large enough to ensure sufficient numbers could be recruited. The email sent from the ward managers also asked any interested parties to contact the researcher for further details or to discuss the research. Providing written and verbal information helped to ensure that potential participants had all the information necessary to make an informed decision about participating in this research. From the initial review, eight participants were recruited in September 2013, four from the poster and four from the information circulated by the ward managers. The first interview was held in November 2013 and analysis started immediately as advocated in Grounded Theory research. Later at the end of 2014, when the eight interviews had been conducted and analysed using constant comparison it became clear to the researcher that data saturation had not been confirmed. Therefore, a further cycle of advertising and recruiting was undertaken, however, this time theoretical sampling was used to ensure that the participants would add to the research as advocated in Grounded Theory.

During the data analysis, it had become apparent that another perspective, that of the senior management, could add value to the research and therefore it was decided to seek participants from the Trusts lead nurses and ward managers as well as NQN's and band five nurses. Therefore, in January 2015 an amendment was sent to the ethics panel for ethical approval to recruit new participants including those in the senior nursing roles as well as newly qualified nurses. In February 2015 the senior matron was contacted to act as a gatekeeper and from this cycle, three further nurses and two matrons were recruited to the study resulting in 13 in total. Once the participants were identified consent was obtained. The staff recruited had a wide range of experience and were on a range of salary bands from band 5 (Newly Qualified / Staff Nurse), band 6 (Deputy Sister) band 7 (Ward Sister) and band 8 (Lead Nurse). All the participants who volunteered were female and aged between twenty-three and fifty-five years of age and worked within a range of clinical settings in a small District NHS Hospital Trust. The participants had a wide range of experience ranging from one to thirty years of experience.

Stage 3: Informed Consent

To ensure prospective participants could make an informed decision all potential participants were provided with the PIS providing information on the study including their rights. Informed consent is defined by Brinkmann and Kvale (2015) as ‘informing the participants about the overall purpose of the investigation and the key features of the design, as well as possible risks or benefits of the research to the participant’ (p.93). Brinkmann and Kvale (2015) add that this information should also include the participant’s rights to withdraw at any time. In this case, the information given included an introduction to the research with the study title, the name of the researcher and the purpose of the study.

One of the factors which can cause concern is being unaware of what happens to the results of the study and the resulting data collected, therefore, the right to withdraw at any time was highlighted in the PIS along with the risks. Further discussion on these aspects had been undertaken prior to the interview to ensure that participants were happy to proceed and understood these factors. At this point the right to withdraw was emphasised, however, all participants were also informed by the researcher that this would only be possible until the data had been analysed, otherwise, it would result in difficulties for the researcher in the final stages of the research and in the findings generated. Immediately before the interview commenced an informed consent form (Appendix 8 p.291) was signed by the participant and the researcher in line with ethical guidelines.

4.3. Data Collection

Clarity in data collection methods is important in helping to ensure the credibility of the research and demonstrate it fits with the research methodology. McNiff and Whitehead (2006) suggest that data collection includes both the data from the actions of the participants as well as the data from the researcher. Therefore, within this Grounded Theory study, data was collected through semi-structured interviews and vignettes which were subjected to the constant comparison method of data analysis and led to theoretical sampling, which enabled the researcher to identify rich data from the experiences of participants. Charmaz (2006) suggested that this approach provides ‘thick’ descriptions which are detailed, focused and full. Interviews are accepted as a valuable method of data collection to gather rich

data from participants about their experiences of the topic being researched. Mason (2002) supports the use of interviews but argues that researchers should not assume they have to use interviews as there are many ways that qualitative data can be collected. However, he adds that researchers should have a sound rationale of why interviews will be the best means of collecting data to meet the aims of their research.

At the start of this research focus groups were initially considered as a method of data collection because they can generate extremely rich data, but, this approach was discounted because of the practical difficulties in releasing clinical nursing staff from multiple departments in large enough numbers for the focus groups to be meaningful. In addition, it can sometimes be difficult for participants to be as open with sensitive subjects such as medication errors and according to Robson (2002), it can difficult to ensure confidentiality. The researcher also considered observation which also can provide rich data and with the addition of interviews can expand and enhance the data received however this was also discounted. The reasons for this were twofold. The first reason was due to the time commitment needed which for the researcher was unachievable. The second reason was due to the fact of the need for the researcher to be an independent researcher rather than a member of hospital management.

As an educator within the trust it was paramount that this research role was seen as separate and the researcher wasn't seen as a senior team member to minimise bias and encourage ease of communication. This need to be sensitive to the participants' needs, and ethically aware was discussed by Mansour (2011) who argued that studying medication administration in research opens many ethical challenges including how to approach the participant's but also how we can promote a sense of safety, so they can be open, and provide their accounts and experiences. Although staff were aware of the researcher's role in the organisation, an attempt was made to ensure that the research was conducted as a unique experience away from the role of educator and not as part of the researcher's everyday role which would increase the researcher's potential for bias and the participant's reticence if they felt they were being assessed. Therefore, this was discounted in favour of interviews which were carried out in quiet areas away from

the wards. The researcher did not wear her uniform to try to minimise the potential bias further.

The aim to minimise researcher bias was important throughout the process and therefore other methods of data collection were included, with the interviews including field notes and theoretical memos. One of the keys to obtaining the data is openness which is about being sensitive to the data and how this data is used within the analysis stages (Engward, 2013). Boychuck and Morgan (2004) argues that it is important for researchers to develop a 'symbiotic relationship' between the data and the theorising'. This relationship between the data and the analysis developed continually by collecting data, analysing the data and collecting more data to analyse, developing a theory throughout the process. Mason (2002) adds that when a researcher uses interviews their ontological position may be suggesting that 'people's views, understanding, interpretations and experiences are meaningful properties of the social reality' (Mason, 2002, p.63). In this research the nurse's views and experiences are essential if the research is to identify the potential benefits and problems of implementing best practice in medication administration and potential ways through which this might be improved, thus improving patient safety.

The use of interviews supports the earlier work of Benner (1984) which highlighted that expertise in practice develops when practitioners use their practice experiences to test, refine and develop alternative ideas using past experiences to assess the situations and solve problems efficiently. Burnard (2005) describes a semi-structured interview as a process where the researcher uses a set of broad key areas or a key set of questions but will add other questions in depending on the respondent's answers. The value of the interviews comes from the rich data that can be generated. Ellis (2013 p.51) suggests that there is a richness and spontaneity in the information collected during interviews as well as standardisation of the data. In this research, the interview schedule (Appendix 9 p.293) was developed using broad categories on medication administration and vignettes derived from the literature and incidents from both local and national sources.

It was also important that the vignettes enhanced the interview and data collection process and were based on the research questions. This included the participant's experience of medication administration, their learning and opportunities for development as well as their experiences and perception of the processes and patient safety issues within the topic such as policy compliance, incident reporting and challenge. This approach of including vignettes into interviews is supported by Hughes and Huby (2002) who suggest that although written vignettes could be less effective than other methods they do allow a good focus for discussion on both realistic and unrealistic examples, as well as being able to identify the subtleties and nuances of the participant's worldviews. These vignettes were developed from several examples of situations based within medication incidents which allowed participants to discuss not only their knowledge of process and guidelines but their perception and understanding of patient safety issues, medication administration and the factors which prevented best practice. Used in conjunction with the interview schedule it allowed rich data to be generated. However, to ensure this was the case the way the interview schedule and vignettes were developed was important to consider.

4.3.1. Interview Schedule Development

The interview schedule was developed following a thorough and critical review of the literature on medication administration, including the good practices and errors that can arise. The questions included broad areas of interest developed from the literature. These areas of interest included the nurse's experience of medication administration, training undertaken, patient safety, policies and medication errors. This was important to ensure that the questions would be based in practice and would be understandable to participants. Wengraf (2001) supports this approach, adding that qualitative interviews should help with the construction of a theory of some aspect of reality in practice, and test the constructed theory to see whether it is confirmed or refuted by the emerging data. However, Wimpenny and Gass (2000) point out that this can involve multiple realities so needs to be reviewed in the context of the researcher's purpose and the focus of the study. They add that the informal interview is the optimal way to conduct Grounded Theory interviews as it secures the 'personal and private thoughts of participants' (p.1487). This is

supported by Green and Thorogood (2009) who suggests that these interviews are conversations which just occur, and that more often semi-structured interviews are used where the researcher sets the agenda but lets the participants ‘determine the kinds of information produced’ and ‘the relative importance of them’ (p.121). This makes it essential that the questions are developed to answer the correct questions.

When developing the questions, it is important that these are open in nature using terms such as ‘how’ and ‘why’ rather than closed questions. This helps to ensure that the data originates and develops from the participant’s experiences and can be explored in depth to ensure sufficient data is obtained from the interviews. Green and Thorogood (2009) point out that this approach can help participants to share their knowledge and experience with the researcher who can use the following techniques to improve the richness of the data being collected:

- silences
- prompts or probes
- resisting interrupting
- avoiding leading questions

As the development of questionnaires may limit the opportunity for spontaneous discussion the researcher aimed to keep the questions broad. The researcher was also aware of the importance of allowing the questions to branch off into areas to identify new areas for discussion and exploration. Therefore, the resulting questions were used as a guide rather than a distinct list of questions. Following the development of the broad questions by the researcher, the questions were reviewed by the Lead Nurse for Practice Development (PD), who is involved in training for medication administration, and the management of errors. The comments received allowed the researcher to review the questions to ensure they would be clear for the interviewee and would collect the data expected. However, it was important to recognise that these questions would change as the theory developed and more data was obtained. As well as the interviews schedule, the Lead Nurse (PD) and the Lead nurses and Ward Managers also reviewed the vignettes to ensure these were appropriate for the research. Following the development of these questions, they were also reviewed by the research supervisors.

4.3.2. Vignette development

Vignettes are short stories or scenarios which highlight important points from the area under discussion. The use of vignettes allows participants to explore a situation from practice which enables them to discuss their perceptions and beliefs in a non-threatening way (Hughes, 1998) and has been used successfully in research previously. This was also highlighted by Gould (1996) who argued that although there are problems with vignettes, for example in ascertaining their reliability and validity, they can help to manipulate a number of variables which would not be possible in observer studies which have inherent ethical challenges. Gould (1996) added that these have become a valuable tool in studies where controversial areas of practice such as medication administration and errors are being reviewed but the researcher must consider the content of these. In this case, the vignettes (in addition to the questions) were developed to enable the nurses to explore some common incidents which occurred both within the trust and from reports identified within the NPSA reports linked to the research question. For example, the literature review indicated that there was policy non-compliance with ID checking of patients, a lack of challenge and a lack of incident reporting. Therefore, the vignettes were developed to explore the views and experiences of these topics with the participants. The vignettes were initially developed following a review of the literature and incident data both within the organisation and on the National Patient Safety Agency (NPSA) website (NPSA, 2013). Although the NPSA transferred to the NHS Commissioning Board Special Health Authority in 2012 the data are still available through the web address which can be found in the references section.

Four vignettes (see appendix 10, p.294) were developed, all of which were reviewed with lead nurses and ward managers for accuracy and relevance to clinical practice. Moule and Goodman (2014) define this as content validity which they suggest is the ability of the tool or in this case, the vignettes to be able to collect the data needed for the area of study. Moule and Goodman (2014) also defined face validity as being concerned with whether the tool measures what it is meant to measure. One accepted method of checking the face validity is by using experts in their field (Moule and Goodman, 2014). In this case the use of the Lead

Nurses and Ward Matrons who were asked to review the vignettes for accuracy and relevance to clinical practice. Following a review of the comments, minor amendments were made to the vignettes. A summary of the vignettes can be seen in table 12 (p98)

TABLE 12: VIGNETTE THEMES

Vignette No:	Vignette themes	Main themes for discussion	Links to research question
1	Two nurses to administer IV medications with a: Poorly written prescription chart Failure to react to challenge by junior nurse Medication administered without identifying patients ID.	Participants to review the vignette then: Discuss the practice of the practitioners Identify demonstration of good practice	Nurses experience Patient safety Administration Risk and incident management Best practice
2	Patient requests nurse to leave tablets on the table for her. Newly qualified nurse was on the ward for a month Newly qualified nurse asked to supervise patient with meds On 2 occasions patient asks nurse to leave tablets for later	Identify possible risks in this situation Discuss the practice in the context of patient safety, and policy for drug administration Discuss the value of the NMC Code in this context	
3	10.00 pm drug around. Staff nurse on night duty finds the 6.00pm Paracetamol has not been given	Identify potential outcomes from this story and why you come to this conclusion	
4	10.00 pm drug round Staff nurse continues same drug round and finds that IV antibiotics have not been administered to a patient with an acute infection and unwell. Scenario 3 and 4 discussed to identify differences and actions	Discuss the actions of 'the average nurse' in this situation	

During the interviews, initial broad questions were asked before the vignettes to allow the participant to discuss their experiences and views in the subject. Then the vignettes were used to enhance the discussion rather than lead the discussion, From the questions and vignettes the researcher was able to branch off and explore the resulting themes and to discuss in more depth any information which was interesting, therefore in some cases, only two or three scenarios were explored depending on the direction of the discussion. This was in part because the participant had already mentioned the theme of the vignette prior to it coming up and in the case of the managers interviews had a differing approach. This was

important because within the Grounded Theory interviews do not remain fixed but change as the data emerges to enable the researcher to move towards theoretical saturation. This means that later participants may not have all the same questions, or they may differ in focus. In this case the different approach was mainly in relation to the interviews with the managers. The initial concepts and categories were identified from the participant's data via the constant comparison method of data analysis. At this point a summary was provided of the vignettes and possible responses but the lead nurses were not asked the vignette questions in the same way as earlier participants. This approach allowed the researcher to explore specific areas such as the potential reasons for policy non-compliance which had arisen from the data analysis as an area of interest which is also recognised as an important part of the Grounded Theory development method.

During this process of interviews, it was essential for the researcher to reflect and use reflexivity to ensure that she did not allow her own views to guide the interviews but allow the emerging themes which developed through the constant comparison method of data analysis. Therefore, memos and notes were taken throughout the data collection and analysis stage and these formed part of the data analysis method as advocated in the Grounded Theory methods (Charmaz, 2006). The researcher reflected on the way the interviews were undertaken and the resulting responses. The reflexivity and data analysis process continued throughout the study and is discussed in more depth below (see page 117).

The interview started with some general open-ended questions on the participants experience on medication administration and in their training. This allowed the participant time to reflect on their experience and help them to look specifically at their own knowledge. The vignettes were then introduced to review some specific practice issues, and these were then concluded with some more specific aspects including patient safety. However, it is important to recognise that the interview schedule was more of a broad topic list rather than direct questions. The use of this list is recognised as a good method of interviewing in Grounded Theory as a guide to enable the researcher to follow the views of the participants and diverging as needed to follow the leads (Wimpenny and Gass, 2000). It therefore allowed the

researcher to move from concepts based on the views and experience of the participant rather than a pre-defined list of topics.

4.3.3. Undertaking Interviews

During interviews, it is important to ensure the safety and comfort of the participant. Therefore, the interviews were undertaken in a quiet room with no phone in the room to prevent interruptions and to ensure confidentiality and privacy. All interviews were recorded and transcribed by the researcher to allow the researcher to constantly review and analyse the data. This ability to record interviews was important because it helped to ensure that a full transcript of the interview was available for analysis. It also helps researchers to become immersed in the data, continually review and reflect upon the data and resulting themes enabling them to return to check new ideas as well as to reflect not only on the interview but also on their interviewing skills which includes techniques such as active listening and the use of appropriate pauses (Denscombe, 1998, Charmaz, 2006). When considering the interview schedule, it is important to remember that in Grounded Theory the questions do not remain fixed but change as the data emerges to enable the researcher to move towards theoretical saturation and the theoretical sensitivity whereby researchers use the literature to enhance theoretical understanding (Mills et al, 2007). Therefore, it was important that the researcher reflected on these issues before, during and after the interview.

One aspect of the reflection was taken during the transcription, which although time-consuming has significant benefits to the researcher. The first benefit to the researcher is the ability to immerse themselves in the data and become familiar with the codes and themes. Therefore, the researcher transcribed the data herself enabling the deeper understanding of the content and reflection to occur both on the data and the interview itself.

4.4. Literature review

One of the key considerations for researchers undertaking Grounded Theory is whether to do an initial literature review prior to the actual study. Both Glaser and Strauss (1967) and Corbin and Strass (1990) suggest that the literature review

should ideally be left until after the analysis. Denscombe (1988) agreed, adding that the researcher should normally start out with an open mind and no set ideas on their findings. According to Charmaz (2006), the delay in the literature review is so that it will prevent the researcher from looking at the data based on the literature or as identified by Charmaz the 'received theory'. Urquhart (2013) supports the premise of not reviewing the literature early as she reports it is often difficult for students to avoid using the data in their research. Urquhart (2013) suggests that for researchers to stay true to the data they must allow the evidence to emerge. However, as in this case where the research was being conducted as part of the Professional Doctorate, this can be a problem for two reasons. Firstly, for doctoral students, the literature review is a key part of the student's requirements for their study and ethics approval.

It is also important during the doctoral study that students identify the gap in knowledge on which to base their studies. This dilemma for the doctoral student engaged with Grounded Theory was explored by McGhee, Marland and Atkinson (2007). They argued that the stance of leaving the literature review was based on the time when Grounded Theory was based on post-positivism and that this has evolved through to encompass other designs of Grounded Theory such as constructivism which did not preclude an initial literature review. The benefits of an early literature review are highlighted by Corbin and Strauss (2015) where they suggest that the early literature review can be a 'stimulus for the research', identifying topics for review, gaps in practice or areas which need clarification to help the researcher to identify their research question (P.33). However, McGhee, Marland and Atkinson (2007) suggest that although it is recognised that researchers have prior knowledge and experience and often undertake initial literature reviews it is essential they remain 'open minded'. The importance of remaining open minded is essential because the researcher needs to be able to recognise the intricacies which evolve, which in some cases may be very obscure or not initially recognised.

Therefore, it was imperative that the researcher lets the data be the driver through to the theory under development. This approach is supported by Charmaz (2009) who suggests that the way to ensure the researcher is not letting the literature lead

the theory development, is for researchers to leave the original literature findings alone until after the analysis and the development of the categories. This ability to leave the literature alone is important and supports Denscombe (1988) who pointed out that it does not mean researchers have a blank mind as the researcher will inevitably have some knowledge on the subject. Corbin and Strauss (2015) agree adding that the literature, as well as personal and professional knowledge, can be useful as it helps the researcher identify the areas for review from their experiences and knowledge as well as any gaps in the literature. Indeed, it is important to recognise that doctoral students must demonstrate originality in their work and therefore must be able to show where their work is unique and fits into the existing research. This can be seen in the case of the researcher, as an educator who aims to explore why the teaching was sometimes seen as ineffective despite nurses being able to articulate their knowledge and therefore supported a potential gap or missing answer.

However, it is also important that the previous knowledge and experience are acknowledged, and methods are taken to ensure that these do not add bias from the researcher and avoid the theory emerging from the primary data. Denscombe (1988) agrees, adding that even if researchers are informed about the subject they must be open to discovering new factors relevant to their area of interest. This need to be open is important in this area of research which aims to identify why despite numerous studies and initiatives to reduce medication errors they continue to occur. In this case, the researcher has prior knowledge of the subject from her previous and present experience as an educator and conducted a literature search to meet the doctoral studies requirements.

However as outlined above the prime reason for conducting the research was aimed at exploring whether there is an unknown element which could account for the failure to implement best practice. Exploring this unknown factor is essential because despite the evidence which demonstrates numerous methods to implement best practice and reduce medication errors, this continues to be problematic in practice. Since a literature review was conducted as part of the doctoral requirements it is essential the researcher considered this. In this case, there was a time distance between the literature review completion and the start of the

interviews which allowed the researcher to 'put aside' the literature review as advocated by Chamaz. In addition, the researcher used the participant's own words as a basis for the open codes and categories to try to minimise her own perceptions from influencing this.

One of the methods employed in this study to enhance this approach was the use of field notes which included reflective accounts following each interview to capture the initial thoughts and ideas arising from this data. In addition, the use of memos was utilised which can help to increase the credibility of the interview and themes which arise (Tucket, 2005). It is important to recognise that this data is an important part of the study and can help to expand and redefine the categories and theories in its own right. Memos are a recognised part of Grounded Theory analysis and allow the researcher to identify areas which concern or excite them in terms of their own developing theory. Engward (2013 p.39) argues that these can "organise thinking about how the data fits together as well as identifying patterns and codes within this data". Memos were written at two distinct times. Firstly, during the interview brief notes were recorded which included aspects such as initial thoughts and relevant body language or when something jumped out to the researcher as something important or interesting. At the end of the interviews, brief memos were written to identify areas to develop initial codes and ideas which the researcher wanted to follow. Secondly, memos were added during this data analysis as ideas and thoughts were generated from the research.

These notes and memos proved to be a useful aspect of the study as it enabled the researcher to begin this data analysis from the beginning of the data collection process. The initial field notes contained simple notes including areas of the research which needed to be explored including sampling, reflections of the researchers interviewing techniques and any specific issues encountered, for example, if the interview had been interrupted or any aspects of the interview which immediately raised the reader's interest and helped define the categories (Charmaz 2006 p.22). One example of this process from field notes to simple open coding to a category can be seen by the example of the concept of 'trusting'.

One participant Bess explained that when the wards were busy they were more likely to trust each other than at other times. This was highlighted as an idea in the field notes as it was interesting to the researcher. The interview transcript included the following raw data:

“When the ward is busy we tend, to trust each other more than we would do if we are not so busy”, “it’s a weird form of respect” (Bess)

From these initial thoughts, an open memo was written which stated:

P1: Memo 3: Raw data - trust each other especially when busy,

Ideas: What does this mean?
Respect for each other
Acting and expecting to act
Risks
How do they choose who to trust?

From this, the open code of ‘trust’ was identified. Following the next interview, this was followed up. The next participant added the term ‘over-trust’. This was then added to the file notes and a further memo was undertaken. As this evolved the concept developed and further notes were completed.

P2: Memo 3b: Raw data - trusting each other especially when busy,

Raw data - So you kind of trust in your colleagues There has to be some degree of trust otherwise you just wouldn’t get everything done

This is due to the fact they have worked together before, therefore the trust will build up.

Supports participant 1. That trust is there based on previous knowledge of their work. Not necessarily a long time needed e.g. scenario stated 6 weeks.

So how do we know them? What are the benefits of this trust? What do they expect them to do? What risks does this bring?

2. Raw Date - Other times we over-trust, over trust each other.

Suggests this trust may also be a risk? Safety? Coping mechanism?

What causes them to trust?

As analysis, continued diagrams were used to develop a wider understanding of the factors involved in trust, over trust and mistrust. Using diagrams is supported by Charmaz (2006) who refers to the process of diagrams as part of the analysis process. This enabled the researcher to continually review and analyse new thoughts and ideas which were adapted and changed as further interviews were conducted and memo's and analysis were in progress. This can be seen by the resulting diagrams in Appendix 11-12 (pp.296-297) which focus on the aspect of trust developed through this data analysis process.

4.5. Data analysis

Although there are several strategies to guide data analysis in Grounded Theory, in order to develop theory, it needs to include the coding and the use of constant comparison throughout. This data analysis was being undertaken using constant comparison. Constant comparison is a step by step approach adapted from the model of Charmaz (2006) which is based on principles found within the Glaser and Strauss original description of Grounded Theory. Constant comparison involves the continual comparison of each interview with earlier interviews. This involves the researcher comparing the first interview to the second, the first and second to the third and this continues throughout. However, it is not just comparison of the interviews, but all data generated during the research including the memos and field notes.

This method of analysis involves several stages where the raw data including the transcripts, field notes and memos are organised, prepared, with data transferred into codes or categories either by hand or computer to begin developing the theory. The emerging data was then used to generate the theory using the Grounded Theory approach (Bell, 2005) which should increase the credibility in the study results. In this case, all interviews were transcribed by hand to enable the researcher to become immersed in the resulting data increasing the researcher's knowledge of this data and the constant comparison discussed above. The codes and categories were documented by the researcher and reviewed continually as outlined in the framework for data analysis as advocated by Charmaz (2006 p.11). This framework demonstrates that the researcher is continually collecting data and returning to earlier data to ensure that any concepts originally considered

unimportant are not missed and that other codes initially thought to be important can be either enhanced or refuted (See Figure 7 p106). This constant comparison is important in theory generation as described by Urquhart, Lehmann and Myers (2010) who outlines that Grounded Theory is about generating theory and is dependent on the constant comparison of the data from initial codes through to the relationships between the categories.

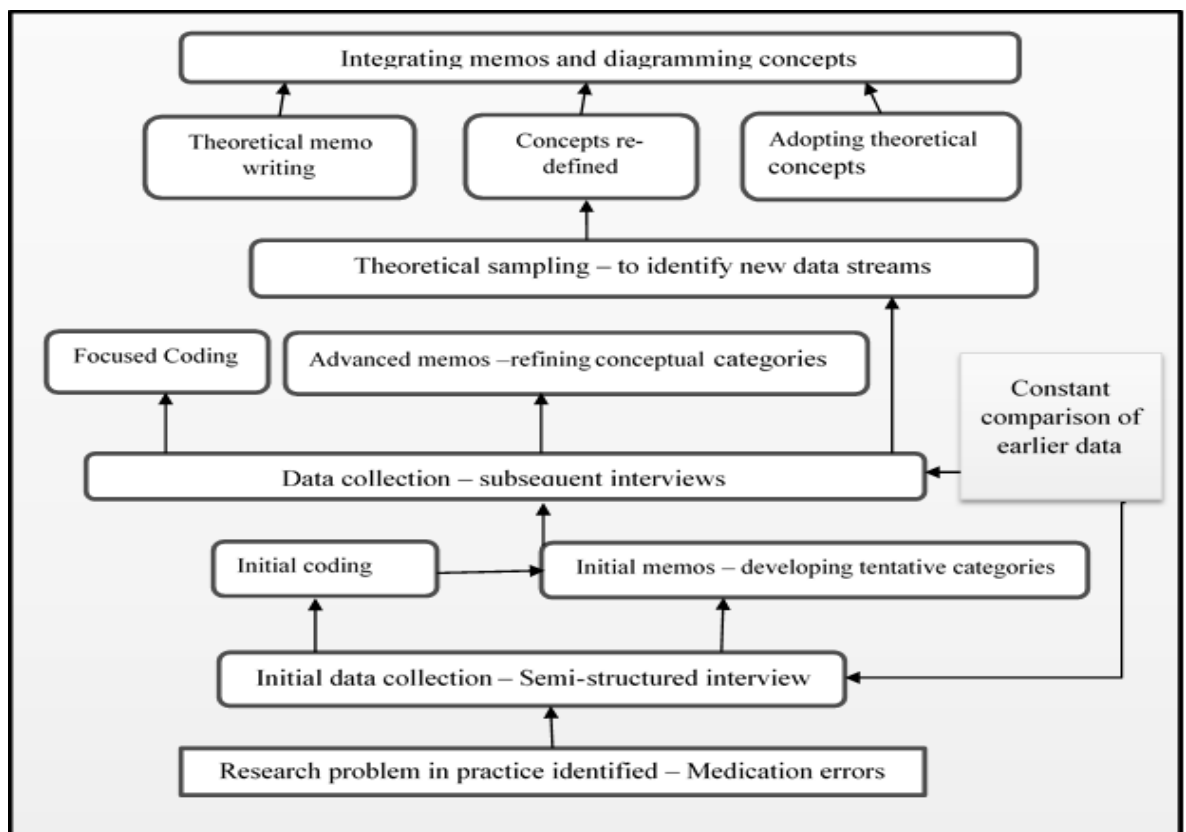


FIGURE 7: DATA ANALYSIS FRAMEWORK (CHARMAZ 2006, P. 11)

4.5.1. Analysis framework

This framework suggests that the first interview taking place, is the start of the data analysis. Although there was no other data at this time the data was transcribed, memos documented, and initial codes identified by the researcher to start this process. This framework includes several steps which run concurrently to ensure the development of the theory including:

1. Initial data collection (recorded)
2. Initial theoretical memos
3. Initial coding
4. Initial memos raising codes to categories

5. Data collection (Interviews)
6. Focused coding
7. Advanced memos
8. Theoretical sampling and coding
9. Further cycles of data collection and memo writing and comparison
10. Theoretical sampling – leading to further data collection
11. Integrating memos into the categories and evolving theory
12. Writing the first draft

Step 1: Initial Data Collection

The initial interviews and transcription of the data forms part of the analysis both in terms of the participant's story but also as part of the researcher's reflections on the data focusing on their own impact on the research and their growing reflexivity. Wimpenny and Gass (2000) suggest that interviews in Grounded Theory are often used in combination with other data collection methods which in this case included memos and field notes. An interview according to Charmaz (2006) is an 'in-depth exploration of a topic or experience' and adds that the interviewer's role is to listen, observe with sensitivity, and to encourage the participant to share their experiences or knowledge (p.25). The sessions were recorded and once the interview was completed the researcher transcribed the data by hand to allow immersion in the data. Although this transcription was time-consuming it helped the researcher to review this data, during which further memos were completed to identify early codes or concepts and any ideas being explored further.

Step 2: Initial theoretical memos

Memos were collected throughout the study, to enhance the data collection process and to continually analyse this data. According to Yu Chen and Boore (2009), memos are an important aspect of enabling researchers to discover and define hidden or unclear processes and assumptions with the data. Charmaz (2006) adds that memos should be written soon after the interview to avoid losing the researchers 'voice' and frees you to explore your ideas. Action words and phrases in the participants own words were used in this coding so that their original meanings were not lost. The next stage was to develop the open codes.

Step 3: Initial or Open Coding

Coding begins with open coding, which involves the researcher being open to the themes and ideas which are generated from the participant's perceptions and experiences and by using a line by line process to name each segment of data (Urquhart, 2013). Green and Thorogood (2009) suggests that line by line analysis tries to 'open up' the data to enable the researcher to look at all the numerous opportunities of enquiries. Green and Thorogood (2009) suggests this allows the researcher to ask, 'what is going on here?' This is supported by Charmaz (2006) who suggests, when researchers start open coding they should be asking questions of the data such as what the study is about, what the data suggests, from what point of view and what theoretical categories does this indicate. Within this study, the open coding used line by line coding or small segments of data, which were put into codes using the participants' own words. Charmaz (2006) also argues that it is important to make the codes fit the data rather than forcing them. She suggests the use of a 'code' to adhere to which is being undertaken in this study which includes:

- Being open throughout the study
- Staying close to the data
- Keeping codes simple and precise
- Construct short codes
- Preserve actions in the data
- Compare data with data – (constant comparison)
- Move quickly through the data

Here, it was important that the codes were faithful to the participant's information using their own words using actions to identify the initial codes. Examples of open codes found within this study included being over trusting, being anxious, and becoming blasé. This also starts the process where the researcher can start to consider the 'what next' which is completed by the memos, constant comparison and data collections cycles.

Step 4: Initial memos raising codes to categories

This use of constant comparison is important in Grounded Theory and ensured the researcher was able to review and analyse each concept or code and to develop a wider understanding of the data. Constant comparison is supported as the best

method in Grounded Theory by Glaser and Strauss (1967) and Charmaz (2006). Charmaz (2006) adds that using constant comparisons throughout your data codes and categories advance the ‘conceptual understanding’ and allow the researcher to expose the data to rigorous scrutiny. Urquhart (2013) adds that although this is a simple technique it is also an effective method for analysing data and building theories. It is at this time that the theoretical sampling helps the researcher to expand the exploration and data as identified earlier.

Step 5: Data collection

The process continued with further data collection being undertaken until data saturation is achieved and the data collection and analysis is no longer contributing new insights into the developing themes (Charmaz 2006).

Step 6: Focused Coding

The second phase of coding was focused coding. Charmaz (2006) argues that focused coding is more selective, directed and conceptual compared to the open coding. Charmaz (2006) adds that focused coding is used to identify the data which, the researcher feels are the most ‘significant and/or frequent’ code generated from the data. In this case, it included the codes identified as experience, trust, challenge, distractions and decision making. During the continuous cycle of collecting data, analysing and comparing the data the researcher continued to use reflection and review the data to refine and adapt the emerging codes and categories. Further periods of reflection on data, redefining the concepts and adopting new concepts to define the theory continued (Charmaz, 2006). However, this was not the end of the process, as the researcher continued to return to earlier data and codes to continue to analyse, refine and adapt the theory as the interviews continued until no more categories were emerging from the data, and data saturation was reached.

A further method of coding identified by Strauss and Corbin (1998) is axial coding which they suggest makes links between categories clear. Charmaz (2006) suggests that although axial coding is useful if the researcher wants to use a frame to guide the researcher it can either limit or extend the vision and is not always needed especially if the researcher prefers flexible and simple guidelines. Charmaz

(2006) explains that although this may be helpful to theory development it can also be forced. She suggests that axial codes should be used if there is an indication that it would help to clarify the analysis but otherwise it may not be useful to the analysis. Therefore, following reflection, axial coding was not used

Step 7: Advanced memos

Advance memos were used to categorise and compare the data. In this study several comparisons were made including:

- The comparison between experienced and inexperienced nurses
- Comparison of data, code, category and sub-categories
- Comparisons on previous experience and training.

Step 8: Theoretical sampling and coding

This then leads to further interviews, memos, coding and theoretical sampling which is concerned with identifying where next and who with, which continues until data saturation occurs.

Step 9: Further cycles of data collection, memo writing and constant comparison

These steps were then repeated throughout the study to identify further data, analyse, refine and develop codes and categories. This stage enables the researcher to review earlier data with new data, identify new codes and to refute or back up codes already identified thereby increasing the credibility within the study findings (Charmaz 2009).

Step 10: Theoretical sampling

Theoretical sampling is then used to identify other participants who can offer new insights into the discussion or new codes/categories such as the Matrons who added an extra dimension to the study or one of the participants who identified that she had more experience and therefore could adapt to disturbances in medication administration practices easier than junior staff. From this, the researcher wanted to explore the views of newly qualified practitioners and senior nurses to give other perspectives. This was then explored further with experienced and NQN's to refine and develop this concept further as well as the matrons until the researcher had confirmed data saturation. In this case, data saturation occurred by the 13th

interview. Data saturation is recognised as the time when data collection is not contributing new insights into the developing themes.

This concept of data saturation and how many interviews would be needed caused much debate and concern for the researcher, who was considering questions such as how many interviews would accomplish this? How would they recognise it? This is not a unique finding, Guest, Bunce and Johnson (2006) argued that although purposive samples are used regularly, and their size is determined by data saturation there is little guidance on this for researchers. Charmaz (2006) suggests 25 interviews may be sufficient for small projects but may lead to scepticism in the findings. However, Mason (2010) reports that often doctoral students may be doing more interviews than needed to defend their research in their examinations. He explains that often students use numbers like 10, 20, or 50 to justify their saturation and that these may often be pre-determined to meet the regulations. He also identifies several Grounded Theory studies which suggested they had 'met' data saturation from various numbers including 429, 174, 30, 25, and as low as 4. This was also highlighted by the paper written for the National Centre for Research Methods by Baker and Edwards (2012) who asked 14 experts their opinions which were diverse, and no identified number was obtained.

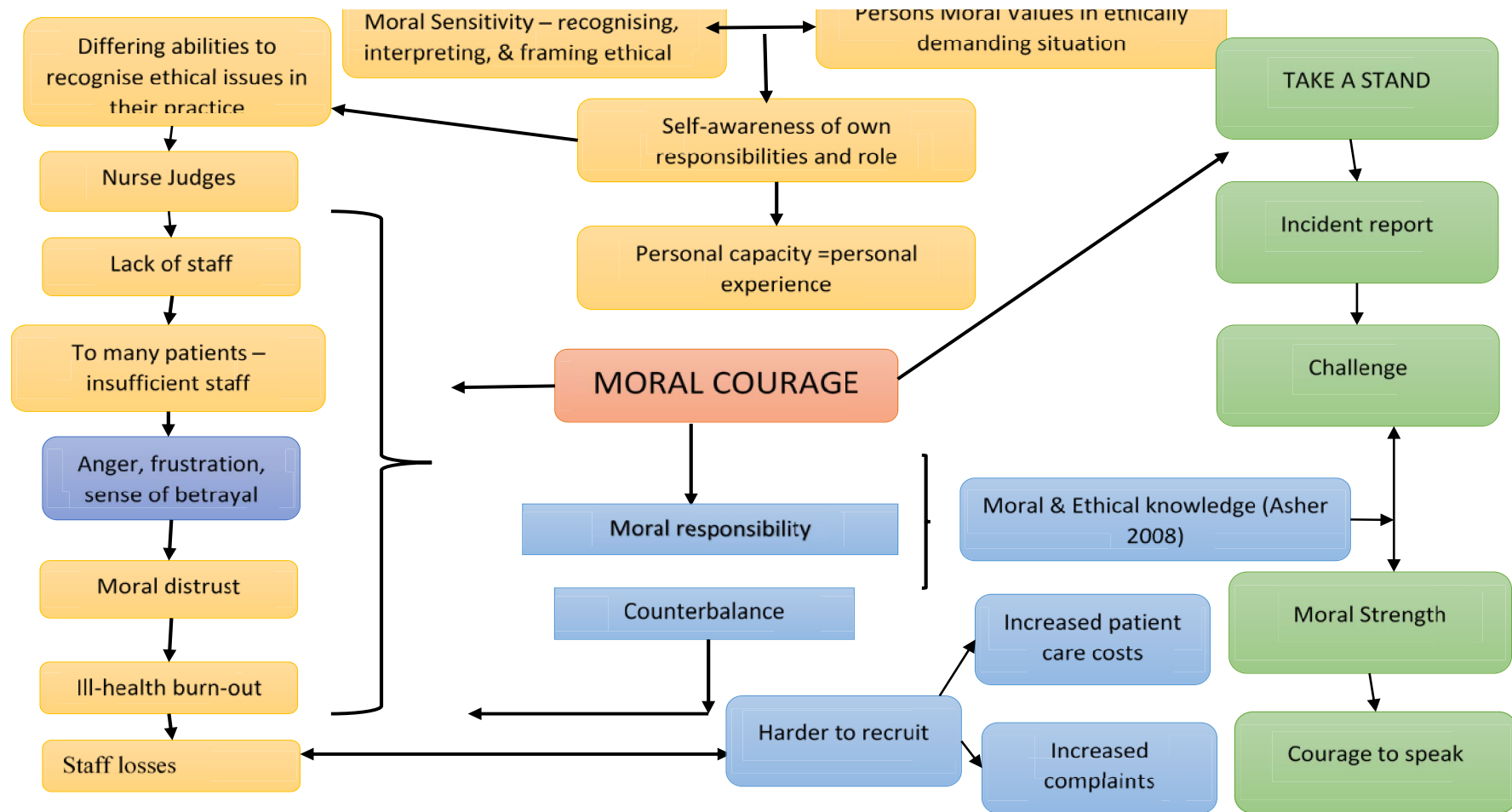
One of these experts Alan Bryman suggested that asking how large this sample needs to be is unhelpful. Charmaz, (2006) argued that some researchers mistook the efficiency of Grounded Theory with quality and a handful of interviews does not guarantee a good study. However, one indication came from Guest, Bunce and Johnson (2006) who analysed their data to assess when their categories were identified in relation to the interview numbers. They found that 12 interviews were sufficient for data saturation but that most of their themes had already occurred by the 6th interview. They explained that after 12 interviews they had 92% of the codes developed and concluded that after the 12 interviews new codes were infrequent and were variations on the themes rather than new codes. They also found that by the 12th interview code definitions were stable and that although only 58% of their code revisions had been completed by the 12th interview any further changes had not, in fact, made any further major changes to the core meanings.

Although this evidence is only one study it does provide some evidence of the effectiveness of this number in this case. In addition, it is not only the number of interviews which is important to researchers. It is also important to recognise that whenever a researcher continues to collect evidence they may find new knowledge, but they also must find an end point. All researchers are faced with issues of the time, and resources available to support this (Charmaz, 2006). Charmaz (2006) argues that you ask yourself what makes the rich, substantial data you need. However, it is important to recognise that this data does not just come from the interviews but the Grounded Theory process of constant comparison, the integration of memos, diagrams and the final integration of the literature and the reflexivity of the researcher. In this case, data saturation was obtained by the 13th interview. On review of the categories it was apparent that no new categories were identified after the 8th interview and by the 13th interview, the researcher was satisfied that the categories had been refined and data saturation had been reached.

Step 11: Integrating memos into the categories and evolving theory

In the later stages of data collection, the process continues, and memos are integrated into the categories and evolving theory. Charmaz (2006) argues that once the categories are developed, they must be sorted. Charmaz (2006) adds that memos and diagrams can help this process providing the researcher with a method of forming and refining theoretical links and prompts the researcher to make comparisons between the categories and develop relationships at an abstract level which will be explored in the later stages of the study. The researcher found diagrams very useful to consolidate and refine her thinking and the analysis of building categories and then theory from the initial open coding. One example of a diagram on moral courage can be seen in figure 8 p113.

FIGURE 8: DIAGRAMMING EXAMPLE - MORAL COURAGE



Step 12: Writing the first draft

One of the key issues for a researcher to consider is the writing up of the study. This starts with a draft which is adapted and changed which needs to demonstrate an original contribution to the studied subject under review. Charmaz (2006) suggests that this means offering a fresh or deeper understanding of the area under review, in this case, implementing best practice. Therefore, the first draft was written and revised several times. For clarity, past copies were kept ensuring these could be reviewed and reflected upon to demonstrate earlier thoughts and decisions.

4.6. Scientific Rigour

Scientific rigour is important to demonstrate to the reader how they can have faith in the researcher's findings. Part of this faith is concerned with demonstrating the extent to which the researcher can generalise the results to other situations (Williamson, Jenkinson and Proctor-Childs, 2010, p.143). However, according to Williamson, Jenkinson and Proctor-Childs (2010, p.146) methods such as validity and reliability are not suitable for qualitative research as the research has different methods of data collection and underlying philosophy. Cooney (2011) argued that there have been several methods for judging the credibility of scientific rigour of Grounded Theory research including:

1. Glaser and Strauss (1967) two categories including the need to 'fit the situation' and 'that it works'.
2. Corbin and Strauss (1990) who added it needs to be understandable, general and allow partial control.
3. Chiovitti and Piran (2003) suggest three categories including credibility, auditability and fittingness.

Glaser and Strauss (1967) raised concerns about the various methods for credibility arguing that "criteria of judgements should be based on the strategies used for data collecting, coding, analysing, and presenting data and generating theory'. However, as they did not explicitly describe how to demonstrate quality, in grounded studies it is difficult to define. One framework identified in table 13 (p116) suitable for Grounded Theory is outlined by Green and Thorogood (2009).

TABLE 13: METHODS TO AID CREDIBILITY

Element	Criteria	Methods the researcher will utilise to address
Transparent	➤ Provide clear account of procedures used that others can follow	➤ Methods were clearly outlined within the thesis
Maximises validity	➤ Provides evidence from the data for each interpretation made. ➤ Including enough context for the reader to judge	➤ Quotes from the data were reported ➤ Four participants were asked to check their transcript for accuracy and truthfulness.
Maximise reliability	➤ Comprehensive analysis of whole data set ➤ Simple frequency counts	➤ Constant comparison used to analyse data ➤ Codes and categories developed from the data
Comparative	➤ Compare data between and within the data sets ➤ Compare findings to other research	➤ Constant comparison method utilised ➤ Findings compared to other research following analysis
Reflexive	➤ Account for the role of the researcher in the research	➤ Reflection undertaken throughout the study ➤ Field notes and memos used during data collection ➤ Researcher role and impact was reported within the thesis
Adapted from Green and Thorogood (2009)		

4.6.1. Transparency

Green and Thorogood (2009 P.227), suggest transparency is needed to provide a clear account of the research methods. This clear account is important as it enables readers to see how credible the research is. This transparency is achieved by a clear description of the methods and processes and how the researcher has approached the research so that the research can be replicated if required.

4.6.2. Maximising validity

Maximising validity in this context is the ability to provide evidence for each interpretation, which in this case was completed by excerpts from the data and the participants checking the data for accuracy to data and meanings (member checking). This evidence and member checking is supported as ‘best practice’ in research credibility (Beck, 2009, Cooney, 2011). To aid this process, eight participants were asked to review their transcripts for accuracy and to add any further information. The others had left the Trust and therefore not accessible to the researcher. Five participants responded, and minor amendments were made to one script.

4.6.3. Maximising reliability

Maximising reliability is concerned with the data analysis, coding and constant comparison of data. In this case, it was completed via the constant comparison throughout the data collection and the way the codes and categories were developed. Memos and diagrams helped this process and were considered within the analysis.

4.6.4. Comparative

Comparative is also concerned with the constant comparison throughout the research but also with ensuring that the findings are compared to other research. In this case, following analysis, the literature was reviewed and compared to build the discussion and to locate the study findings within the current body of evidence.

4.6.5. Reflexivity

The last of the framework sections is concerned with reflection throughout the research process on the researcher's impact on the study and participants (Reflexive validity). Hiller and Vears (2016), argue reflexivity is where the researcher in qualitative studies critically analyses their role and impact on the research. These include their preconceptions and their influences on the research process and data interpretation. Hiller and Vears (2016, p.15) add that although it is not possible for the researcher to be aware of every aspect involved with their preconceptions and their own impact on their research, being reflective will increase 'the research vigour and credibility'.

The method used to enhance the vigour and credibility includes the use of field notes and memos which describe what happened and their resulting interpretations. Throughout all of this, the researcher used reflexivity to explore and understand their impact on the research and to ensure that all decisions made were identified and justified. Reflexivity is the ability of the researcher to reflect on all aspects of the research process, the data being collected and their own experiences. This is defined by Robson (2002) as "An awareness of the ways in which the researcher as an individual with a particular social identity and background has an impact on the research process." (p.22). Cutcliffe (2000) suggests that it is important to acknowledge their previous experiences, values and

beliefs as well as the data. It also includes the researcher's choices on which data to follow and which are not followed and the reasons for this. Richards (2015) expands on this suggesting that it does not mean researchers have empty minds but rather that they state what these possible areas for bias are to inform the reader what these are and how they minimise them.

In Grounded Theory, methods to show how the researcher minimised the potential bias is found in the discussion of how the research process was managed and the theory developed as in the case of the recruitment of participants discussed above. This includes methods to explore the data including memos and reflective accounts of the research process, why methods were utilised and the researcher perspectives. In this Grounded Theory research, it involved the need to identify choices taken right from the start of the study with the literature review through to the resulting analysis. To ensure the research was credible, data was collected through interviews with staff from multiple departments and with differing levels of experience and followed up through participants reviewing their data and confirming the 'credibility' of the data (Participation verification and the researcher role). Themes were developed using the participant's own words to ensure it was developed from the data and all stages clearly documented to provide clarity in the research findings.

4.6.6. Researcher's perspective in the study

One area which, the researcher had considered prior to recruiting participants was their role within this recruitment and throughout the study as a member of Trust staff. This was important to prevent any potential coercion or bias in the researcher/participant relationship. This is supported by Lofman, Pelkonen and Pietila (2004 p.337) who argues that the researcher/participant relationship is unequal adding that researchers can either be involved as an insider with authority, such as a clinical leader initiating change or an outsider as someone with no authority who does not initiate change. Blaikie (2007) suggests that outsiders tend to stand back and observe the situation whereas the insider is thoroughly immersed in the situation and engaged in a close relationship with the participants.

This fits well with the Grounded Theory constructivist approach which, enables the researcher to create meanings and actions in partnership with the participants (Charmaz, 2006). In this case, the researcher was an 'insider' as a member of the Trust who had a long history of working within the departments that were involved in this research and was also in the same profession as the participants. Williamson and Prosser (2002) suggest that insider studies appear to be more successful than studies where researchers take on the 'outsider role', adding that although both have legitimate areas of authority, the insider has the additional 'authority to change practice'. Lofman, Pelkonen and Pietila (2004) agrees that being an insider can help to enhance the credibility of the researcher but can also lead to the risk of the researcher coercing or 'patronising' the staff, which, must be avoided. This is confirmed by Hewitt-Taylor (2002) who suggested that to ensure that this risk of bias is reduced the researcher must reflect on their own position and possible effects this may have. Therefore, the researcher implemented several measures to avoid these pitfalls. Gatekeepers were used to access potential participants. The researcher maintained a reflective stance throughout this study. Field notes, memos and reflections throughout the study enabled the researcher to examine decisions made, and reflections following each interview were completed and considered prior to subsequent interviews.

4.7. Ethical principles and their application

During the research, it was important to consider ethical issues. This includes two aspects to consider, specifically ethical principles and their application, and research ethics and governance. As a researcher, it was essential that good faith was maintained throughout the research, which included the adherence to the ethical principles and factors such as ensuring confidentiality and the safety of participants or as identified by McNiff and Whitehead (2006), to 'always do as you say you are going to do' (P.87). To maximise the assurance, the researcher was reflecting continuously on the research, their researcher's role and the actions being taken to ensure the study was conducted effectively and ethically throughout the study phase and duration of the study. Throughout this several ethical principles were considered. Ethical principles in research are essential to prevent harm to the researcher, participant and organisations. McNiff and Whitehead

(2011) agree listing three criteria for researchers to consider when planning research proposals, which include:

- Negotiating and securing access to the site and participants
- Ensuring the participants are protected – including consideration of the ethical principles (beneficence, non-maleficence)
- Assure good faith throughout the study group.

This was also highlighted earlier by Gelling (1999) who argued that there were seven ethical principles researchers should consider including:

1. Beneficence (to do good)
2. Non-maleficence (do no harm)
3. Fidelity
4. Justice
5. Veracity
6. Confidentiality
7. Respect for autonomy

These ethical principles were applied throughout the research process and utilised in seeking ethical approval (Gelling and Engward, 2015). The first of these principles beneficence is concerned with ‘doing good’ for others such as the recipients of the research findings or the participants.

4.7.1 Beneficence

Although it is accepted that not all participants will benefit from participating in a research study this needs to be balanced against the ultimate good that might result from a study (Beauchamp, 2007). In this case, the PIS highlighted that there was no direct benefit for the participants. The benefit from this study will come from the wider understanding of these issues within nursing and the factors which may influence the implication of best practice. However, it is important that this benefit is balanced against the potential risks of harm.

4.7.2 Non-maleficence

Balancing risks to the participants and host organisation was essential. Potential risks needed to be explored effectively before the study began to ensure participants were aware of any potential risks, and strategies put in place to minimise these, such as any counselling or support that may be needed during or post interview. Therefore, the participant information sheet (PIS) needed to be easy

to read, avoiding jargon and contain a clear description of the study. It needed to identify how the researcher had planned to minimise any potential risks, as well as ensuring the participants were aware of their right to withdraw from the study at any point during the study. They needed to have the contact details of the researcher's in case they had any questions following the interview. There were four types of harm which was considered by the researcher and which could have impacted on the research participants, which included physical, emotional, social and financial. Although physical harm in studies can occur and can be distressing, in this study it was an unlikely occurrence and no instances occurred. Due to the nature of the study, there were also no financial issues, the participants were interviewed at the workplace in a time and place suited to them, and therefore was not highlighted as an issue in this research. The two areas which were highlighted in the PIS and during the meeting with the potential participants were emotional and social harm, which could occur

4.7.3 Emotional harm

Emotional harm is one area which could have potentially affected the participants whilst exploring sensitive topics like medication errors. This may include a risk of distress from any questions or issues which may have arisen within the discussions which might evoke distress. This potential risk was highlighted in the PIS and during the meeting with the potential participants prior to recruitment. At no time did a participant choose to leave the interview. Another potential risk was that during the interview there was the chance that the participant may disclose information to the researcher which would have to be followed up, such as a risk to patient safety or to the host organisation. This potential risk was highlighted within the PIS and discussed verbally with the participant prior to the interview. This did not become an issue during the interviews although in a couple of occasions a post interview meeting was held to help the participant deal with issues which arose. One example of this was the nurse who suggested that as a newly qualified nurse she lacked support in her medication administration training, therefore, an agreed plan was implemented, led by the participant to help her deal with the situation.

4.7.4 Social Harm

Social harm is usually concerned with ensuring that the participants are protected from the reactions of others in their social world. For example, if a participant in research about medication errors revealed something which affected the team and needed addressing urgently. If the team found out where this had come from it could potentially affect their relationships or social standing. Therefore, it was important that confidentiality was considered to protect the participant's identity (Ellis 2013).

4.7.5 Confidentiality

Maintaining confidentiality in qualitative research is not always easy due to the local nature of the research and the small numbers of staff involved (Lofman, Pelkonen and Pietila, 2004). Therefore, the researcher needed to identify ways to minimise this risk. To minimise this risk all participants were named by a pseudonym. However, confidentiality is not just related to the people but the data as well, therefore, the recordings of interviews were deleted following the interview transcription. The transcripts are kept in a locked filing cupboard by the primary researcher and will be shredded following study completion.

4.7.6 Fidelity, Justice, Veracity and Autonomy

Fidelity is concerned with building trust between the researcher and participants which come from the explanations and discussions on how the researcher has minimised the risks? This comes hand in hand with the concepts of justice or being fair to the participants, veracity where the researcher needs to be truthful for example in outlining the risk of harm from disclosures and actions to be taken, as well as ensuring that participants had autonomy to make informed decision to participate or not. This involves the need for the researcher to be credible, and always do what is agreed to ensure a reputable standing (Boswell and Cannon p.145). It was important to ensure all potential participants were informed, their views accurately recorded and used in line with the ethical principles, outlined. Therefore, the researcher provided a PIS to outline the benefits and risks of participating, and consent was gained to ensure the protection of participants. In addition, to being fair to them, the researcher ensured that participants knew about

their rights to withdraw from the study at any time within the study up to the time the analysis had been completed and that they understood the research and the potential risks.

4.7.7 Research Governance

Research governance approvals are essential if research is being undertaken in an external organisation prior to the start of the research to safeguard the rights and safety of participants. This includes applying to the research governance committee for approval before accessing potential participants or starting the data collection process (Gelling, 2015). As the research was to be undertaken in the NHS as part of a doctoral study, the researcher needed to apply for an agreement through the Faculty Research Ethics Panel (FREP). Approval was also needed via the Hospitals Research and Development Governance Committee for access to the site and participants, who were important in confirming that they agreed with the study aims and supported the proposal.

The role of the REC committees is to ensure that the risks of any research, is balanced against possible benefits, and ensuring participant's rights are maintained and any risks are minimised (Gelling, 2015). In relation to the site, a clear plan was outlined to the Trust educational and research committee, lead nurses and Director of Nursing. Research ethics approval was granted in July 2013 by the University Faculty Research Ethics Panel (FREP) following the submission of the study proposal (appendix 13 p.298). Approval was also granted in February 2015 for the amendment to recruit additional participants (appendix 14 p.300). Once ethical approval was granted the ward matrons and lead nurses were contacted and agreed to approach the registered nurses in their departments to provide the information to them. Throughout this process, the ethical aspects of the study in relation to the participants were the overriding consideration.

In this chapter, the reader has been presented an overview of how this research was conducted and how the methodological issues were addressed. Medication administration is a fundamental role for nurses involving complex skills and decision-making, which can lead to increased risks for the patients. This Grounded Theory study used the framework referred to by Charmaz (2006) in section 7.5

above. Grounded Theory is recognised as an effective method for qualitative research and can provide a rich data which can be used to develop a theory within the subject area explored if the methods involved are robust and credible (Green and Thorogood 2009).

This chapter has outlined the methods used to ensure this research fits the research methodology. This included using a method which encompasses theoretical sampling, data analysis, using memos, constant comparison, acknowledging data saturation and the methods used to refine and develop the theory, including theoretical memos and diagrams as advocated by Charmaz (2006). To 'do no harm' is essential, however, this research should provide further information to improve patient safety and improve practice. In addition, this review has outlined the methods and ethical principles that the researcher utilised to minimise risks to the participant, to ensure they had autonomy both in the participation and if required their ability to withdraw from the study. The researcher has attempted to ensure that the data generated from this research is based on acceptable processes and ensures the reader that the findings are both credible and ethically sound.

Chapter 5: Findings

5.1. Introduction

This chapter presents and outlines the data generated by the participants and the themes evolved from the constant comparison method of data analysis. This data suggests that although nurses may understand the policies, guidelines and have appropriate training, these are not always implemented effectively. The research confirms that there are many complex and overlapping reasons why practice may not be implemented effectively even though nurses recognise and understand the way it should be completed. This is complicated by the way the nurses make rapid decisions based on experience, their knowledge, level of risk and whether they ‘trust’ others involved in the situation. This study suggests that despite the wealth of initiatives implemented to improve medication administration within the NHS and across the world in health care, implementing best practice continues to be a challenge. Following analysis, four themes were developed from the participant’s data.

This chapter will outline the findings from this research and the four themes including the core theme which is decision making, work practices, patient safety and staff development. This chapter will identify the perceptions and experiences of the participants in relation to medication administration in practice, their training, and knowledge and how this impacts on the practice. Thirteen participants (see Table 14 p126) were recruited to the study and completed semi-structured interviews using vignettes as detailed earlier.

The staff ranged in banding from newly qualified and experienced band five nurses: band 6 (Deputy Sister): band 7 (Ward Sister) to band 8 (Lead Nurse) nurses. All the participants who volunteered were female, aged between twenty-three and fifty-five years of age from a variety of settings in the District General NHS Hospital Trust. The participants had a wide range of experience ranging from one to thirty years of experience as identified in Table 14 (p125).

TABLE 14: PARTICIPANTS INFORMATION 1

Participant	Pseudonym	Years of nursing experience	Salary Band / grade of nurse
1.	Ann	27	6
2.	Bess	35	6
3.	Claire	30	6
4.	Dawn	1	5
5.	Erica	4	5
6.	Fliss	30	7
7.	Grace	5	5
8.	Hope	28	7
9.	Ida	2	5
10.	Jess	21	8
11.	Lana	32	6
12.	May	12	5
13.	Tess	29	8

5.2. Resulting Categories and Themes

Four main categories were identified from the analysis: Decision making, work challenges, patient safety and staff development. Although all the categories were interlinked, decision making was recognised as a theme which ran throughout all the categories and was therefore identified as the main theme of this study. This can be seen in Figure 9 p125.

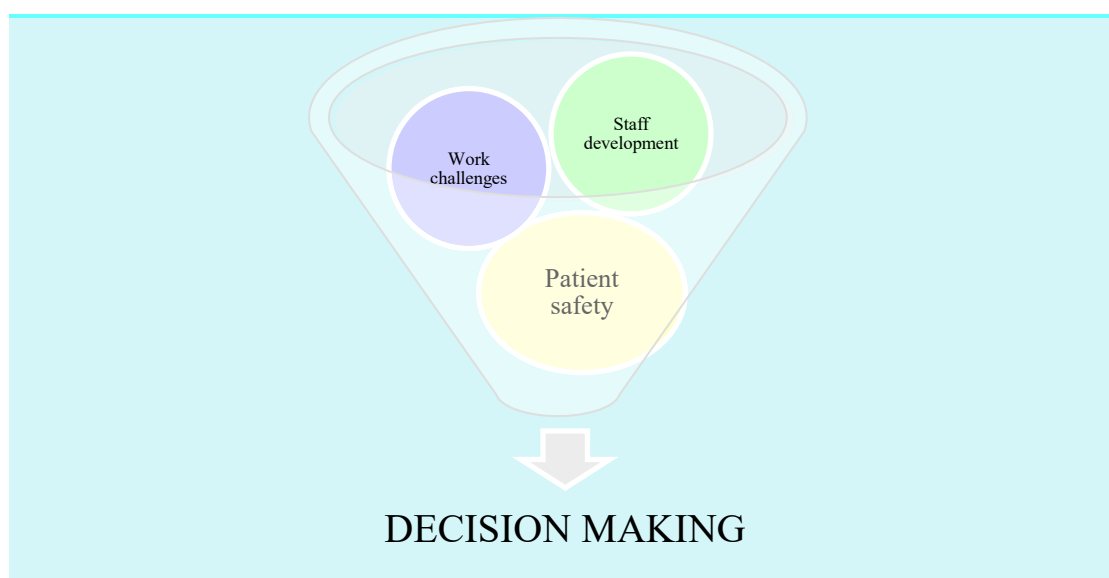


FIGURE 9: STUDY CATEGORIES

Although four main categories emerged from the data each category consisted of several sub-categories as seen in Figure 10 p126.

FIGURE 10: CATEGORIES AND SUB-THEMES

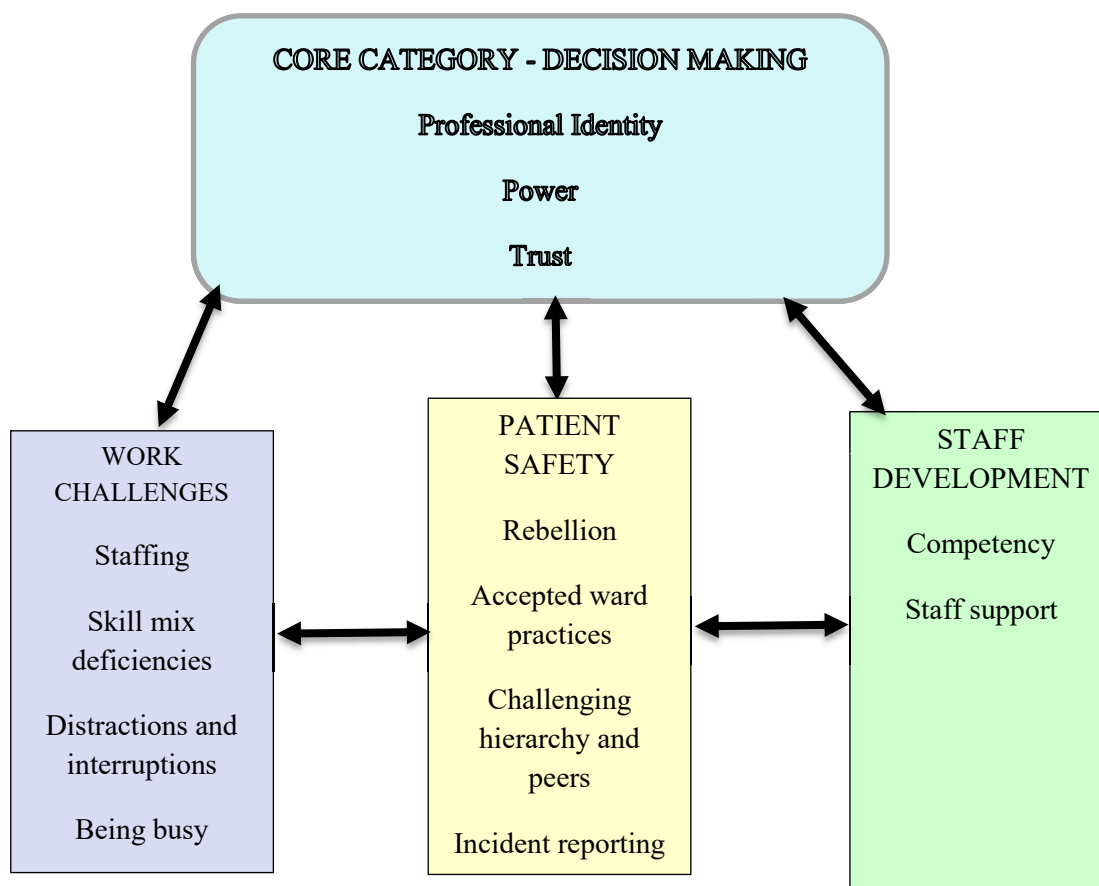


FIGURE 10: CORE CATEGORY - DECISION MAKING

5.3 Core Category – Decision making

One issue highlighted throughout this study was the decision-making process the participants used. It was clear through the analysis that this was the core category, which is consistent with all the categories and holds the resulting theory together. The nurse's decision making skills appear to be key to the way nurses react to increased workloads, staffing and skill mix challenge's and the way they decide on which incidents to report, who to work with and who to trust. Prior to exploring medication administration, the participants were asked about their own experience, knowledge and training of medication administration to assess this in relation to the research question. Although there were some misconceptions such as whether two nurses had to administer an intravenous medication generally the nurses had a good knowledge and understanding of the policies, procedures, the risks and

positive values in relation to their role and patient safety. All attended updates annually and they were all able to discuss the implications of medication administration, risk and incident reporting policies. Assessing the nurse's knowledge was important to see whether any findings were due to a lack of knowledge or other reasons such as lack of time or staffing.

This link between time, busyness and practice was identified by May who explained that when staff were busy they were more likely to forget things and Dawn who suggested that staff can become 'blasé' about their practice. This likelihood of the nurses to forget or become blasé was highlighted as important especially when staff were distracted, short staffed, had to cover for others or in charge of the unit. This can be seen by Dawn's comment

"You have your own 10–11 patients and you get distracted, you might have to do something important like somebody's PCA has run out or someone needs an urgent blood transfusion, you are the only one who can do it".
(Dawn)

Claire explained that when they were busy and short staffed, even though medications were prioritised,

"Nurses may miss things or adapt policy like leaving tablets on the tables"
(Claire).

This link between the workload and decisions would suggest that staff were actively making decisions on where they could amend practice to save time. This was supported by Claire who suggested that even if this increased the risks staff may have to adapt their practice to try and prioritise the care. Tess agreed explaining that this was how the ward practices could develop as staff may 'cut corners' and adapt the ward practices which then become part of the norm for that department. Jess explained how when she was working with another member of staff from another department they:

"Checked a controlled drug with a substantive member of staff and their practice wasn't local practice" (Jess).

When asked how this could be minimised Tess suggested that staff needed to be able to challenge however this meant staff had to decide when it was safe to challenge and when they would avoid it. Ida also felt that challenge was daunting to some nurses suggesting they would then avoid it. Another area which nurses said could be avoided was the incident forms. One explanation of this was the understanding from participants that decision making, and challenge were dependent on the level of risk to patients and themselves.

5.3.1. Risks to patients

One example of where the nurses were making active decisions based on risk was when considering whether to complete incident forms for the scenarios concerning the missed paracetamol and the antibiotic. Ann suggested that both incidents were:

“Equally the same”, but that one (antibiotic) is far more significant than that one (paracetamol)” (Ann).

Several nurses suggested that decision making is the way nurses use their knowledge and experience to assess and action their judgements in practice. There were several aspects seen as important when making these decisions such as whether to report an incident, adapt the policy, prioritise, and the level of experience someone had. This decision making according to Anne was due to their own personal experience and professional judgements. Lana agreed stating:

“It is down to their decision making” (Lana).

Another example of the nurse’s decisions making was seen with the ID checking where there was a suggestion that this was not always completed effectively if the nurse already knew the patient. When asked why these decisions not to follow the correct procedure were taken, responses included lack of time, staffing and the nurse’s decision making in relation to her wider knowledge of health care practices. This was highlighted by Lana who pointed out that although the hospital policy stated that two nurses needed to check the IV process through to administration some hospitals allowed single administration of IVs. Therefore, she felt this was a safe action to take and suggested that this may result in staff who

pick up these habits and make the decision to go alone to the patient modifying their actions from the guidelines because

“You can do single handed at other Trusts. It’s allowed in one Trust and not in this one” (Lana).

Lana added it was as if:

“They don’t trust you, but they trust them... It’s one rule for one and one rule for another...it’s safe in another trust, it is not unsafe... it is down to their decision making” (Lana).

This would suggest that the nurses are actively deciding to rebel because they believe it to be safe. This active rebellion was also seen where tablets are left on tables for patients. This was illustrated by Fliss who explained that:

“If there is an independent patient who says can you leave the medicines there” they do. (Fliss).

When informed that the policy stated that you sign after the patient has taken the tablet, she explained that this could be difficult as there were distractions, but she acknowledged most nurses would give the tablets to patients who could take them and then check that the patient had taken them before they left the bay. She explained that although some would sign when adding the tablets to the pot some may:

“Put out the meds and add a dot until the meds are taken and then sign as we should be signing after the meds were taken” (Fliss).

This practice of signing prior to the patient taking the medication was also supported by Ann who added that she checked they have taken them before she left the bay but:

“Sign as I go along. Then I know what is in the pot” (Ann).

According to Ann, this meant that she would know whether they had taken them or not before she left the bay or if they refused she would then go back to amend the drug chart.

Fliss agreed adding she would:

“Check if they had taken them before leaving the bay, you would get distracted doing everything else and forget to do it” (Fliss).

When informed that previously tablets had been returned to the kitchen on trays she replied:

“They get put on the trays, if I was going to leave something for the patient I would leave it on the table, not the tray” (Fliss).

This justification is an interesting concept as the nurses did not feel that this would be breaking the policy or a significant risk to patient safety as they had not left the bay before checking whether medication had been taken and felt the medications had been left in a safe place therefore minimising the risks. However, subsequent reports by Lana and Jess suggested that as medicines had been sent back to kitchens and linen rooms this was clearly ineffective. It was also important to recognise that not all the nurses adopted this approach. Several of the participants stated that they would not leave tablets on the table including Lana, arguing:

“You cannot leave tablets if you have dispensed them, you have to make sure they are taken. That’s your responsibility” (Lana).

Bess had similar views explaining:

“I would not leave medications for patients” (Bess).

When asked, all participants’ nurses knew the policy and had undergone training. Although this training had in some cases been many years in some cases it was clear the policy had not changed, and the nurses understood this and the risks. However, despite this they felt they had minimised this risk by handing out the medications and checking prior to leaving the bay and therefore this was safe. This perception of ‘safe’ was also seen in the case of incident reporting as well. It is interesting to note that the participants looked at incidents based on how important they perceived them to be rather than the fact that an error had occurred. When looking at the first vignette where a nurse identified an omission of paracetamol there was an acknowledged understanding of the process which included phoning

the nurse, checking whether the patient had taken the medication and completing an incident form, however, there was a variety of actions taken depending on the nurse involved. Claire who, when asked ‘what action would the nurse take?’ Explained:

“Paracetamol can be given 4-6 hourly, we would normally ring to see if it was given to the patient but there is no harm in giving the medication at ten” (Claire).

The plan to contact the nurse involved was supported by several of the nurses including Hope who explained that the nurse would:

“Go back to the previous shift to find out if he had it or he might be able to tell us, and then do an incident form to say it has been missed” (Hope).

This plan to phone the nurse was also supported by May who agreed that she might:

“Just give the 10pm paracetamol and not the 6pm dose” or “phone the nurse and check, unless it was too late” (May)

However, she also added that her actions would be different “if this was a more important medication such as warfarin” adding:

“You can’t give warfarin twice, then I would phone but sometimes you have to use your common sense” (May).

May added that:

“You are supposed to do an incident form and if it was detrimental to the patient I would but if not then I would speak to the nurse in the morning, that’s how I would deal with that (paracetamol)” (May).

The failure to complete incident forms supports the discussion earlier about the rebellion which the nurses had towards the expected actions. It was also highlighted by Hope who when asked if incident forms are completed for this type of error replied:

“No, I hope it was, but I know it doesn’t always happen” (Hope).

When asked why Hope explained that:

“Incident forms can be time-consuming and if you’re busy and it is 10.00pm she might do an incident form later. Then things might happen, and it might get forgotten but the pharmacist would pick that up the following morning and do the incident form” (Hope).

However, this failure to complete incident forms was also supported by Ann who agreed that although this was an incident she would not normally complete an incident form because:

“It is only paracetamol” (Ann).

However, on reflection she added:

“That probably shouldn’t come into the equation because it could be any drug really couldn’t it” (Ann).

Ann described how she would check the patient’s pain levels as there can be implications for the patient having increased pain, and then added:

“It’s an incident because the chart has not been correctly filled out. Therefore, it is an incident..., ...not following the code and policy for giving the drug, then signing the drug chart or not putting that the drug was omitted” (Ann).

When asked what action the nurse could take she suggested:

“She could phone... I don’t know if that would generally happen. It sounds real, horrible, for something like paracetamol. If it was more significant they would probably phone and check if the nurse had done it, it would probably get picked up the next time the nurse was on in practice” (Ann).

However, Erica said she would phone the nurse despite the time as patient safety was more important and

“10.00 pm is not too late” (Erica)

Although Lana also said she would phone, she agreed it would be more likely if it was an important drug like warfarin. This difference between drugs suggested that there was a distinction between the medications, which would affect the decision of whether an incident form would be completed in relation to this type of error. However, not all the nurses made this distinction in the same way. Fliss argued that an incident form was needed because if the nurse had missed a medication during the round and there was no signature she would add the relevant code for her own drug rounds, ring the nurse to see if the patient had had the medication and then:

“If not, an incident form would need to be completed” (Fliss).

However, this suggests that even though the chart had not been completed if the medication had been administered, the failure to document would not have been an incident and therefore not reported.

Bess disagreed suggesting the chart would need signing adding:

“There is no signature... She should do an incident form” (Bess).

Conversely, although there was debate and uncertainty about the incident when looking at the omitted paracetamol, there was no confusion with the antibiotic scenario. All the participants stated they would complete an incident form for the omitted antibiotic for a patient as outlined by Claire who stated:

“Ah! This now is a problem because if this same staff nurse has not given this paracetamol and we go to the next patient on an antibiotic, this now opens our minds to say did this nurse carry out the medication round” (Claire).

Ann explained that:

“You could ask the patient, phone and query it with the nurse if it hadn’t been given, and you would have to do an incident form. The patient is acutely unwell, and it is an antibiotic” (Ann).

Grace agreed that:

“...we tend to complete incident form for the ones which are more important like antibiotics” (Grace).

To understand the different approach to the management of these two medications, the participants were asked why this difference may occur. Like Grace, the main response was that the difference was that the patient who missed the antibiotic was ‘acutely unwell’ (Bess). His care was compromised and therefore more important. Ann explained there are:

“More implications on patient safety for this one (antibiotic) than that one (paracetamol)” (Ann).

When asked why someone may see these two medication errors as different Claire added that:

“Paracetamol is an over the counter medication, we take it at home, maybe it is looked at a bit lightly, but it is the same omission” (Claire).

However, the level of risk was not the only issue which affected decision making according to the participants in this study. Professional identity and autonomy were also highlighted as areas which could affect the nurse’s decision making.

5.3.2. Professional Identity

Like risk, the concept of professional identity runs throughout these findings and is the key to decision making. One aspect of professional identity was the level of autonomy. However, it was interesting to note that when asked what autonomy meant several nurses were unable to clearly articulate it. There was also an indication that staff felt that autonomy was not always seen in practice. This lack of autonomy was supported by Fliss explained how she had been appointed to a new role to set up a new service. Fliss explained that they were told of the role requirements and then had to make it happen. Hope added:

“I am working autonomously, I know my limitations and my role and what’s expected of me” (Hope).

Fliss felt that this was not a skill all nurses had or used within the wards adding that she felt staff did not want to take responsibility for their actions and were not always acting as autonomous practitioners.

This feeling that staff were not taking responsibility for some aspects of practice was discussed by Ann who felt that not all staff were autonomous:

“They do not see it as their responsibility if they do something for the patient or not” (Ann).

Fliss suggested that often staff are following pathways rather than understanding or leading pathways and find it difficult to understand adding:

“Autonomy is about making you think, what the consequences of these actions were? What will be the outcome? (Fliss)

Fliss explained that sometimes staff work to a tick box system which is policy driven rather than patient driven. According to Lana this was partly because nurses fail to affect change. She gave an example where three health care assistants wanted to ‘stop the line’ (Lana) as they were unable to cope in the ward. Stop the line was a Trust initiative which enabling staff to ask for support when concerned with potentially unsafe patient care. However, when they tried they were told that it was not a ‘stop the line’ and felt their concerns were not taken seriously, thus preventing them doing it again. This failure to have their concerns considered links closely to the concept of the other element in relation to power and feeling powerlessness.

5.3.3. Power

This concept of power is important if nurses are going to be empowered to challenge the practices which effect care. Power is also based on the level of autonomy the practitioner has which Ida suggests, is where:

“You take ownership for whatever you are doing, it comes down to policies, procedures and working within your role or scope” (Ida).

Powerlessness is where staff believe they have no way of making a difference. This link between the concept of power and the ability to act was highlighted by

Dawn who suggested safe medication administration was affected by your clinical knowledge, skills and confidence adding:

“it can go either way in terms of your experience, the department, skill mix, level of care, patient’s dependency, workload, support from management ... and power to implement better practice in the future and the support you get earlier on” (Dawn).

This need for the ‘power to implement’ best practice was highlighted by Fliss who explained that staff do sometimes have the power to act. However, Grace felt that:

“The more junior staff were less likely to think they can affect practice” (Grace).

Grace added that this meant the staff were unable to influence practice and this may be an area where ward practices may develop. This links back to the comment by Dawn when she referred to the fact that staff can become ‘Blasé’ which makes them:

“Face guilt all the time” (Dawn).

However, even senior nurses felt that they had limited power to change practice. Lana, an experienced nurse, reported that although she felt the medication policy was wrong regarding two people checking IVs she was unable to challenge, change or even question it asking:

“Can we do that, but that’s Trust policy, I wouldn’t know how. We could challenge but who would I go to, who makes these policies, you know we are all in this group and they say policy, policy, policy and you don’t think you can question it” (Lana).

It was interesting that this senior nurse did not consider questioning or contacting the team who wrote the policy to discuss it with them or search the evidence to check her understanding. When discussing this with the lead nurse Tess felt that it was imperative to encourage and empower staff to question and challenge adding that empowering people was:

“Dependent on the available support” (Tess).

This was highlighted by Jess when discussing the ability of nurses to stop the interruptions adding:

“it’s about empowering the person to say no, leading by example, the band six demonstrating to band five nurses, and new starters observing and learning from them” (Jess).

This empowerment is important as Ida suggested:

“The more you empower people, the more people want to know and the more pride you take in ownership of what you are doing” (Ida).

When asked if they felt empowered, Fliss explained that it was improving but gave an example where she had felt disempowered when a new Perspex box for notes was implemented on the wards. Fliss explained that some of the matrons felt this could potentially breach confidentiality and suggested an alternative plan, however:

“We were overruled so did not feel empowered, with medications it is junior staff who do not seem to have the power to change and more likely to think they cannot affect changes” (Fliss).

If nurses, feel powerless, lack empowerment or autonomy they will be unable to challenge and influence practice. Especially a newly qualified nurse who requires support and leaders who can empower them and help them develop their own professional identity. One aspect said to affect this, and the decisions made throughout by the participants was the trust between the individuals.

5.3.4. *To Trust or Over-trust*

Trust was raised consistently as important both in relation to patients where nurses trust patients to take the medication and risk leaving them on tables but also the trust between colleagues. The trust between colleagues was seen as both positive and essential between nurses but also as a risk which could potentially affect the nurse’s decisions and actions. The importance of trust was highlighted by Ann, who stated:

“You trust in your colleagues, there has to be some degree of trust otherwise you wouldn’t get everything done” (Ann).

When asked why nurses ‘trust’ other staff Lana added, we trust our colleagues because:

“They have been trained and are your colleagues”, adding “she knows the policies ...you get to trust them because you work with them day in and day out” (Lana).

The fact that colleagues were nurses and had developed relationships with colleagues was confirmed by several others including Hope gave an example of when they trust a nurse to give an IV to the correct patient and Erica who explained that nurses build relationships and get to know each other’s strengths and weaknesses when they work in ‘intensive environments’, or as highlighted by Claire:

“Because of the relationships people have or worked a long time together” (Claire).

However, Bess suggested this was also a risk because when they were busy they:

“Probably trust each other more than if we are not so busy” (Bess).

One area where staff may rely on trust in an unsafe manner is where they are leaving others to draw up and administer IVs alone when the policies dictated two nurses to draw up and administer. This was discussed by Ann when she responded to vignette 1 where the nurse prepared an IV infusion and the second nurse fails to check the patient and neither nurse challenges the unclear prescription. Ann explained:

“Two people always check IV’s whether someone is standing over someone’s shoulder while it is done or not, the wards are busy and going to give it sometimes two, sometimes one. It is how busy the ward is, and it is trusting in your colleagues to know that patient” (Ann).

Although the participants agreed that it was important to trust each other Ann explained that if she went on her own she was careful to check the patient ID. She

explained that a combination of low staffing and increased workloads could influence this and result in nurses who may check the medications quickly to move onto the next job or not always watch the medications being drawn up. This was also discussed by Claire who suggested this failure to check may happen:

“Because the colleagues trust each other to do it right”?

Therefore, it is important to ask why nurses ‘trust’ in this way if it potentially effects the patient's care. Dawn explained that:

“Being new, to start with people watched me all the time, but gradually they didn’t want to watch the process because they had seen me do it before. I think you build trust over time and they think you will do what you always do” (Dawn).

This belief that someone was trustworthy, and so may not always watch the whole procedure was also supported by Grace who stated:

“We get so busy that we are not always paying all of our attention to whatever we are doing. We will be asked to check a med and they have already drawn it up, so we will say that medication is in there, it is in date, it is being given this way” (Grace).

When asked how would that person know the correct mix was there if they had not drawn it up? Grace replied:

“They wouldn’t, would they? You trust it is there” (Grace).

This kind of trust is a concern as it highlights that sometimes staff may be relying on others unsafely and could lead to increased risks to patient safety. This was highlighted by Claire who suggested they sometimes over-trusted staff. When asked what she meant by over-trust Claire explained it was where staff may accept the skills or knowledge of staff who they feel are ‘trustworthy’. Ida explained that when you worked with someone you got to know their strengths and weaknesses and were more inclined to accept that they were trustworthy with certain jobs. This was also discussed by Lana who added:

“You get to trust your colleagues, you trust them because you work with them day in and day out and so you get blasé. That’s the problem when you get blasé that’s when you have accidents” (Lana).

This problem of staff becoming blasé was discussed earlier and shows that this issue of over-trust in the clinical environment needs to be challenged to promote patient safety. Claire believed this use of over-trust was developed over time, However, Dawn suggested unsafe ‘trust’ was a potential problem for the staff. Dawn recounted a personal experience when she was working through her competency explaining that as she was new to doing IVs she liked someone to watch her through the process otherwise she was not happy to give it. Dawn explained that:

“I think what they do and what you want those to do could sometimes be different... I think a lot of nurses, trust they will go to the right patient and they sign, or they trust that they have drawn it up right and just show them the drugs, but they don’t do the entire process” (Dawn).

Dawn felt that this ‘trust’ could be problematic for NQN’s as she explained that when she asks for someone to go with her they did not seem concerned saying things like:

“I trust you, you’ll be fine, don’t worry. Inside your thinking yea, I probably will be ok, but I would like you to come and check” (Dawn).

Dawn felt that this was difficult because the nurses trusted them and let them do the task, but she found this upsetting as she felt this was more about managing their own workload adding:

“I get a little annoyed, I am the newest member of staff in the department and if I was them I would be watching what they are doing” (Dawn).

Dawn felt that sometimes nurses did not want to watch the entire process because they were busy and wanted to do their own tasks and sometimes may not always consider the ramifications of this in relation to their professional code or safety.

One experience highlighted by Dawn was when she had been administering cyclizine and:

“...I had not even got it out of the cupboard and he had signed it, I asked him to watch, but he walked off, so I had to get someone else” (Dawn).

One of the reasons for this over-trust was alluded to by Fliss who argued that this could be because when staff start on the wards the permanent staff are:

“quick to get them into doing meds and sign them off, we are short of staff and time, that pressures gone once they have done their assessment because they are able to do it rather than asking others” (Fliss).

However, accepting nurses have the skills even if they lack confidence is likely to add further pressure to the newly qualified nurse to comply and continue the practice despite their lack of confidence adding further stress. It is also an increased risk for error.

Conversley, a lack of trust was also identified as a problem even though Grace found it difficult to believe that one of their peers could be untrustworthy, stating:

“We like to think our colleagues are trustworthy” (Grace).

Grace described an incident where there had been a failure to escalate a deteriorating patient. The nurse involved had lied about the incident and Grace had found this difficult to understand adding:

“I really didn’t think nurses lied, I felt we owned up to our mistakes and accepted that we had to learn from them ...I found that really hard to cope with ..., if that’s what they put in the syringe, then I trust that is what it is” (Grace).

It was also apparent that the participants did not trust every member of staff but actively chose those they would trust. This choice of who to trust was supported by Ann who added:

“It’s about knowing the person. I know which of my colleagues I trust and those I don’t. It’s a horrible thing to say but it’s your head if a mistake is made, it is your head on the chopping block at the end of the day” (Ann).

When this did occur the nurses, themselves developed strategies to deal with it as identified by Dawn who explained that she had not yet finished her IVs, therefore, she could have the excuse that she was learning:

“I say can I come and watch you do it?” adding ““I am still using that excuse, but I don’t know how I am going to do it in a few years” (Dawn).

Dawn described one situation whereby:

“There’s a nurse in my department who will never come and watch me, they just sign and go, and I have never had the guts to say can you go through it with me, so I always go and ask another nurse to do it, I always check twice” (Dawn).

When asked how she dealt with this Dawn explained that:

“I have learnt not to ask that person and ask someone else. I don’t know if they do it with everyone, but it seems to be socially accepted” (Dawn).

Although Dawn recognised the problems of this in relation to patient safety she felt unable to challenge the person especially as she felt it was socially acceptable. Nevertheless, she discussed the situation with her mentor and manager. However, this was not a unique problem, Erica found that it was not always easy as:

“Sometimes when you say I am going to come with you to check the patient for medications, they may see it as being undermined as not everyone does that” (Erica).

Erica felt that as a new nurse into the department it was difficult if she said she was going to go with them or she had not seen the drug drawn up:

“To a nurse who had been there 20 years, I am sure they would feel I was being too big for my boots” (Erica).

However, Claire felt it was essential that staff recognise that they:

“Trust but not over the trust. We trust each other but there should be a balance” (Claire).

Claire explained that although staff may feel unable to challenge senior staff as they felt vulnerable it was important to double check because anyone was at risk of making mistakes. This idea that anyone can make mistakes is important. If nurses can recognise their own and others vulnerability they would be more likely to prevent these occurrences. One strategy which is essential in these cases of ‘over trust’ or blind trust is to challenge. However as discussed above challenge is not easy. As Bess pointed out:

“It can be daunting, it takes a long time before you get that confidence and it is having the courage of your convictions isn’t it” (Bess).

Bess explained that challenging senior staff including consultants and senior nurses is difficult and you would need to know:

“You are in the right” (Bess).

She adds that although now with her experience she will challenge she felt this was not easy for junior nurses who tended to trust experienced staff. This was also highlighted by Grace who felt it would be:

“...very difficult to challenge other people” (Grace).

This aspect of challenge is discussed in more detail in section 5.5.3 below. However, as discussed this is where staff empowerment is important and where the time commitments, staff issues and work challenges can affect practice and decisions made.

5.4 Category two - Work Challenges

A theme common to all participants was the perception of the challenges working in clinical practice including challenges in practice, which was highlighted as a contributory factor in medication errors. The sub-themes included issues with skill-mix deficits, time restrictions, increased workloads and distractions, all of which was said to increase tiredness, stress and potentially their practice and the

likelihood of adapting practice and challenging others. This effect on practice was consistently seen as a problem in times of staff shortages.

5.4.1. Staffing

One challenge faced by the nurses was the low staffing highlighted by all the participants who reported that this was a consistent problem which affected patient care. This was highlighted by Claire arguing:

“If we had the right number of staff for the number of patients the pressures would not be so bad” (Claire).

Claire suggested that:

“Omissions or lack of concentration occurs because the nurses are hurrying” (Claire).

When asked why they might be hurrying Claire replied:

“Usually there are other underlying issues such as staffing” (Claire).

This need to hurry was also highlighted by Bess who when shown scenario 1 (Both nurses checked an IV but failed to check patient), suggested that it could be due to:

“Staffing, being busy, tired, and ... they may cut corners, if they are short of staff, they might not identify all of the risks” (Bess).

This potential for staff to fail to identify risks was discussed by Hope who explained that when they had staffing issues she would “encourage the team to be organised even though they were pressured” as:

“The pressure can change very quickly because of the demands of the hospital” (Bess).

Hope explained that when staffing decreased they know they are going to be busy with a high workload, and this can change very quickly, adding:

“If you have a very sick patient the pressure increases, it raises the stress levels and people (staff) get upset and communication starts to fail” (Hope).

Hope explained that when this happens staff become more anxious and rely on others more than they normally would. This staffing deficient then leads to increased workloads, lack of time, leadership, increased stress, pressure and tiredness, a potential lack of concentration and an increased risk of incidents and cutting of corners which has a direct impact on the quality of patient care. Dawn explained that:

“...if you have more people to check the drugs. That would ultimately help and make it safer.... more people to do everything by the book” (Dawn).

This link to increased staffing was supported by Claire who agreed that the staffing levels needed to be reviewed with the right number of staff being available for the numbers of patients adding:

“There are other underlying issues such as staffing whereby people are under so much pressure to do ABCD, everything, they want to do the drugs quickly and go to the next thing” (Claire)

However, it is important to recognise that just adding staff numbers into the mix may not solve the problem as other factors may compound the problems. This was highlighted by Claire who suggested that in addition to staffing numbers it was imperative that skill mix was reviewed as it was often inadequate to provide safe and effective care. Claire suggested that sometimes the skill mix may include:

“Three trained nurses, plus one HCA, you may have one regular with agency staff or one with two newly qualified nurses. The pressure is too much” (Claire).

This then resulted in an inadequate skill mix which meant wards were not always staffed with nurses who have the necessary skills for the practice area.

5.4.2. Skill mix deficiencies

A concern raised affecting the nurses practice and decisions was when there were skill-mix deficits where nurses not have the correct skills and competencies to manage the patient's complex needs. Erica reported an incident where she had checked with an agency nurse and was concerned about whether she should have checked the medication as she was unsure of her competence adding:

“We need knowledgeable staff and probably less agency because some don't seem to have the knowledge. There were no permanent nurses on the ward, they were all agency nurses” (Erica).

This was reported as an incident appropriately, however, this lack of skill was also highlighted by Jess who reported that the skill mix was often poor with increased agency and bank staff which she felt resulted in increased medication errors due to 'peoples' knowledge. Although Jess acknowledged these medication errors were not always due to the agency nurses, she felt that this was often the case. Ida was also concerned about the numbers of agency staff on the wards adding:

“They do not always have the skills, with a newly qualified nurse and four agency nurses. That person probably takes on even more stress as they have to kind of carry the people who don't usually work there, they may say, oh I am not doing the IV's, or I am not competent in doing that” (Ida).

This lack of competence then potentially increases the workload of the regular member of staff, thereby increasing the stress and pressure. Additionally, Ida explained that:

“Having a good clinical skill mix can often be overlooked as often you can have more senior members of staff on one shift than another shift and no senior members of staff... the clinical skill mix may not be right” (Ida).

The perception that this skill-mix inconsistency and increased use of agency could affect safe medication administration was supported by Claire who reported:

“These days we use so much agency, they are working as trained nurses and come in here and give medications” (Claire).

However, she added that the use of agency was a risk because:

“We don’t know their competencies, the Trust checks already so when they come to us they should be competent” (Claire).

It was interesting to note that there was generally agreed perception that the increased errors were often due to agency staff who lacked the skills, competency and knowledge of the usual departmental staff. This was seen by Hope, who suggested that even though regular staff had a responsibility to agency staff by ensuring they knew the policies and procedures:

“Most of the drug errors are from people that are not consistent staff because they are unfamiliar with our type of patients” (Hope).

This perception was also supported by the lead nurses, Jess, who felt that the problems with agency staff were often due to a lack of knowledge of the policies and because the regular staff may not have:

“...shown them what we do” (Jess).

Jess suggested that ideally, medication administration would be done by regular staff members who knew the ward processes. Jess described an error where an agency nurse was administering the tablets to take home (TTO’s) and had not understood the process. She added that there had been other omissions where the chart had not been completed which posed significant risks. However, this was not supported by all the staff. Although Tess recognised that agency use could increase the risks to medication safety if staff were unaware of policies, procedures or had not completed the correct training, she disagreed that the errors were predominantly due to agency nurses. Tess explained that even though staff would make comments like “we are fine, it is the agency workers”, this was incorrect.

Tess explained that all agency nurses were as accountable for their actions as any nurse was and would be followed up and reported to their employers if errors or poor practice were seen. Tess pointed out that,

“It’s not just the agency nurses, we have evidence that a lot of our nurses are making errors as well” (Tess).

According to Tess, there was a deficit in the leadership within the wards however the hospital had implemented work to rectify this and to help staff manage their shifts efficiently and effectively. However, newly qualified staff and staff new to the area also potentially affecting this skills balance as illustrated by Tess who explained that:

“There is quite junior staff. On some wards, we may not have the ideal leadership” (Tess).

This link to junior and NQN’s was also highlighted by several of the staff with issues such as the need for increased support and mentorship (Claire, Erica, Grace, Dawn, Lana), an inability to influence practice or deal with interruptions (Claire, Fliss, May, Grace), and difficulty challenging other senior staff (Ann, Lana, Tess), all of which potentially affects the workload for other staff and affects their ability to develop skills. Therefore, it is imperative that they have the time and support to develop their knowledge and skills. One of the issues affecting this was the multiple distractions staff encountered on a regular basis and which they felt influenced their ability to deliver effective care.

5.4.3. *Distractions and interruptions*

All the participants highlighted that they had to deal with distractions during their medication rounds. Although they recognised these as an inevitable part of nursing practice they also suggested that these could impact on patient safety by decreasing staff concentration, disrupting the medication administration process and potentially resulting in omissions and errors. This link to patient safety was recognised by Tess who, when asked ‘what do you think causes drug errors’, replied, ‘Interruptions’. Tess also felt that the interruptions had increased over the years, suggesting that this could be due to the processes in place, which were implemented such as the ‘named nurse’ as:

“You have nurses who are on our wards who may be doing the drug rounds at the same time” (Tess).

Tess explained that as each medication round lasted about an hour, three nurses were busy with medication rounds at the same time for at least an hour four times a day. This resulted in fewer nurses around to deal with other aspects of the work, such as assisting patients or responding to questions. In addition, Tess reported that the patient groups had become more ‘complex’ with:

“An increase in polypharmacy, in older people’s conditions, and their physical ability to take medications” (Tess).

She felt that the complexities and tasks involved had increased as had the risks. Another aspect increasing the risks was when nurses were discussing personal or general issues during medication preparation. Dawn, explained that when they were drawing intravenous medications (IV’s) staff often tended to chat about general things and that could be a distraction during the preparations adding:

“People come up midway when you are trying to work out your drugs and the tablets and how much fluid” (Dawn).

Lana suggested that you could lose your concentration if:

“You are distracted when someone is talking to you” (Lana).

The interruption during preparation was also described by May who highlighted that even senior staff would disturb them during the preparation of drugs adding:

“We interrupt each other and not just junior staff, senior staff, I was in the CD room...external visitors arrived onto the ward, I was drawing up a syringe driver and she was looking through the CD cupboard and she kept saying, ‘I don’t mean to interrupt you I know you are busy but” (May).

Although May requested that they wait until she had finished the medications they persevered and eventually May:

“Gave it up as a bad job, as they obviously were not listening, as they wanted to get onto other wards” (May).

The issue of senior staff interrupting was also highlighted by Claire who explained that when in charge they were at increased risk of being interrupted as:

“If you are in charge, everyone is calling you. You dispense one drug and you get called” (Claire).

Fliss suggested, that as a senior member of staff this it was inevitable, explaining that during drug administration people come and interrupt half way through administering the medications which affected the counting and the fact that staff:

“Don’t know where they are as they have already put it in the pot” (Fliss).

The risk of losing your concentration was also supported by May who explained it was easy to be distracted by interruptions and this can lead to errors:

“You are in the middle of popping the tablet in the pot, you are about to sign, and someone comes up to you and you forget to sign it” (May).

The reference to ‘someone’ included a wide range of people including patients, relatives, doctors, nurses and allied health professionals. Grace explained it was not usually junior staff interrupting as they generally only did so when something was important, it was often ‘doctors or senior nurses’ whose attitudes were that:

“Whatever they are doing or want to tell you is important” (Grace).

According to Grace one factor that impacted on the increased interruptions by patients and relatives was that the hospital visiting times had been extended. As visiting times were an appropriate time to talk with the nurse, the interruptions from this route had apparently increased. However, even when Grace explained that she was doing the medications, she found that interruptions continued as:

“They want your attention there and then” (Grace).

The problems of distractions from patients was confirmed by Bess who explained that even when wearing a ‘do not disturb’ vest they were still disturbed by patients. She added that sometimes patient’s relatives got angry when asked to look for other staff members who were helping patients to the toilet or sometimes she had

‘gone to find someone for them’ but by doing that the interruption had occurred anyway.

The fact that the relatives interrupted medication rounds when nurses are wearing tabards was confirmed by May who stated:

“I know you are wearing your tabard, but just two minutes, I want to ask you about mum” (May).

Although interruptions can be a factor in medication administration errors or omissions, it is important to recognise that interruptions are inevitable in clinical practice which is changing constantly, and nurses must be able to manage them appropriately. In this study, all the nurses could discuss the strategies for reducing interruptions which included, the ‘do not disturb’ tabards to highlight the drug round was in progress and the need to set clear expectations to reduce interruptions which were advisable but not enforceable depending on the workload and need for interaction. Although the red vests were used within the Trust Ann explained she:

“Didn’t think the red bib thing works, we have them, I don’t think it makes any difference” (Ann).

Ann explained that despite the bright colour (RED) people intended to ‘ignore it’. She added that the ones in the Trust were not as good as they could have been as:

“the writing on the back...is faded so people don’t always realise, by the time they have asked you’re distracted and you could make an error” adding, “In that moment you have lost that concentration” (Ann).

This failure to respect the message on the red bibs was supported by Claire, who added:

“You can put them on, but you can still be called” (Claire).

This meant that some nurses failed to wear the tabards, which could potentially lead to increased confusion for patients and staff especially if one nurse is using them and another isn’t. However, some nurses found them useful including Bess who explained that they:

“Are usually a sign to the professionals, you may hear someone approach you and say oh you are doing the drugs and so don’t interrupt, you will just hear them as they come in the door” (Bess).

This benefit of using the tabards was confirmed by Hope, who suggested that although the red vest can make a difference this is not always the case. Hope explained that:

“If we have not used them for a while, maybe two days without using them and I say make sure you have your red aprons on, suddenly, it’s like, oh they have their red apron so I can’t interrupt. However, then we have people who say, I know you have your red pinny on, but can I just ask you” (Hope).

Hope added that:

“It becomes like a tick box exercise, they see it all the time, and then they don’t see it. You know, when you see posters on the ward constantly and then you do not see it” (Hope).

This lack of commitment to the strategy meant that staff and patients were likely to interrupt anyway. However, when asked whether they felt they could ask the person to wait until they had finished, Bess explained that even if they asked them to wait, the damage had been done as you had already been interrupted as “your mind is taken away”.

However, it is also important to remember that if there are staffing problems and limited staff on the ward it may not be possible for others to avoid disturbing the nurse. Ann discussed this suggesting when someone wants to speak with a nurse:

“There’s not much leeway, there’s HCA, s on the ward but there’s a lot of stuff they can’t answer for visitors. A visitor wants to speak to a nurse even though the HCA could provide a lot of the information” (Ann).

Even if some nurses felt able to ask the person to wait or contact another nurse, the interruption had already occurred, and their concentration was taken away. This loss of concentration was highlighted by Claire who explained that this may

be the time when a lack of concentration may result in errors or omissions. One interesting finding was that even though nurses themselves found the distractions difficult and recognised the risks inherent in this, they would still interrupt other nurses even if they were wearing a tabard if they felt the reason for the interruption were important. This was highlighted by Erica who explained:

“If I see a nurse wearing the tabard I try not to disturb them but if they are the only nurse you can find them you must sometimes, if there were more staff on the ward, that would reduce the risk” (Erica).

This could suggest that staff are making judgement calls on the need to speak with their colleague during medication administration. However, there was also an indication that the grade and experience of the nurse may have an impact on the outcomes from interruptions as according to Claire senior nurses would be better prepared to cope with these distractions than junior staff, Claire added:

“I can deal with those disturbances, because, I know how to manage it. There are times when a senior member of staff is not on duty that’s when we have problems. If you look at the incidences when we have the major errors and serious incidences, it is when there is junior staff” (Claire).

Claire felt that this increased risk for junior staff was because it was new to them, they often found it difficult to multi-task and could also find making the decisions on what distractions to leave and which to deal with immediately more challenging. Hope explained that as an experienced nurse:

“Doing the medications, you are still conscious about what’s going on, but when you are new it is all you can do to cope with that” (Hope).

Although it is difficult to see whether the challenges and risks would differ if senior nurses had been on duty, the evidence does support the fact that distractions can impact on patient safety. This link between distractions and the impact on patient safety is especially true if the staff lack the skills to manage them in addition to their workload. This problem with the multiple distractions was adding complexity to the existing workload especially in times of low staffing or

inadequate skill mix and was clearly a problem for the participants adding to the tiredness and the perception of being busy within the department.

5.4.4. Being Busy

When looking at the scenarios, it was interesting to note that everyone felt that at least some of the issues were due to the hectic workload. All the participants reported being busy as a problem which raised the risk of medication errors. This was identified by Ann who stated:

“In a very busy ward, you’re under so much pressure, all the time, when you have so many patients” (Ann).

Claire, felt that this pressure resulted in an inability to support other nursing duties such as supporting patients with meals. While Lana suggested that contributing factors to medication errors included:

“Trying to be quick when you are busy, time delays, and lack of concentration” (Lana).

Lana argued that this then led to tiredness which affected their concentration especially when the staff were unable to have breaks during the day. One example reported by Lana was when she had been unable to go for her lunch until 16.25 even though she had started work at 7 am. However, Lana suggested that this was not an isolated case as she explained her colleague had not had lunch until 14.45 one day adding:

“It was so busy, you want to go to lunch but something happens, and we get delayed. That is the kind of pressures we deal with” (Lana).

This tiredness was also highlighted by Ann who worked long days. Ann explained that:

“If you are doing a long day, you’re quite tired by the 6 o’clock round and you must really concentrate... a shift of 11 and a half hours, is difficult especially with three drug rounds, I find the evening one the hardest, I am quite tired by that point” (Ann).

This was supported by Erica who indicated that when the ward was busy, it increased tiredness levels and impacted on risks during medication administration adding:

“99% of mistakes are caused by people being tired, too busy rushing” (Erica).

Although this was her own opinion and could be misguided, when asked what might have contributed to the omission error in the second vignette Erica stated:

“Busy ward, you haven’t got time” (Erica).

When asked if being busy was an excuse, she replied:

“No, it is not an excuse. It’s a factor, we cannot ignore when people are busy and tired, errors are going to occur” (Bess).

Erica added that this risk of errors was inevitable because:

“It’s human nature, it does not matter how much education and how many safety measures are in place, people are only human, mistakes can happen” (Erica).

This link to mistakes in the work was also discussed by Lana who felt that being busy was not an excuse because it still could result in bad practice but explained that this was inevitable at times of short staffing. Lana explained that when the ward was staffed with more agency staff than permanent staff, distractions become more frequent and workload increased. Lana added that this was especially true when agency staff were new in the department:

“Because you are the regular member of staff, you have your own 10 – 11 patients to care for, and then you get distracted. You might have to do something for them...like somebody’s PCA ...and you are the only one who can do it” (Lana).

Bess agreed that it was not an excuse but added:

“I have had times when I have been busy and had to hand over that I have not done those particular medications because I haven’t left them because the physiotherapist has taken the patient off the ward” (Bess).

One of the key issues here was the management of the workload and staffing. This was reported by Tess, who added:

“With the busyness of the ward, there is a lot of work going on. How to manage your shift efficiently and effectively, on some of the wards we have junior staff ... we may not have the ideal leadership” (Tess).

Lack of leadership was highlighted as a risk and an area for improvement by several of the participants including Tess who suggested this had been recognised by the organisation and work was progressing in the Trust to help staff manage their shifts efficiently and effectively, adding there was:

“...junior staff, on some wards, we may not have the ideal leadership on the ward to manage that effectively” (Tess).

One reason for this lack of leadership was highlighted by May who explained:

“We have been through constant change with staffing and leadership” (May).

This aspect of continual change is important as over the past five years the Trust has undergone significant changes with several senior management changes. According to May, these changes are important because the lack of leadership results in the failure of teamwork especially when working with temporary staff which she suggests is a problem because when they work within a team they get to know each other and who go to for help and advice. However, May added that when working:

“...with different people you have never met before and probably never will again you don’t have that team spirit” (May).

This then adds to the nurses perceived ‘busyness’ which is further exacerbated by the complexities within patient groups, the distractions and interruptions which took place during medication rounds and the increased workloads due to new starters or the intermittent agency staff as highlighted above. This suggests that nurses have to be able to effectively prioritise care and manage their workloads.

5.5. Category Three: Patient Safety

All participants were aware of the need for effective management of medicines for the maintenance of patient safety. Their perception was that medication errors were more likely in times of high workload, short staffing or skill mix and during busy times when cutting corners were more likely. To minimise this prioritisation of duties was highlighted as important. This was highlighted by Ida who explained that:

“Working out the priorities for that ward and drug administration is always a big priority” (Ida).

Although Claire recognised the importance of prioritising care and medications she added that when they were busy, short staffed and busy it was likely staff may miss things, adapt or rebel against the policy if it increased the time needed for the process and this was due to prioritisation of the work. This prioritising was also seen when discussing the way nurses would chose who to over trust or go one or two to give IV’s.

5.5.1. Rebellion

All the participants knew their responsibility to follow the NMC code (NMC 2015) and hospital policies, however it was apparent that there was some confusion around the policies and procedures of medications such as two people checking IVs (Lana). One factor introduced that may affect this confusion was the potential lack of knowledge and perceived, ‘lack of time’ available for staff both new and existing to read the policies. This was highlighted by Lana who explained:

“We don’t have time to read policies” (Lana).

Lana suggested this was confounded by the fact that the policies were often ‘long winded’ so that staff who were already busy were unable to sit and read them during the shifts, adding that the main point of concern was that staff made sure they knew the medication being administered and used the British National Formulary. Understanding policies and policy compliance is paramount for patient safety and policy compliance. However, Dawn found that time was not always available at work to read the policies adding:

“I read them at home in my own time” (Dawn).

Dawn added that when she had tried to read them during the shift this was prevented by the multiple distractions and interruptions and was not achievable. Dawn added that one worrying aspect was that as a newly qualified nurse she had not always known what policies were in place and therefore she only looked for a policy when she needed it such as when she was checking CD drugs stating:

“I had never actually read the policies, no one ever gives you a list of stuff for your job role, and you need to know these policies” (Dawn).

This concept of not knowing what you don’t know is important for newly qualified staff. Therefore, it is essential that all new starters have a clear understanding of the policies and expectations of the role. However even though all the participants knew that they needed to know the policies, there was clearly some confusion or avoidance to the correct procedures of the medication administration process which indicates a lack of knowledge of the policies. One example was highlighted by Grace who added:

“When we do IVs, we don’t actually both go” (Grace).

This was in response to one of the vignettes where two nurses were checking an IV. On discussion, it was identified that the Trust policy was that two nurses should do all aspects of the checking and administration, however, Grace’s perception was that this did not routinely happen and was not necessary. This resulted in confusion for Grace as can be seen when she reflected on the vignette stating:

“I am wondering if that is something we should be doing or whether that’s in there to confuse me” (Grace).

When asked how this was different to checking controlled drugs she explained that with controlled drugs both nurses go to the patient to ensure that they have given the drug to the right patient as:

“You have to be very careful but with IVs, I thought it was more about the preparation” (Grace).

However, on reflection, she pointed out that she could see why they may have to double check administration as:

“Some medications have to be given a certain way, furosemide is no quicker than 4mg per minute, I am not entirely sure everybody adheres to those things” (Grace).

When asked how she would know it was given to the right patient in the right way if she does not go to the patient Grace replied:

“Well, she doesn’t..., we do things a certain way and have always done them like that, so everybody just fits into it. People are very busy, and don’t have time to both go the patient, but it is important as any other drug, so they should both go” (Grace).

This links to the point made by Lana who discussed the fact that they did not both go to administer the IV as it was safe in other places and therefore they rebelled.

Another area where this rebellion could be seen was where nurses decided to leave tablets on the table rather than sign once the patient has taken them. This was highlighted by Fliss who added:

“Just recently I had two lots of pills brought to me in the morning, it had been left on the table from the six o’clock round. I know how busy it is at six o’clock, but you still have to do the job in a certain way, I have addressed that” (Fliss).

Lana described how:

“Sometimes you find tablets under pillows and in beds” ... I personally tend to stand over them and watch them take it but if they don’t take it I would take them away” (Lana).

She explained that often patients wanted to take their tablets with food but if the meal had not arrived she would offer biscuits or milk, so she knew they had taken them or take them away until later.

Another area highlighted in relation to the failure of nurses to follow policies and procedures was checking the patient’s identification (ID). Ann explained that often it is easier to concentrate when you know the patients rather than it being the first shift back at work after two weeks, and as she did not know the patients she was:

“Checking all the patients, which took so much longer, ... On the downside you can get too familiar, ‘blasé’, things can happen if you don’t check the patient correctly” (Ann).

When asked ‘what she felt caused medication errors’ Bess suggested this could be because some nurses may fail to check the patient’s identity. This was also discussed by May who added:

“We don’t always check the wristbands in a perfect world we should, and I do” (May).

When asked why someone may fail to check she added, that maybe they checked but not as fully as they could. May added:

“It is speed as much as everything else” (May).

It was interesting to note that even though all the nurses indicated that they would check the patients’ details they all identified failure to check ID as an increased risk of errors as well as other areas such as failure to check allergies or stop dates on the drug charts.

However, this study suggests that the staff are not actively failing to comply with the guideline, they are actively modifying or rebelling from it because their clinical experience, knowledge and judgement suggest this action is quicker, unfair or relatively safe and therefore there is an active decision to modify the procedure. It

was clear that all the nurses were aware of the need for proper patient checks and the importance of following policies and procedures however despite the inherent risks some nurses were actively making decisions on when and where these could be modified as seen with the different actions taken between the paracetamol and antibiotic and two person checking of IV's. When challenged, the nurses generally knew the procedures. It was recognised that this was an area where distractions, complacency and cutting corners could potentially cause problems and potentially lead to ward practices and putting patient safety at risk.

5.5.2. Accepted practices

The concept of accepted ward practices where staff followed established rules was introduced by Dawn who suggested:

“You go from one ward and they do it one way and then go to another and they do it differently” which is “socially acceptable in their ward” (Dawn).

The link to work practices was also discussed by Bess who argued that even though there was good training available in the hospital as nurses develop their experience some nurses will adopt practices which may not be fully compliant with the policies. Additionally, Lana suggested:

“Ward practices are like drawing up the drugs at the other end as you are busy and when you go there you cannot get someone to come and draw it up with you. If we have nurses on and one has gone to break it is difficult to get together to get the meds drawn up” (Lana).

Erica explained:

“People develop behaviour which they feel is acceptable and that behaviour is passed on, so it kind of becomes ingrained in the ward” (Erica).

Examples linked to ward practices, rebellion and decision making include the failure to double check at the time of drawing up the IVs, failure to go together to the patient, failure to complete incident reports based on risk, failure to document and leaving tablets on tables. Claire suggested that this might be “because there is

complacency and people know what is right but they put exceptions because it is accepted”.

Fliss agreed adding:

“We can become quite complacent, everyone is busy, sometimes we are short staffed... I know my patients, you know your patients” (Fliss).

Grace explained:

“...whenever I forget to do something and go back I think, I must make sure that I double check then I become a more aware of my practice” (Grace).

Grace explained that sometimes if someone makes a small mistake they could learn from them and it was

“.... kind of a good thing because it kind of re-senses me to what I am doing but if you go quite a long time between making a mistake you can become a little bit complacent” Grace).

This fact of small mistakes links to the way some errors were less important than others due to the consequences for patients. Another example given by May was where, she had made an error when she had been putting up a bag of Hartmann’s instead of a bag of saline stating:

“I checked it with the HCA, which had been normal practice for a couple of years. I had stepped outside of the guidelines as I should have had another registered nurse to check it, this would never happen again” (May).

Dawn added that sometimes if nurses have made an error which was not serious they could be unconcerned and:

“Sort of blasé about what they have done” (Dawn).

This lack of concern relating to errors was supported by Tess who described how on one occasion recently she had had to do an audit on one ward and when she entered the treatment room found all the mornings IVs drawn up in the room:

“Spread across the table” (Tess).

Tess explained that one nurse had drawn up all their IVs and then left the clinical area. She had dealt with this by asking all the staff to get together and discuss this but was surprised when their response was that

“The rooms secure, the rooms locked” (Tess).

This demonstrated that the nurses saw this as an insignificant risk and therefore modified the guideline to fit their needs and so had drawn up all IV’s instead of doing them one by one. They did not identify any risks until Tess said:

“...how do you know that I haven’t tampered with this?” (Tess)

Tess explained that the hospital had

“More work to do regarding this” stressing, “it’s not acceptable, challenging those ward cultures and bad practices can sometimes take a lot of time to embed good behaviours” (Tess).

However, even when work is on-going, there needs to be a consistent approach to ensure staff have the knowledge of the policies and understand the level of risks involved in failing to follow this good practice. It is important to ensure junior nurses are supported and given time to read and understand policies and that these factors are followed up to ensure bad ward practices are eliminated. One aspect which is paramount to achieve this is the ability for staff to challenge others when they see these poor practices and the decisions made in whether these are challenged or not.

5.5.3. Challenging Hierarchy and Peers

The ability to challenge were highlighted as an issue affecting practice as identified by Grace who found that it was:

“...very difficult to challenge other’s” (Grace).

This can also be seen by the example of Dawn when she had asked the nurse to go with her to the patient, who refused. When asked whether she had challenged this she replied:

“I have never had the guts to say to that nurse can you go through it so I always go and ask another nurse” (Dawn)

This fear of challenging was also highlighted by Bess who reported:

“Challenging senior staff can be daunting” (Bess).

Despite the call for nurses to challenge and question practice, it is not easy and strategies to help them embrace this way of developing practice is essential. This difficulty and fear of challenge were discussed by Bess who pointed out those NQN’s or new staff to areas may find challenge difficult and would usually:

“Bow to more experienced nurses” (Bess).

When asked why this would-be Bess added:

“It takes a long time before you get that confidence, it is having the courage of your convictions if you are going to challenge someone, like a consultant or senior staff you want to know you are in the right” (Bess).

Bess added that although she felt confident to challenge now, she would not have done that a few years before as a junior member of staff. May pointed out that:

“Junior staff may feel that they are unable to challenge more senior staff. We are senior, they may not have the confidence or experience. They probably don’t like conflict, or they maybe don’t want to be stepping on toes when they are new” (Bess).

This idea that challenge could cause conflict and upset colleagues was highlighted by several participants including Jess who stated:

“They see it as a criticism, the person would get upset, get in trouble. It’s changing that sort of culture of its perfectly acceptable to just question what someone is doing. It is not always I am right, and you are wrong. It is why you did it like that” (Jess).

Erica felt the failure to challenge was because they may not have had the confidence and knowledge to question suggesting:

“Some doctors get upset if you challenge their prescription writing, but I think we should all challenge. We should all say I am sorry that’s unclear I am not giving it. There could be an infinite number of reasons why she did not challenge” (Erica).

Tess explained:

“They worry if they are new to the Trust of not being liked or not be accepted into the group, it is the consequences of the challenge” (Tess).

Bess suggested this could be because of personalities where one person feels like they should not put themselves forward especially if they are newly qualified and:

“Don’t want to rock the boat” (Bess).

Additionally, NQN’s and new starters may feel vulnerable and uncertain as they start to attempt to implement learning. This vulnerability was supported by Lana who explained that often NQN’s would find challenging staff difficult as they may feel that it was:

“Disrespecting their authority or seniority and even if they are wrong they are still right, so some people do find this challenging. They (NQN’s) are vulnerable, I think you need experience behind you” (Lana).

Lana argued:

“Some people don’t like to be challenged, it does not always have to mean someone high up, you may have a feisty HCA and a weaker in character staff nurse, it is going to cause conflict” (Lana).

Grace felt that experience would help this situation and suggested that the reasons for failing to challenge included lack of confidence and lack of leadership skills, stating:

“A lot of the nurses left in charge to coordinate the ward lack leadership skills. (Grace)”

Grace explained that often with the poor clinical skill mix nurses have been experiencing, they may not have had the development opportunities to enhance

effective management and leadership skills and this could potentially leave the nurse feeling:

“overwhelmed” and “unable to handle more for that shift” ... “if they are not used to challenging and questioning people, it can be daunting, it’s easier to go along with it and get it done quickly although you should never sign for anything unless you are happy with it” (Grace).

This results in conflict with nurses who feel unable to challenge and may fear the consequences but have to comply with the NMC code and put patients first. This was highlighted by Fliss who when reading the first vignette, where one nurse fails to challenge a poor prescription, stated:

“the fact that another nurse is saying ‘I know what it says, she is going along with it, but she should be saying no I am not happy to give it and get it re-written’” (Fliss).

However, this fear of challenging was not only seen in junior nurses but in senior nurses as well. Claire, a band 6 staff deputy ward manager shared an experience where she had been worried about challenging the consultant about coming to see a patient explaining:

“It still took me to ask the matron, who said, you can do this if you are not happy”.

It was also reported to be a wider problem as identified by the lead nurse Jess who added:

“It is probably Trust wide, I think people are not comfortable with challenge and the more senior you get..., I think people are worried about upsetting colleagues and the ramifications of what that challenge might bring” (Jess).

Even though the staff found challenge difficult they recognised the value of this as identified by Jess who suggested:

“It doesn’t come naturally for some people, but I think we need to try to give people the skills challenge” (Jess).

When asked why staff may find challenge difficult, Tess added:

“...junior staff would not question somebody else, but we must encourage that. If somebody is not getting it right, you should be challenged whoever you are. There are band 5’s who have openly admitted that they don’t like challenging their colleague’s, but we are doing a lot of work to highlight the need for challenge and questioning, it’s the right thing to do” (Tess).

Conversely some of the participants would challenge even if they found it to be difficult including May who explained:

“It is about getting more people to challenge if you feel something is wrong. I thought we challenge in the Trust, if we are not happy we are encouraged to challenge, but I think it becomes through maturity and time, it is about learning to stand up for yourself and having confidence. If you are going to challenge somebody, you have to know you are in the right about that challenge” (May).

However, Grace argued that for challenge to be effective you need support. Grace reported that she had been reflecting on a previous drug error and realised that when challenging:

“You reach a point where something happens, and you realise that what you say is important and you are right. If I had gone to my manager at the time of the error she would have supported me, but I had to go through it to start to learn and be able to stand up for myself” (Grace).

This need for staff to think and take responsibility for incidents and their practice was also highlighted by Tess who explained:

“It is about that monitoring but there is something else, but in that incident of IVs being drawn up, after that little talk it’s about pulling that ward matron aside and saying this is completely unacceptable”.

Tess explained that to ensure these practices stop, staff must take ownership of these and as the matrons were accountable for their ward it was important they understand how to manage this especially as:

“It is their registration at risk, they are accountable for what goes on their ward.... staff who were not following guidance and best practice were being unprofessional” (Tess).

When considering this accountability and acting professionally it is imperative that we understand what this means to the individual practitioner and their decisions in relation to incident reporting.

5.5.4. Incident reporting

Although all the participants had undergone training and were aware of the need and process for reporting incidents it became apparent that this was dependent on the type of incident occurring. This difference was discussed with the lead nurse who was asked why she thought there may be the difference between the reporting of the paracetamol and the antibiotic replied:

“I don’t know, they are both the same, I am presuming in the nurse’s head, paracetamol is not seen as high a risk as the IV. I presume they are doing little risk assessments” (Tess).

Tess confirmed that although reporting omissions were important to identify trends:

“We do not get to know of some omissions which occur. We plug away at our partnership sessions and whatever opportunity we get, we do talk about the incidents” (Tess).

It is important to recognise that if staff are unaware or confused about policies and procedures or work around them due to perceived busyness, lack of time, short staffing and skill mix or perceived risk status, new strategies have to be employed to support the staff and to develop their knowledge and understanding of the issues to reduce the barriers which are inherent in this area of practice.

One barrier in error reporting highlighted by Tess was that staff may not want to report incidents as they feel it may get themselves or others into trouble. This was highlighted by Tess when discussing the paracetamol/antibiotic vignettes who

explained that although staff may feel ‘fed up’ with incident reporting and that fewer errors would look good in the team, the Trust:

“are doing a lot of work around the fact that it is not about getting others into trouble, trying to break that myth...incident reports are there to improve the system...” (Tess).

This feeling that staff may feel they are “getting at the nursing staff” when doing incident forms was highlighted by Erica, stating:

“People are very reluctant to do incident forms..., they think it will get others in trouble. They think its tittle-tattling but it’s not, it's raising the issues to the managers and the people who have to know so the education can be put into place” (Erica).

This perception of getting people into trouble and being reluctant to report colleagues was also discussed by May who added:

“Both (vignettes) were errors and should be reported but time is a big issue. It is also about colleague loyalty, a drug error can potentially end a nurse’s career and if someone can find out whether they have given the drug and it has not caused any harm” (May).

May added that if she was going to do an incident report for any of them it would be:

“The one for the IV as it has more effects on the septic patient” May).

This would suggest that rather than prioritising staff above patient safety they are making risk assessments based on their perception of the risk to the patient initially, then the staff and themselves before acting. When staff felt the risks to patients were very low or there was no harm then they were less likely to report the incident. Although there was a sense of compassion for the nurse involved in the error, the importance of the error and how we can learn from it was highlighted by Lana who stated:

“it is important to do an incident form as it’s a learning process, not to get someone in trouble but to reflect on practice and to make it better” (Lana).

Ida agreed, arguing reporting was not about getting others in trouble but improving practice arguing:

“It’s to highlight the problem so they can deal and solve the problem. You can pick up any pattern and look at the bigger picture”? (Ida)

Dawn agreed, adding it was important to report errors, but argued:

“It is about how you phrase it, you should tell them you are doing it, I think the worse thing is that you find out there is a report about you and no one has actually spoken to you about it” (Dawn).

However, the participants suggested that the resulting effect of reporting or failing to report errors or incidents not only affects patient safety, but the staff members as well. The effect of the drug error on the individual can affect the person’s confidence and self-esteem as highlighted by Claire who suggested that following a drug error the nurse feels like a failure.

This feeling of failure was supported by Dawn who added:

“They phoned and told me I had given the wrong thing, but it wasn’t the wrong drug, it was really a bad feeling” (Dawn).

This was also supported by several of the participants including Tess who added that failure to report incidents means that:

“You are not going to learn from it, the main point is to flag it, so you learn from it” (Tess).

Tess explained that the medication procedure included a requirement for reflection and included a useful and simple tool to use. Tess explained that following an incident the reflection was logged in their files and if they had another incident this could be taken further. Tess added that this reflection is important as:

“I think there is complacency with what we do and what we let people get away with. I think the reflection can be a useful activity” (Tess).

Tess described a previous error she had experienced whereby she gave an antibiotic to the wrong patient when two male patients were in the same bay, adding when:

“you are in a rush” adding ...” I gave it, realised, reported it, I have never done that again” (Tess).

Tess explained that errors do happen but if the person learns from it, it can be dealt with. However according to Jess, it is not enough for the individual or team to learn from the incident, it is also important to:

“Share our learning across the trust” because “we don’t share a lot of the medication incidents and some have been quite consequential” (Jess).

Jess highlighted that it was important to share all incidents including the:

“Day to day incidents... and any which have turned to serious incidents or coroners stuff” (Jess), adding:

“We don’t feed that back to other areas, it’s learning from mistakes which have happened...sharing information on what we could do differently, we have to learn from each other, you know we don’t do that well” (Jess).

However, this was not such a problem for Ida as she felt that her department was:

“Very open, we are not afraid to, because... we have a lot of respect for each other as practitioners” (Ida).

Ida also felt they could discuss any incidents or issues and was happy to complete incident forms and to say to each other:

“You have not done this? ...I have had to put an incident report in, I might say yes, I did forget, so I must remember to do it. It is honesty, we are all willing to do the same thing rather than thinking she does loads of incident reports, we do it ourselves” (Ida)

When asked what happens if the person doesn’t learn from it, Ida explained:

“If it is frequent then perhaps they need further education, perhaps support, confidence, supervision” (Ida).

Ida felt that when someone was making continual mistakes it was difficult to deal with, but as clinical lead, it was her responsibility to support them and help them learn from them. Jess also supported the use of reflection if someone had a drug error as they can see the contributing factors, the consequences and potential outcomes of the errors adding:

“That makes them think about what’s happened, that is one of the biggest things the, what if” (Jess).

When asked whether she would be confident to report she added:

“Yes, because you will speak with your manager, you will do a reflective piece, we will learn from it” (Jess).

She felt that if this open approach was mirrored across the NHS it would help to improve the safety culture that will ensure patient safety and a learning culture to ensure staff were able to develop their knowledge and skills further.

5.6. Category Four: Staff Development

One area consistently linked to the ward practices and patient safety was knowledge and competence. All staff new to the hospital were expected to complete a self-directed competency pack and a study day prior to undertaking single-handed medications. They also undertook study days on key aspects of care such as risk management and health and safety as well as the clinical aspects. There were also annual updates for all staff which reiterated these aspects to enhance patient safety. However, there were variations in the experiences of staff in this area of practice.

5.6.1. Competency

Within the hospital, the competency framework for medication administration included the completion of a single-handed medication administration pack, an IV competency pack and a medication administration study day. All the staff had completed the hospital's drug administration study day and competency packs. This can be seen by Claire who when asked about her training and competency in medication administration replied:

“When I started here I had to do my drug administration and IVs. I worked with a mentor and did not take me long, I was assessed as competent, I have always been reading about my drugs when I am unclear and reading the BNF” (Claire).

Fliss had also completed the competency pack and study day but added that her training had been:

“10 -15 years ago, longer than that probably” (Fliss).

When asked how she maintained her competence she added:

“We attend study days and keep up to date on the ward because you do them regularly” (Fliss).

This method of updating on medication administration was supported by Lana who had completed her drug competency and training during her initial pre-registration training when she had been assessed and a study day and competency to do when she started in the hospital, adding that she maintained her competence from:

“Working day to day ...every medication we give, we do not give unless we have looked it up in the BNF or we know what we are doing. That is working with experience and learning from the patient care and the medication we give” (Lana).

Even though learning from experience is important, it is also essential to recognise that there are potential problems with this approach. The reported lack of time, resources, work practices and resulting cultural issues highlighted above implies that this learning from experience can be out of date, ineffective or even cause

nurses to learn poor practices. This would potentially lead to a lack of competence and confidence which then has the potential to lead to reduced patient safety. Claire, an experienced nurse, suggested the causes of medication errors included:

“A lack of competence” ... Some people who make drug errors have not been in practice long, they are not competent or maybe they have come from another trust and they are not competent” (Claire).

Claire described one example of a newly qualified nurse who had not completed the hospital competency explaining that she:

“Had a competency pack and sat with the person on the first day but had not been assessed as competent” (Claire).

Claire explained that the nurse had previously worked in another organisation, but this was her first acute ward. Despite the previous role she had never previously had a drug assessment even though she was working independently. After about eight weeks an error occurred, and Claire felt that this was because the nurse had “dropped through because she was not supported”. When asked why she had not had the support Claire added:

“She did not have preceptorship, it is not mandatory. It is to help the transition through from student to staff nurse but this nurse, without preceptorship, comes to an acute area, no assessment of drugs admin oral or IV, I don’t know whether other people are slipping through the net like that” (Claire).

Although Claire was unsure of others who may have been experiencing problems like this, the lack of support and initial training was also highlighted by Grace who explained that when she started she had completed the study day but did not feel that she had had as much training as she needed compared, to her previous Trust, which included an additional day to do IVs, calculations as well as practice observations and assessments to check competence adding:

“You don’t seem to do as you do it on the ward here, which I found a bit strange, but I had recently done the study day in my previous trust so was ok” (Grace).

This was a surprising comment as the Trust had a self-directed competency pack for all new starters which should have been completed with the support of a mentor. Within this, there was an expectation of supervised practices, a final assessment needing to be completed and a medication administration study day which should have been completed when the nurse started at the Trust.

When asked whether she felt staff had sufficient knowledge of medications Lana replied?

“Not the junior ones, it’s only because I have been here for such a long time and I know”. (Lana).

Lana explained that it was important to help junior nurses develop the skills:

“Making sure, when they are new we go with them, we do that anyway and go with them to do drug rounds..., they know what they are doing, it is just with experience isn’t it” (Lana).

This was also supported by Ida who added that not all NQN’s have exposure to many drug rounds during training and:

“suddenly six weeks after qualification they are doing it on their own, ...it is having a good mentor at the beginning, so they can suss that person out, working with them” (Ida).

The exposure to many medications rounds both during training and when initially qualified is important to ensure the nurse can develop the knowledge and skills needed for safe practice, however, the inability to practice is likely to affect the nurse’s competence and knowledge and therefore patient safety. This was supported by Ida, who when asked how this affected safety explained that medication errors were due to this ‘lack of knowledge’ they may:

“not be looking up a drug, because it is prescribed, taking it as gospel, lack of knowledge of pharmacological, pharma-kinetics and how they work, not knowing the patient, or the patient's and not understanding how different drugs are delivered” (Ida).

All NQN's have a preceptorship period under the direction of the mentor where they complete the competency. However, this also depends on the skills and knowledge of the mentor, new nurse and the time and resources available. This was supported by May who suggested that it was easy to 'do a couple of drug rounds' with a newly qualified nurse and:

"Say yes your fine to do it, because they want another nurse to do the drugs, we get that person signed off because we don't have enough nurses" (May).

However, Ida also suggested that this process was problematic as you would ascertain whether the nurses were questioned effectively on their drug knowledge during the competency completion to identify the nurse's knowledge on the drug and whether they knew about:

"The side effects, what happens if we overdose, what happens if it's given at the wrong time, what happens if we give dalteparin at 4pm and you give it at 9pm, how is that going to affect the patient" (Ida)

Ida added:

"Sometimes the person who's doing the competency hasn't got the knowledge to share, I don't know there are so many reasons and variables why" (Ida).

However, Dawn felt that although she needed support to develop her confidence although she felt that as NQN's they had a good knowledge and understanding of medications and administration already as they had:

"Quite a lot of training on drug administration stating" "We did a lot of competencies, six each placement and one focused on medications which makes it a lot more competent when you are qualified" (Dawn).

Nevertheless, when asked what effects safe medication administration Dawn added that it was clinical knowledge, skills and confidence adding that she felt her inexperience could make her over check the medications as it was a new skill giving medications alone adding:

“I am more worried about making mistakes, I never made one before”
(Dawn).

However, although she recognised this in herself, her perception of other NQN’s differed as she felt:

“they seem much more blasé about it, I think it can go either way in terms of your experience, the department, skill mix, level of care, patients, dependency, how busy you are, and the support you have from management in terms of medicines” (Dawn).

When asked, what could enhance medication safety Dawn suggested that the key to this was the need for an increase in the training from the time nurses join the trust especially for NQN’s as:

“Drugs are a massive thing because you are watched for three years and suddenly you are on your own” (Dawn).

Dawn suggested two aspects that could make a difference in addition to the support which was that the Trust had a:

“More comprehensive package than we have now, being observed more times because there were only a few times I had to be observed but I made my own list to be observed more for my own confidence” (Dawn).

Secondly, she suggested that although having the immediate training makes a difference to the individual, having updates would:

“make a huge difference because some nurses were taught 20 years ago: I hear them say, I do this but it might be different now, they may be drawing up IVs and I don’t know when they change the needle or how long they clean with the sterile wipe, they say I do it like this, it was 20 years ago”
(Dawn).

This situation of experience and the fact that their skills may be out of date was also highlighted by Bess who argued that as you gain experience:

“You pick up bad habits, which the nurses take with them and other nurses follow” (Bess).

Bess argued that although newer nurses will be more up to date with procedure and protocols because they have just come from training, the experienced nurses may have been out of training for a while and therefore there may have been changes to which they were unaware of. Therefore, supervision and training are essential in helping staff to develop their knowledge and skills to enable them to make good decisions in their practice for all levels of staff.

5.6.2. Staff support

One of the key issues identified by the participants was the support given during the induction period for staff new to the Trust. When asked what support Dawn had received when she started on the ward she explained that:

“You got quite a lot of support for the first couple of days and then people forgot you have not done it before” (Dawn).

She explained that initially there was a lot of support, so you felt that you were developing the skills however, after a couple of weeks, the staff tended to ‘forget’ that she was new, and she had to keep reminding them. This then affected her experience and confidence especially as she had not finished her package at this point and some nurses had refused to come with her to check as policy dictated. Dawn explained:

“I haven’t finished my package, but some nurse will look at my fluids, sign, and go and I say can you watch, as I am not confident with this pump and some will say just do it or they will go and do it themselves” (Dawn).

This lack of support resulted in times when Dawn was identified as ‘competent’ even though she herself did not feel confident or alternately nurses deciding to do it themselves, as it was quicker. However, this then had a knock-on effect for Dawn and her confidence and skill development in this area of practice. This was also not an isolated case as identified by another band five nurse Grace explained:

“You had to complete the competency, we used to have an education nurse who worked between two wards, she was really supportive, but you would have times when the ward was too busy to do it” (Grace).

Grace added that when she was first learning to care for patients with Nasogastric (NG) medications there were times when staff were not available to help, and suggest that she was competent to give it herself saying:

“You have flushed a peg which makes you competent to put NG meds down” (Grace).

Grace found this difficult as she had limited experience of this and felt that she lacked support, which she felt was due to a lack of knowledge from the educators and the lack of time from the ward staff. This had an adverse effect on Grace as she felt it had been her fault that the patient’s medications were delayed explaining:

“It was not a very nice feeling even though I tried to ask for help, they weren’t around anyway to help me” (Grace).

This experience meant that she tried to be more supportive to other new starters as:

“to be made to think it was my fault when they had not provided me with any time or training on how to give medications in that way” (Grace).

This link to being busy and lack of time with the mentor was also supported by Dawn who added:

“You get allocated a mentor, but you don’t work with them, I think we worked together twice in a four-month period” (Dawn).

This inability to work with the mentor or the person providing support during the initial stage of a nurse’s career is a concern as it is when the newly qualified nurse develops her knowledge and skills and practices and likely to be a time when they are the most vulnerable to adopting practices which they observe from others, both good and bad. One reason for this lack of support was highlighted by Fliss who reported the mentor was “very busy” looking after her patients, adding:

“They are looking after their patient/workload, they do 12-hour shifts, so where in the day have they got an excess of time to go off with their student where they can say right what about this” (Fliss).

However, this busyness was not a new problem, Grace explained that they often lack time to work with junior staff or students and often work in their own time to complete paperwork as time was not allocated within the shift adding:

“We are staffed to look after the patient, the only consideration of writing the rota is that the skill mix is right to look after the patient” (Grace).

Ida added that sometimes new nurses are used as a pair of hands rather than supported effectively due to staff shortages. Ida explained that it was about the mentor working with the person rather than seeing them as an extra pair of hands and putting them to work with the HCA pointing out:

“They say go and do those washes, but you are always going to have staff shortages. It is working out the priorities for that ward, and the learner” (Ida).

Hope explained that the effectiveness of mentorship or preceptorship is dependent on the person being mentored as all learners are different, from the student to the overseas nurses and although:

“Mostly we have time as mentors, sometimes we struggle. You do a drug round with one person and they get it, but another person takes longer, we are all different. ...It’s their confidence”. (Hope).

Another factor highlighted as problematic was the support for the existing staff to develop their own skills, May explained:

“That’s partly why I am leaving, because you see all the new people come on and they get all this training and support thrown at them and you are still struggling along” (May).

May gave an analogy that it was as if:

“you are like that little plant which no-one waters until you kick off and then people start to take notice of you and sort of pat you down, give you a drink and you are shoved into that corner again. I think people forget those of us that have been here a long time and actually are the mainstay of the ward” (May).

In addition to the support, training, skills of the mentor and time available for training and support Jess add that the training and development of staff are dependent on the way the training is delivered as:

“We have a lot of people in the trust who... completed their competencies a long time ago, it is about ensuring ourselves of the information they are putting out to others and understanding that information is being understood by all parties really” (Jess).

A good example of how this development could be more effective was highlighted by Grace who explained:

“I want to work alongside my nurses, I know the standard I want, and I know that the nurses know what I want” (Grace).

Grace explained that often she would observe the practices of her experienced nurses to ensure that their practices were as she expected, and “She had made her expectations clear” as to the training delivery. However, when asked whether she felt all her nurses teaching this skill do the same she replied:

“They should but only those mentored by me because if someone has been mentoring somewhere else, unless you watch them you would not know” (Grace).

Grace suggested that it was important all staff knew the standards and that there should be an agreed process as people do things differently which could adversely affect the development of the staff adding:

“even if I follow the policy and you follow the policy we might do the drugs differently, therefore maybe it is just laying out that standard, that’s how we want it done and everyone must do it that way” (Grace).

This notion to how different people may interpret the procedure differently is an interesting idea. The policy dictates a clear process from checking the drug with the chart through to administration. Therefore, it is interesting to note that the nurses feel that they ‘may do it differently’ but still adhere to the policy and then teach this to other nurses who may have several members of staff who are showing them the process. When discussing this with the lead nurse (Tess) she explained:

“It is interesting, but I think of other things like basic things like bed bathing, it’s questionable whether our nurses have the skills to train an individual they may have their mentorship, but it is arguable as to what training and support they have had” (Tess).

However, it is important to recognise that it is not just one issue which affects the implementation of best practice, but many interrelated issues as discussed above. Even when staff have had training and understand the policies, guidelines and best practice it can still be inconsistent and is based on the decisions made by staff when they are working in challenging environments. The policies, guidelines and research provide good evidence on how these can be minimised, but problems remain.

5.7 Conclusion

These findings indicate that nurses make decisions based on their level of experience, knowledge of the situation and the power they have to make decisions, as well as the likelihood that this will be worth doing and will not harm patients, themselves or colleagues. Several areas were highlighted which can potentially affect the decisions nurses make and prevent the implementation of best practice and learning. This is important as decision making was identified as the core theme and was a key factor in all of the categories. Participants highlighted that decision making is the way nurses use their learning, knowledge and experience to assess and action their judgements in practice regarding the evidence. Several aspects which were important when making these decisions are - whether to report an incident, follow policy, time, trust, and the power to act as well as whether the challenge was needed and the level of experience someone had. Several methods were highlighted by the study participant’s which may help to reduce medication

errors including increased training into medication errors and medication administration, time to read policies and undertake continuing professional development as well as the use of reflection to aid knowledge development. However before suggesting the way forward it is important to discuss these findings in more depth to place the findings into the current evidence base.

This chapter discussed the findings generated by the participants in relation to why practices in medication administrations may not always follow evidence-based or best practice. The chapter outlines the resulting themes generated from the constant comparison using the ‘voice’ of the participants. It is hoped that the raw data introduced appropriately highlights the choice of the four categories and the core category of decision making. It outlines the views of the participants on practices and the challenges of administering medications as well as the knowledge the nurses had from their training, development and experience.

Chapter 6: Discussion

6.1. Introduction

The data from this study confirms that despite the wealth of initiatives implemented to improve medication administration within the NHS and across the world, implementing best practice in this area continues to be a challenge. In relation to the evidence discussed in the literature review the reasons for these challenges are complex and often interrelated. However, this study suggests that it is more complex than a lack of time, staffing or skill mix but is based on a complex decision-making process which may often be made fast and unconsciously. This decision-making process includes an immediate risk assessment made at the time of a dilemma which is based on the level of risk and harm to the patient, themselves and others as well as the level of harm. It is further complicated by the nurse's perception of the 'trust' she has in relation to the actions, the fairness of it as well as the power to act.

This chapter will discuss these findings in relation to the resulting theory developed through this Grounded Theory study and the contemporary literature. It will outline the categories developed and the key concepts which were identified as important in this theory development. This includes the concepts of trust, power and moral courage. It will also introduce the theory which developed through this Grounded Theory study which led to the identification of decision making as the core category.

6.2. Core category - Decision Making

Decision making is the way nurses use their knowledge and experience to assess and action their judgements in practice. There were several factors identified as important in this study by the participants when making decisions including the workload, the culture, when to report incidents or adapt the policy guidelines, or when it was safe or necessary to challenge or to adopt the expected practices. The participants agreed that this decision making was said to be due to their personal experience and their professional judgements. This experience was not only based on the professional experience but also on their beliefs including the aspect of whether the nurses felt this was fair or not and the awareness of whether others

were doing the practice differently such as single handed administration which was suggested as a reason why staff may rebel and not go in pairs to the patient despite this being part of the policy or may fail to check the patients identification. This was also seen earlier in the work of Dougherty, Sque and Crouch (2011) whose study into nurse's decision making showed a failure to check the patient's identification as policy dictated, as they 'knew the patient'. So why do nurses make these decisions even when they know the expected risks?

Carr (2005 p.334), argues that the nursing professionals draw on 'multiple forms of knowledge' developed from the practice context, culture, organisational structures, level of education and experiential learning. This knowledge develops from several areas including explicit knowledge as in the written, codified knowledge, such as scientific knowledge, or tacit judgements ('know how') which is based on previous knowledge and experience and can be difficult to explain (Kotharil et al, 2012). This knowledge includes several aspects of knowing such as personal and professional skills, experience, values and beliefs, emotions, insights and intuition. These aspects are then combined to further knowledge and the person chooses to act depending on the situation and available likely options (Traynor, Boland and Buus, 2010b). This links closely to the findings of Carper (1978) who developed her four fundamental patterns of knowing which she identified as

- Empirics – the science of nursing,
- Ethics - the art of nursing,
- The personal knowledge and
- Ethics – the moral knowledge in nursing (Carper, 1978).

Rolfe, Freshwater and Jasper (2001 p3) suggests that knowledge is a 'justified true belief' and that therefore for it to be knowledge the person must 'believe' it. This can be seen in the case of the paracetamol and antibiotic vignettes as they assessed the level of harm which could have arisen if the patient had missed a dose. The justified belief here could potentially be that there is no perceived harm to the patient with a missed paracetamol, time is short and so minimal benefit can come from reporting the incident especially if this was the beliefs of others in the team. Rolfe, Freshwater and Jasper (2001 p3) explain that we are all individuals and

come from different perspectives and therefore we see things differently however, we all want to fit in to our environments. They suggest that because of this, the collective society decides what is true for us. In terms of nursing, this includes the knowledge of policies, training, past experiences and values as well as the culture in the department. Rodgers (2005) agreed, suggesting that nursing knowledge is passed from nurse to nurse through preceptorship and the learning which takes place in the working environment. This results in knowledge which is passed down and dependent on the nurses in the departments and their own knowledge. However as pointed out by Tess and Grace this may include different approaches or understanding of policies or education, different abilities to teach and understanding that not all nurses have the same knowledge or skill. This is important as identified Throughout this study, the concept of insufficient time, and staffing, skill mix and busyness have consistently been highlighted as a rationale for 'cutting corners' and failing to follow policy or report incidents if they were perceived as an 'insignificant risk' however later when looking at the training for education administration this was contradicted when Bess replied that:

“The Training is good... but as you get more experienced then perhaps you pick up bad habits”.

Dawn suggested that nurses may recognise they may not have all the up to date knowledge. There were also the feelings of being let down and forgotten in favour of new staff in regard to training and one reason she was leaving the Trust (May).

This issue of personal knowledge is important, especially for the newly qualified nurses. When a new starter joins a clinical team, they enter with their own personal, professional knowledge and skills as well as their values and beliefs. Their initial perceptions are analysed, internalised and the decision-making process continues to evolve. At this time Dougherty, Sque and Crouch (2011) argue, nurses may make clinical decisions on using heuristics such as overconfidence, anchoring, hindsight bias and pattern recognition. One example of overconfidence highlighted by Dougherty, Sque and Crouch (2011) is when they assume it is the correct patient and therefore they fail to use the safe standards such as checking the patient identification correctly. Anchoring is concerned with them continuing with their

initial idea or 'hypothesis', that it is the correct drug or dose despite something indicating this may be incorrect, for example another nurse questioning. Hindsight bias occurs by predicting the outcome from previous experience such as a medication error while pattern matching is making a decision based on a few critical pieces of information which encourage the nurse to consider things which had worked in the past (Dougherty, Sque and Crouch, 2011). This links closely to Fishbein and Ajzen's (1980) theory of reasoned action which suggests that individual's make decisions on behaviours which they may choose to adopt or not. Their model suggests that background factors such as personality, emotion, values, education and information could be some of the factors which can affect whether someone would take on a behaviour. The individuals behavioural, normative and control beliefs are considered internally before identifying the perceived behaviour which can be seen in relation to a perceived change. This included three aspects, behaviour beliefs, normative beliefs and control beliefs.

The impact of behavioural beliefs is where if nurses felt documentation was not important and perceived they had insufficient staff to deal with the workload then documentation would potentially be left. Another example is where the nurse feels a procedure is unfair because others do it differently and therefore they rebel against it as highlighted earlier in relation to the IV. This rebellion is an interesting concept. An example of this could be seen when the staff knew that the correct process for the omitted paracetamol was completing an incident form but for a multitude of reasons decided not to.

The second of the beliefs is normative. This belief type focuses on the fact of the 'way we always do it here'. This type of belief system can be seen within the participant's responses in the way they described the work practices and how they became complacent with things like both going to patients to administer IVs. The third belief system of control was also seen within the participant's responses when they discussed the fact that some things could not change as there was limited time or in the case of the red vests, no point, as it would not work. This was especially true if the nurse in question had personal experience of what she felt was unfair or a risk to themselves or others. In fact, Traynor, Boland and Buus (2010a) suggested that this personal experience was the final influence of decision making. Hedberg

and Satterlund (2004), suggests that decision making is dependent on three things, the person making the decisions, the task and the setting itself. However, it is important to recognise that the process of decision making can result in problems for the nurse especially if the nurse's views conflict with the recognised process. This is important as Voldbjerg et al (2015) suggests that for the newly qualified nurse this involves two sources of knowledge including themselves and others (senior staff, mentors) with a heavier reliance on others during the early part of their progression. This may be why junior nurses may be reluctant to challenge or adopt the ward practices.

This is important when situations arise where nurses believe they know the correct action to take in a situation but because of fear or the need to conform they can't, which then results in moral or ethical distress (Wojtowicz, Hagen and Daalen-Smith 2014). This includes failure to follow policy such as double-checking IVs or failure to report incidents because they do not want to 'get someone into trouble'. It would also include when nurses are expected to conform, or if they are as in Dawns case expected to complete tasks, they feel unready for. Wojtowicz, Hagen and Daalen-Smith (2014) suggest that this increase in moral distress can often be because of staff especially junior nurses fearing reprisals or upsetting staff. One example of this was highlighted earlier in the study by Bess when discussing the difficulty in challenging others. It is also the inability to complete work effectively due to low staffing numbers and high workloads (Cummings, 2010, Crane, Bayle-smith and Cartmill, 2013). De Veer et al (2013) agreed suggesting high moral distress levels were seen when nurses perceived that they had less time for patient care. Lipscombe and Snelling (2010) referred to this as 'value dissonance', which, they argue is where two or more values comes into conflict and ultimately causes distress as in the case of the participants who were unable to challenge or faced with practices they feel to be wrong.

This was based on the earlier work by Festinger (1957) on cognitive dissonance which argues that it occurs when conflicting demands are at odds with the person's beliefs or values. De Vries and Timmins (2015) explain that this occurs when someone has inconsistencies between their expected behaviour and their views at which point they become disturbed and want to change it to fit their own values.

The decisions made here can ultimately affect the team and the professional identity of the individual.

6.2.1. Professional Identity

Like decision-making, the concept of professional identity runs throughout these findings and is key to decision making. Fagermoen (1997 p.435) defines professional identity as “the values and beliefs held by the nurse that guide her/his thinking, actions and interaction”. The NMC code (NMC, 2015 p.15) states that the nurse must always:

- Uphold the reputation of the profession
- Display a personal commitment to the standards of practice and behaviour in the Code.
- Be a model of integrity and leadership for others to aspire to.

One aspect which helps to promote this identity is the autonomous nature of nursing whereby nurses practice within their own level of expertise and competence if they can justify their actions. The RCN (2016) suggests autonomy is the ability to make your own decisions based on knowledge. However, when asked what autonomy meant to them several nurses were not able to clearly articulate it. There was also an indication that staff felt that autonomy was not always seen in practice and was a tick box exercise with staff unwilling to take responsibility and practices being policy driven rather than patient driven.

When considering this accountability and acting professionally it is imperative that we understand what this means to the individual practitioner. According to the NMC (2015) professionalism is concerned with acting within the code by following the four principals - prioritising people, practice effectively, preserve safety and promote professionalism and Trust. The NMC code (2015) stipulates that the nurse needs to be a model of integrity and provide leadership for others upholding the reputation of the profession as well as raising concerns immediately. However as already highlighted if a nurse does not recognise something as a concern (paracetamol) it is unlikely to be reported. This concern was supported by Bunkenborg et al (2013) who when looking at the monitoring of vital signs found that clinical monitoring of vital observations in hospitals

varied between nurses depending on the levels of professionalism. Although Bunkenborg's study is looking at vital signs instead of medication administrations its relevance is in the fact of the links between the nurse's knowledge and levels of professionalism. Bunkenborg et al (2013) found that in areas of heavy workload and insufficient clinical knowledge there was a potential for nurses abandoning bedside measurements, hence delaying bedside recognition. Although this study on medication administration has a different focus, the principals of the heavy workload and knowledge may have a similar effect as the case of the nurse in a heavy workload failing to check patients IVs at the bedside or leaving medications on the tables which, has the potential to lead to nurses failing to report the errors and ward practices to develop.

To understand the impact of the professional identity it is important to understand how autonomy forms. Like knowledge nurses develop their professional identity through personal and professional education, experiences and knowledge which can start before starting nurse training (Johnson et al, 2012, Maranon and Pera, 2015). Johnson et al (2012) argues that the way nurses feel about themselves, their competence and professional selves is essential to effective practice and is dependent on socialisation. One of the most important times for this development is during the transition from student nurse to qualified nurse. Indeed, Traynor and Buus (2016) argue that the socialisation into nursing at the time of graduation is problematic and that although they start with high values these can easily be lost as they work in the profession. They add that often NQN's and students will identify what they believe are good or bad nurses and align their behaviours to the good ones. This then results in the team splitting into distinct groups with differing values or behaviours as seen in Dawn's case where she lost trust in the nurse or where certain practices become the norm, especially when the nurse had the perception they were powerless to act.

6.2.2. Power

Power to act was highlighted by the participants as important for empowerment and to be able to challenge practices. Coleman and Earley (2005) identify two levels of power, the 'power to' achieve the objective and 'power over' others which will enable the nurse to influence others either positively or negatively.

However, there was one other aspect of power which was clear in this study, being powerless. These concepts are presented in table 15 (p191).

This study suggests that when deciding any course of action, the nurse weighs up the decision, considers the effect of her actions on herself, patients and other team members and then acts depending on her previous experiences and knowledge as well as their personal and professional values and whether they have the power to act.

TABLE 15: POWER BASE

Power Base	
Power to	Ability or capacity to achieve objective - increased job satisfaction
Power over	Ability or capacity to influence behaviour of others – lateral violence
Powerless	Inability to achieve objective or influence others - ineffectual – reduced job satisfaction
Adapted from Coleman and Earley (2005)	

It is interesting to note that this weighing up often happens quickly and sometimes without conscious thought. This power to act links closely to the level of autonomy the practitioner has, or the ability to make their own decisions (RCN 2016). Varjus, Leino-Kilpi and Suominen (2011) suggested that professional autonomy is an essential element of the professional status. Professional autonomy is concerned with enabling nurses to have control over their professional practice (MacDonald 2002). This was highlighted by Ida who suggested that although the nurse had to take ownership often this was not possible, and they often felt powerless to act. Powerlessness is where staff believe they have no way of making a difference. This link between the concept of power and the ability to act was highlighted by Dawn who said that safe medication administration was affected by your clinical knowledge, skills and confidence as well as the support from others.

Other participants including Fliss agreed that the power to act depended on the situation, staffing levels and by the experience of the staff, adding that if the staff felt unable to influence practice then ward practices and staff who become ‘blasé’ and guilty about their practice would increase. It was interesting to note that even senior nurses believed they had limited power to act and affect change in practice. This importance on the power to act supports earlier work which found that nurses

who are empowered enjoy their work more and enhances the quality of care for patients (Ning et al, 2009, DeVivo et al, 2013). However, this empowerment and the ability to change or challenge practice is dependent on the nurse's values and beliefs and is not always felt by the nurses. What is clear is that nurses need to be able to develop their moral courage and their willingness to stand up and challenge the ward practices and as outlined by Asher (2006) report incidents to ensure actions can be taken. However, to do they need to develop the skill of moral sensitivity including the ability to make moral judgements, and the character and motivation to ensure that the correct actions are completed with moral courage and a willingness to stand up and challenge when needed. However, one aspect which can affect this is Trust:

6.2.3. To Trust or Over-trust

One element discussed by the participants was the fact that they needed to trust each other in clinical practice. Trust is defined as an "individual's confidence in another person's intentions and motives and the sincerity of the person's word (Farrell, 2002, p.21), or alternatively as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviours of another" (Rousseau et al, 1998, p.395). Farrell (2002) suggests that Trust is the mechanism through which relationships are developed and that these relationships are the way that organisations manage their work. Dinc and Gastman (2012 p.223) completed a literature review looking at Trust and trustworthiness in nursing. They suggested that trust was characterised as "an attitude relying on confidence in someone" with the basic attributes seeing trust as a process, with reliance on others, risk and fragility.

This link to the trust and fragility could be seen in the case of Dawn who was unable to challenge the nurse who 'over-trusted' them to give the IV's. McCabe and Sambrook (2014) looked at the trust between nurse managers and their staff. This interpretive study found that trust is usually developed within the ward environment and is influenced by the manager. They also found that professionalism and commitment to the profession was an influencing factor which formed the basis for teamwork, delegation, and support based on Trust. This could be seen by the effective team work discussed by Erica who had no concerns

reporting incidents as her team were able to discuss and learn from them. The need and value of trust within teams in health care is important. However, when the trust is miss-placed or unsafe it raises the risks in practice.

The increased risk due to mistrust was supported by Treiber and Jones (2012) who provided a description of a participant who stated that one reason for medication errors was there was too much confidence in colleagues. Treiber and Jones (2010) also reported on one participant who had made a mistake with IVs as she complied with her managers orders, all of which was supported by this study. This link to nurses doing as the senior nurse wants was also supported by Reid-Searl, Moxham and Happell (2012 P. 229) who completed a Grounded Theory study looking at the importance of direct supervision for nursing students administering medications. One example given was that the student had been with an RN and administered medications which she had not prepared or checked herself because she trusted the RN.

When exploring the literature it became clear that despite a wealth of evidence exploring trust between staff and patients, there was little in-depth evidence regarding the effect of Trust between nursing staff except in the wider organisational context of management. Keers et al (2013) completed a systematic review and identified five studies which mentioned trust including the three studies above (Reid-Searl, Moxham and Happell, 2012 and Treiber and Jones (2010, 2012). Understanding how this 'trust', affects decision-making is important. However, it was difficult for the author to locate evidence discussing this apart from Keers et al (2013) who suggested the evidence was superficially reported. This lack of information could potentially make it difficult for readers to identify this 'trust' or 'over trust as an issue in practice, especially as Trust is something which is essential in nursing teams.

Pask (1995) argues that from childhood we rely on others and as nurses, team work is essential, trusting and relying on each other. Indeed, Laschinger et al (2000) argued that without trust people will not be able to work together effectively and therefore trust is essential for implementing change. However, it is when there are continual changes, staff shortages or high workloads that this trust can become a

problem. This was highlighted by Bess who pointed out that when they were busy they:

“Probably trust each other more than we would do if we are not so busy”.

One piece of evidence which would support this was highlighted by Bok (Cited in Baier, 1986) which states “Whatever matters to human beings, trust is the atmosphere in which it thrives” adding that “not all the things that thrive when there is trust between people and which matter, should be encouraged to thrive”.

This idea that not all trust is good can be seen in the case of the unsafe trust highlighted when leaving others to administer IVs when policies indicated it needed two nurses or the checking of IV’s already drawn up. Although the participants agreed that it was important to trust each other they also agreed that a combination of low staffing and increased workloads influenced this practice and therefore the nurses may cut corners especially if the nurse ‘trusted’ her colleague. This was also discussed by several participants including Claire who when asked why this may happen explained that it may be because they trust each other to do it right and because of the relationships.

When looking at why nurses trust this way if it potentially affects patient's care resulting reasons included that as a new nurse they needed to Trust the senior staff, they were busy, workload and to help the team. However, if staff are choosing to trust based on workload and staffing they were more likely to rely on others unsafely leading to increased risks to patient safety and increased pressure and stress for staff.

The other aspect highlighted by the staff was mistrust. Dinc and Gastmans (2012), suggest trust involves risk because as they suggest the person trusting believes that the person being trusted will be trustworthy. However, they add that this may not always be the case either because they are not committed to the situation or because they lack competence and that if someone has a negative experience the trust breaks and can be replaced by mistrust as seen in the case of Dawn and the nurse who would not observe her practice.

Both Trust and mistrust is based on personal and professional experience and as discussed is a firm belief based on knowledge and evidence. Usually there is evidence through experience which staff use to make these judgements, although it can also be based on first impressions. With mistrust, there is the perceived failure to trust usually due to past experiences. Over-trust of the other person, is accepting the ‘truth’ without any evidence which then becomes a problem. Trust is essential in nursing however, nurses need to understand the concept of trust and how it manifests in their teams to prevent the ‘over-trust’ which will affect patient safety but also, so they know when to challenge practice, and manage mistrust. The effects of trust such as mistrust or over-trust and how this affects whether to act, challenge or avoid someone can be seen in table 16 (p195).

TABLE 16: LEVELS OF TRUST

Effect of the ‘levels of trust’ on practice			
Levels of Trust identified by participants	Action ↓	Challenge ↓	Avoidance ↓
Trust	Y	Y	N
Overtrust	Y	N	N
Mistrust	N	N	Y

Trust is important to ensure that staff can develop safe patient care and feel empowered to enhance the working environment and culture. However, even though lack of staffing, time, resources and training affect patient safety this is also dependent on decision making which is also affected by the concepts or trust, power and moral dilemma. Figure 11 p196 demonstrates how these concepts (Trust, power and moral dilemma) affects decision making.

One method to enhance the decision-making process is to introduce development opportunities using the hindsight bias. As illustrated earlier this predicts the outcome from previous experience, training and support to guide the decision making and develop the nurse's experience. It could be useful in empowering junior nurses to challenge and the development of effective leadership within the hospital.

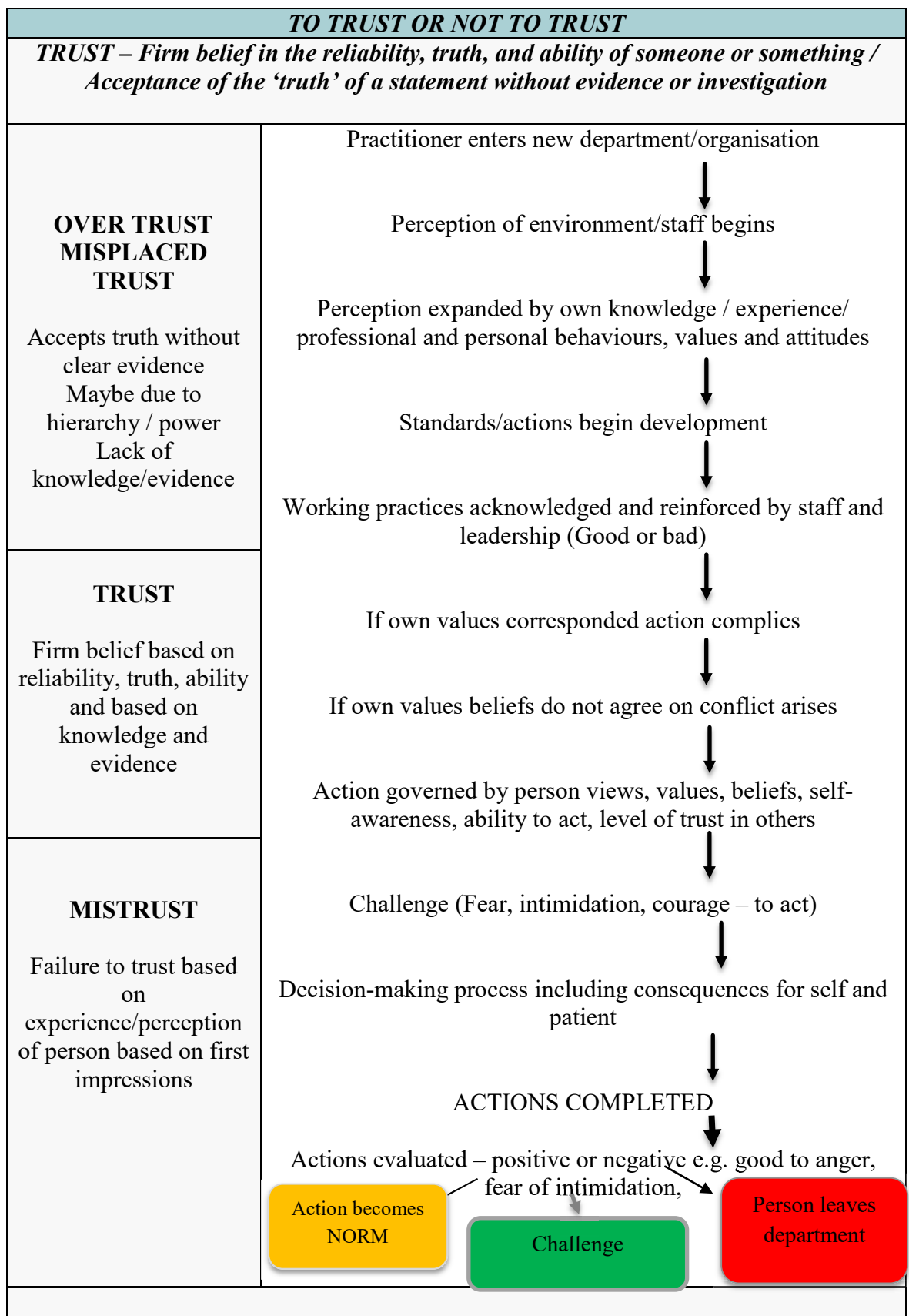


FIGURE 11: TO TRUST OR NOT TO TRUST

6.2.4 Decision making - Summary

Several areas were highlighted which can potentially affect the decisions nurses make and prevent the implementation of best practice as illustrated in Figure 12 (p197).

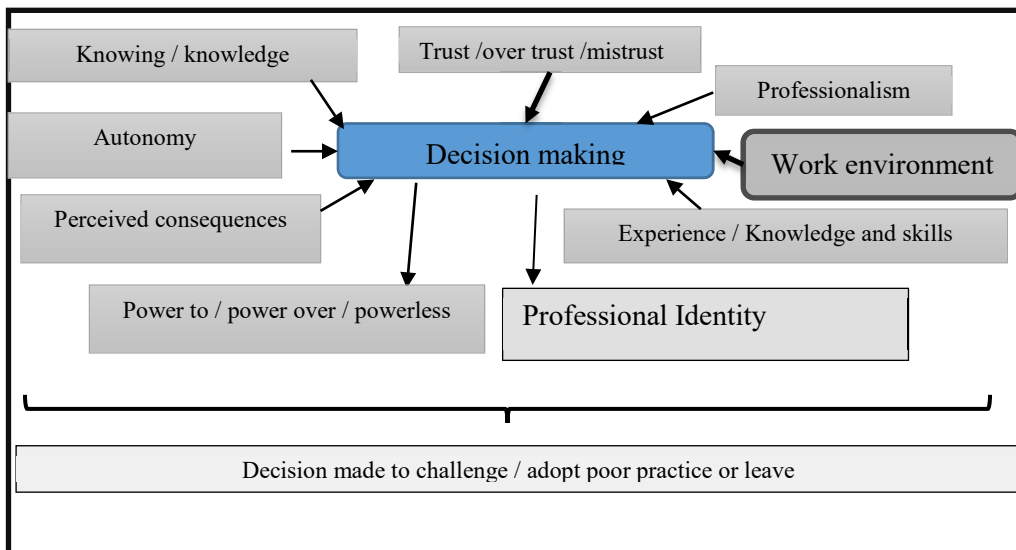


FIGURE 12: FACTORS AFFECTING DECISION MAKING

This link between practice, knowledge, perceptions and challenges to decision making is important. Decision making was identified as the core theme as it was a key factor in all categories and is the way nurses use their knowledge and experience to assess and action their judgements in practice. Several aspects, were important when making these decisions such as whether to report an incident, follow policy, time, trust, whether the challenge was needed and the level of experience someone had. Rohde and Domm (2018) suggest that nurse's decisions with medication management are based on the knowledge of the patient condition and organisational processes. However, they add that there is minimal evidence exploring the clinical reasoning or decisions made to support medication safety. Decision making relies on the knowledge of nurses which includes the practice context, culture, organisational structures, level of education and experimental learning (Carr 2005). Additionally, Rolfe, Freshwater and Jasper (2001 p3) suggest the knowledge is a 'justified true belief' and that therefore for it to be knowledge the person must 'believe' it.

This knowledge starts as soon as the new worker joins the team when nurses use their existing knowledge, and their personal and professional values and use these to start to build their understanding of the way things are. From this they begin to see what differences they can make and whether they can affect practice. However, this new worker also impacts on existing staff. This can be seen by the comments of May when she felt that she had been forgotten in favour of new staff for training and therefore leaving the Trust.

The four 'heuristics' discussed by Dougherty, Sque and Crouch (2011) and Fishbein and Ajzen's (1980) theory of reasoned actions demonstrates that individuals make decisions on behaviours based on whether they feel that the action is important, a risk to themselves or others and their previous experience or knowledge as in the case of whether to challenge or not, or whether it would make a difference. This decision is made in conjunction with their perception of the working environment including the staffing levels, workloads and patient care requirements. This link is important to recognise in these times when staffing is challenging across the NHS especially as there is the potential risk of higher levels of moral distress. Hamric (2012) agreed arguing that some of the issues which can cause this moral distress are lack of knowledge of the alternatives, inadequate staffing, futile treatment and perceived powerlessness. Nurses need to challenge the status quo and improve practice. To do this they have to be empowered to implement best practice.

Trust was also raised consistently as a principal issue both in relation to patients as nurses tend to trust the patient to take the medication so risk leaving them on tables but also the trust between colleagues. Trust is defined as an "individual's confidence in another person's intentions and motives and the sincerity of the person's word (Farrell 2002). However, there is limited literature regarding the effect of Trust between nursing staff except in the wider organisational context of management. Understanding how this concept of 'trust', can affect nursing practice is essential to ensure safe effective practice. Within this study trust was referred to in three ways – Trust based on evidence, knowledge and experience, overtrust, based on complacency and mistrust based on experience. To enhance patient safety, it is important that nurses understand the potential effect of trust,

power, autonomy and decision making and the link to work practices to reduce medication errors.

6.3 Category Two: Work Challenges

This study confirms that there are many challenges working in clinical practice including increased work challenges, which was a contributory factor in medication errors. This included staffing issues, skill mix deficits, time restrictions, increased workloads as well as distractions, all of which was said to increase their tiredness, stress and potentially could affect practice. This was seen, as a problem especially in times of staff shortages.

6.3.1. Staffing

One of the challenges faced by the nurses was the low staffing which was highlighted by all participants, whose perception was that this was a consistent problem which they felt affected patient care. The participants outlined several challenges such as working with small numbers of permanent staff and having to support large numbers of agency or international staff who, although were welcomed, added their own pressures due to the support needed for transition. These increased challenges resulted in staff who were tired, stressed and who felt they had a lack of time for training, lack of leadership.

This issue of increased workloads and low staffing numbers is not a new problem. In view of the fact, that nurse staffing numbers have reduced in the NHS, and is an indication of an overall decline which is set to continue it is essential that staffing is managed effectively (Buchanan and Seccombe, 2013). This is especially true when there has been a direct correlation between low staffing numbers, increased workloads, an increase in stress for nurses and a decrease in quality of care and safety (Duffield et al, 2011, Bolo and Yako 2013). In this case, the participants have highlighted the challenges of working in areas where there are lower than expected staffing levels and which result in difficulties for the staff in their practice.

The challenges included increased pressure and tiredness, a potential lack of concentration and an increased risk of incidents. This builds on the earlier work identified above which found that these aspects have a direct impact on the quality

of patient care. However, low staffing numbers resulting in a decrease in quality of care and increased stress is not a new issue (Rafferty et al, 2007). Rafferty et al (2007) argued that there was a significant link between the nurse patient ratio and mortality rates. Rafferty (2007) found that nurses working in those areas which had high patient ratios had lower levels of job satisfaction, high burnout levels and were seen to report reduced quality of care for patients. This was supported by Aiken et al (2014) who completed a retrospective observational study of nurse staffing and patient mortality in nine European countries. Although there were limitations to this study, these were recognised by the researchers. These limitations included the fact that the assessment only looked at one outcome (mortality) and only in patients undergoing common general surgeries. The definition used for the education measure was said to be reliant on each country's definition of bachelor's education for nurses, and this was identified as different for each country and therefore comparisons were difficult. The authors also added other limitations including the way the shifts were potentially skewed depending on whether the nurses work nights and the fact that although the mortality outcomes for patients were taken from the year that most closely matched the nurse survey year, delays in the patient data availability meant that the two data sources were not always perfectly aligned.

Despite the limitations, this was a large, credible study which demonstrated the need for adequate, safe staffing to ensure patient safety. The findings of the study demonstrated that an increase in the nurse's workload of one patient was sufficient to increase patient mortality by 7%. Health Education England (2014) also recognised this problem and have suggested that health care professionals are particularly vulnerable to stress and burnout. They suggest that the majority, of nurses leaving the NHS, are either 'newly qualified or nurses nearing retirement age' with 10% of the workforce considering leaving due to reduced 'Job satisfaction, stress and burnout which is particularly high in the newly qualified nurses,' during the first two years following qualification. This was also reviewed earlier by Bolo and Yoko (2013) who found that the majority, of their population, found their physical health was affected by staff shortages suggesting that nursing is a stressful and demanding career which can affect the wellbeing of staff

including the 'physical, psychological, emotional and social well-being of the nurses. The health and welfare of the current nursing staff are paramount if we are to maintain the services of the existing experienced staff who work within the NHS and health care in general. One effect which can have dramatic effects on staff is the stress resulting from working within these environments.

These effects on the individual of work-related stress were explored by Freudenberger (1975) who referred to it as a process where a person in an organisation becomes exhausted, due to excessive demands on their energy, strength or resources and becomes 'inoperative'. The study by Freudenberger (1975) was initially based on volunteers in a self-help clinic, however, current evidence has confirmed that this remains a risk for health care workers (Health Education England 2014). Schaufeli, Leoter and Maslach (2008) found that this burnout can result in a gradual emotional depletion, loss of motivation and reduced commitment. Therefore, it is essential that this stress is reviewed and managed effectively throughout the NHS. It was agreed that one option to deal with this was more staff however as outlined by Claire, staff alone may be insufficient.

6.3.2. Skill deficits

This belief that more staff alone will not improve the system was supported by Duffield et al (2011) who suggested that skill-mix issues affected both staff and patient care. This issue with skill mix deficits was reported by all the participants who suggested this could affect medication administration management. The participants suggested that the staff turnover and difficulty in recruiting staff resulted in a reliance on junior staff, new overseas nurses and an increase of agency staff who were often learning themselves and needed support. This ineffective skill mix affects staff morale and the quality of care (Duffield et al, 2011, Jacobs, McKenna and D'amore, 2015). Nevertheless, the participants continued to find that they and their colleagues were working and supporting new and junior staff even when they were experiencing times of lower than usual staffing resulting in skills deficits and poor skill mix within the teams.

Skill deficits was discussed by Jess who explained that the skill mix was often poor with increased agency and bank staff which she felt resulted in increased

medication errors due to 'peoples' knowledge. According to the participants, this poor skill mix led not only to errors but also to increased workloads for themselves in regards not only to patient care but also in supporting the junior or agency staff with an effective skill mix seen as essential if they were to enhance patient care. An effective skill mix is defined as 'the mix of posts, grades or occupations in an organisation' and 'the combinations of activities or skills needed for each job' (Buchan and Dal Poz, 2002 p.575). When reviewing skill mix, it is essential that the staff have sufficient knowledge and skills to provide effective nursing care and to minimise drug errors and the quality of care for patients as well as increasing job satisfaction for staff (Blegen, Vaughn, and Vojir, 2007, RCN, 2010, Moore, 2010).

The perception that increased use of agency staff could affect safe medication administration was also discussed by Claire who felt that this was an increasing problem and the lack of knowledge of their skills was a risk even though this was checked by the Trust. There was also the perception that there was an increased risk with junior and NQN's who they felt needed increased support and mentorship as they were said to have an inability to influence practice or deal with interruptions and difficulty challenging other staff. Therefore, it is imperative that they have the time and support to develop their skills. This time and support is important according to Hesselgreaves et al (2011) who argued that errors increased when there were high numbers of newly qualified staff on wards and that supervision was essential to avoid this problem. This need for support and training to ensure safe transition from student to qualified nurse was also highlighted by earlier research (Fox, Henderson and Malko-Nyhan, 2005, Tang et al, 2007) which suggested that all NQN's must have time and supervision to develop their skills and their transition into the department to develop their confidence and reduce anxiety (Manias, Aitken and Dunning, 2005).

It is interesting to note that most of the work into skill mix is looking at the changing workforce agenda into introducing new bands of staff despite the recommendations that a larger nursing workforce improves patient outcomes (Spilsbury and Meter, 2001, Twigg et al, 2012, Jacobs, McKenna and D'amore, 2015). The participants' in this study have identified many issues concerned with

skill mix and lack of staffing. The ineffective skill mix, in this case, highlighted several problems which included lack of development opportunities, lack of support and time to develop key skills such as medication administration competencies, increased stress, tiredness and increased workloads due to the repeated checking and supervision needed for this group of staff.

This has major implications for patient safety in relation to medication administration, and staff morale. Low staffing numbers increase the numbers of ad-hoc staff employed on the wards and even though these staff may have very good skills there is a perception of increased error's, a lack of trust and a need for permanent staff to take on more responsibility even if they are junior staff all of which increases the challenges for staff. There is also the problem of staff being unable to be released from practice to develop their own skills or numbers of appropriate mentors to support learners. With a lack of time to develop their skills, the one way to develop is through observing and learning from clinical leaders however as identified this was also an area of deficit and is currently being reviewed by the management. However, there is one other major factor which may add further challenges to the staff, which are the many distractions staff must deal with on a regular basis.

6.3.3. Distractions and interruptions

Another area which demonstrated the decision-making process of the nurse was the interruptions and distractions and how these were managed in practice. There have been many initiatives aimed to reduce these in clinical practice however these prove to be insufficient (Currie 2014). The importance of these in relation to errors and patient safety was highlighted by all of the participants. Although recognising these as inevitable the participants suggested these can decrease staff concentration, disrupt the medication administration process and potentially result in omissions and errors. This builds on earlier work by McGillis Hall, Pederson and Fairley (2010) who suggested that interruptions can have negative effects on patient safety. The participants argued that these constant interruptions increased workloads, increased the time it took to complete rounds, reduced concentration and could potentially make it more likely that patients were given incorrect medications, or result in omissions of medications thereby reducing patient safety.

There was also the perception that interruptions had increased over the years and with the named nurse role had intensified the pressures as well as increased complexities involved. This was confirmed by Tucker and Spear (2006) who argued that there were several areas of complexity. This included constant changes in the patients' conditions, the nurse's coordination role, for example, coordinating tests and other services, and the aspects which are not directly related to the patient's conditions such as interruptions due to missing medications or faulty equipment which they called operational failures. Biron Lavoie-Tremblay and Loiselle (2009) agreed, they had observed medication rounds and identified two phases when medications administration was interrupted, during the preparation stage and during the administration phase. Biron Lavoie-Tremblay and Loiselle (2009) found a clear difference between the types of interruptions between these two phases. During the administration side, the main source of interruption came from self-initiation and patients, whilst during the preparation stage interruptions came from the coordination of care and during the discussion of patient care.

It was interesting to note that the participants were interrupted by senior staff even if they asked them to wait and that most of interruptions did come from members of the team. This problem of staff interrupting other nurses involved with medication administration was highlighted by McGillis Hall Pederson and Fairley (2010) who found in their study that many interruptions came from other staff including 25% from nurses, 31.8% from the multi-professional team, with 20.1% being from patients. This finding was supported by this study which, showed how all the nurses had experienced interruptions, which came from patients, relatives, doctors, both junior and senior nurses.

Nevertheless, the complexity and changing nature of nursing and patient requirements means that nurses will always have to deal with multiple demands at once and be available for their patients (Hayes et al, 2015). Therefore, it is imperative that nurses understand not only why they occur but also when and how these can be avoided or, if unavoidable, how these can be managed without compromising patient care. This need for nurses to be able to manage interruptions was supported by Hayes et al (2015) who argued that although interruptions had been highlighted as a risk for increased medication errors it is important that nurses

are able to deal with these interruptions by being able to ‘multi-task’ and ‘to think and do or think and listen at the same time’ (p.1065). Hayes et al (2015) describe how there have been initiatives such as the tabards where nurses are aiming to isolate themselves in attempts to make medication safer as in the case of the ‘sterile cockpit rule’ which came about from aviation to reduce distractions during flights (p.1068). Anderson and Townsend (2015), explain how the sterile cockpit rules were put in place to reduce nonessential activities by flight crew members which had previously been identified as contributing to errors and had been used as a basis for implementing initiatives to reduce these interruptions such as red zone areas which, limit access to some areas. Anderson and Townsend (2015) argue that there are similarities between the aviation professions and nursing, as they both use teamwork and work in complex environments, therefore there should be similar approaches to reducing interruptions including education, team working, and protocols which could help to improve patient safety.

However, Hayes et al (2015) disagree suggesting that the two professions are different, and the interruptions can themselves reduce errors for example as in the case when patients question their medication. They add that the complex ‘clinical environment and the nature of the nursing process’ mean that nurses cannot just isolate themselves from the communications and need more confidence in dealing with these interruptions during medication administration. This is important as these types of interruptions are an integral part of the nurse’s role. This role is multifaceted and therefore all nurses should have the skills to manage these interruptions effectively. Sitterding et al (2014) suggested that developing nurses ‘situational awareness’ was the key to understanding the way nurses dealt with the interruptions and that nurses tended to either block or engage with the interruption depending on the situation and their own experience. Sitterding et al (2014 p.906) found that the most frequent choice of action (60%) when encountering an interruption during medication administration was to ‘engage’ and deal with the situation if it was a high priority. Other methods to deal with these interruptions included blocking (18%) where they delayed dealing with the issue until after the drug round, multi-tasking (12%), or mediate or delegate to other members of staff, which were the least adopted strategy utilised. One fact both Hayes et al (2015)

and Sitterding et al (2014) agree with is that it is essential nurses understand how they can minimise interruptions and the strategies which can be used reduce these safely.

When looking at the initiatives like the tabards (Hayes et al 2015) to reduce interruptions it was clear there were conflicting views. Some nurses felt they were good tools to help prevent the distractions while others disagreed and felt these became more of a tick box especially when they were worn regularly when people become immune to them. Like the conflicting views of the participants in this study, the evidence also involves conflicting views into the effectiveness of the tabards and other interventions. Tomietto, Sartor and Mazzocoli (2012) agreed, suggesting that although patients were likely to avoid disturbing nurses who were wearing tabards, this was inconsistent and was also less likely to prevent other professionals from approaching the staff administering medications. Other methods of reducing interruptions such as posters and signage have also had limited effects (Jones 2009).

Although the participants were aware of the risks that distractions caused they also understood they needed to be able to manage them, however there was agreement between participants that this was more challenging for junior staff who needed support to be able to challenge people interrupting them especially when busy.

6.3.4. *Being Busy*

Being busy was highlighted by all the participants as a problem and a factor in medication errors and the way it affected their decision making with the potential to cut corners or adopt work practices. This problem included increased pressures a lack of breaks which affected their focus especially during long shifts. This link between long shifts and tiredness was said to lead to an increased risk of errors when working twelve-hour shifts (Clendon and Gibbons 2015). Although there were limitations with this research as they had not reviewed any of the other contributing factors, such as the staffing and skill mix issues identified earlier this would suggest that the long shifts and tiredness does raise the risks for both patients and staff.

Another aspect highlighted was said to be working with agency staff who come and go and bring their own challenges of needing extra support which increases the nurses perceived 'busyness'. It is important to recognise that these factors of excessive workload have an impact on the physical, the psychological, emotional and social well-being of the nurses (Bolo and Yoko 2013). It also leads to increased stress and exhaustion due to excessive demands on their energy, strengths or resources which eventually leads to burnout and further exacerbates the risks to patient safety (Health Education England, 2014). Maslach and Jackson (1981 p.99) define burnout as a 'syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do 'people-work' They add that this involves the increasing feeling of 'emotional exhaustion' and as this increases, staff have reduced emotional resources and can develop negative cynical attitudes due to the increased mental and physical exhaustion which can affect their work and lead to the work practices and stress as discussed by the participants.

This link to stress was confirmed by McGarth, Reid, and Boore, (2003) when they found that the most commonly identified stressor in nursing was identified as having a lack of time to complete patient care activities. Their study identified several factors which increased stress in nurses including lack of time, emotional demands of patients, supervision of subordinate's work and a lack of resources (McGarth, Reid, and Boore, 2003). This link to stress was also explored by Jourdain and Chevevert (2010 p.710) who defined burnout as 'a persistent dysfunctional state that results from prolonged exposure to chronic stress'. They explain that this is when staff are exposed to high levels of demands and have low resources linked both to the work and the context of the work. They suggested that increased consistent demands on the individual that they were unable to meet had the most impact on emotional exhaustion and that this indirectly leads to depersonalisation which in turn leads to "feelings of insensitivity and impersonal responses to clients" (Jourdain and Chevevert, 2010, p.712).

The effect of not being able to meet the demands they expected also lead to further problems for the staff nurses as they become distressed by the fact that they were unable to meet the standards they themselves expected. Asher (2006 p.20) agreed,

arguing that when staff are unable to do what they feel is the right thing it can lead to 'anger, frustration and a sense of betrayal'. Asher (2006) suggests that the progression from failing to do the right thing leads to a dilemma which in turn leads to an emotional disorder called moral distress as in the case where there are shortages of staff and the nurse knows what needs to be done but is unable to do it due to the high workload. Mobley et al (2007) agree, suggesting that factors which affect moral distress include areas where patient care is seen as futile, working without sufficient competence, failing to report colleagues who have completed a drug error and working with staff who lack competence or are seen as unsafe. Moral distress is defined as 'painful feelings or state of psychological disequilibrium that results from recognising the ethically appropriate action, yet not taking it, because of such obstacles such as lack of time, organisational policies and quality of care (De Veer et al, 2013 p.101).

This conflict between the actions needed and the ability to manage this not only leads to ill health and increased sickness levels but also the loss of staff that chose to leave the profession (Leiter and Maslach, 2009). The risks of staffing losses and staff sickness is important for organisations as this will not only increase the staffing issues but also the quality of care for patients and staff morale. This demonstrates that work pressures and the challenges generated including workload, time, staffing and skill mix all impact on both the nurses themselves and patients. As these factors were highlighted through this research it is imperative that further work is undertaken to review this further and to work with the staff to reduce these effects and to improve the working environment. However, it is also important to review this in relation to the effect this may have on areas of practice such as errors in medication administration.

6.3.5 Work Challenges - Summary

This category of the work challenges suggests that there are many aspects of nursing practice which can contribute to increased risks in medication administration, contribute to errors and prevent the implementation of best practice. This includes distractions, increased workloads, staffing and skill mix issues and the experience and skills of the nurses themselves as illustrated in Figure

13 (p209). The perception of the staff was that these challenges, as well as the need to support and manage agency staff or new starters, increases the workload of the permanent staff. However, it is important to recognise that although these factors can increase the risks, the highest risks arise when these are combined and accumulative.

When nurses are working in areas which are frequently short of staff and reliant on nurses unfamiliar with the areas they are working in, there is an increased recognised risk. Add the increased distractions resulting from this and the lack of time for training and support and the risks rise. If this pattern is repeated regularly and workloads are rising, then tiredness and exhaustion results and it is then where the potential highest risks are in place and patient quality and safety decreased.

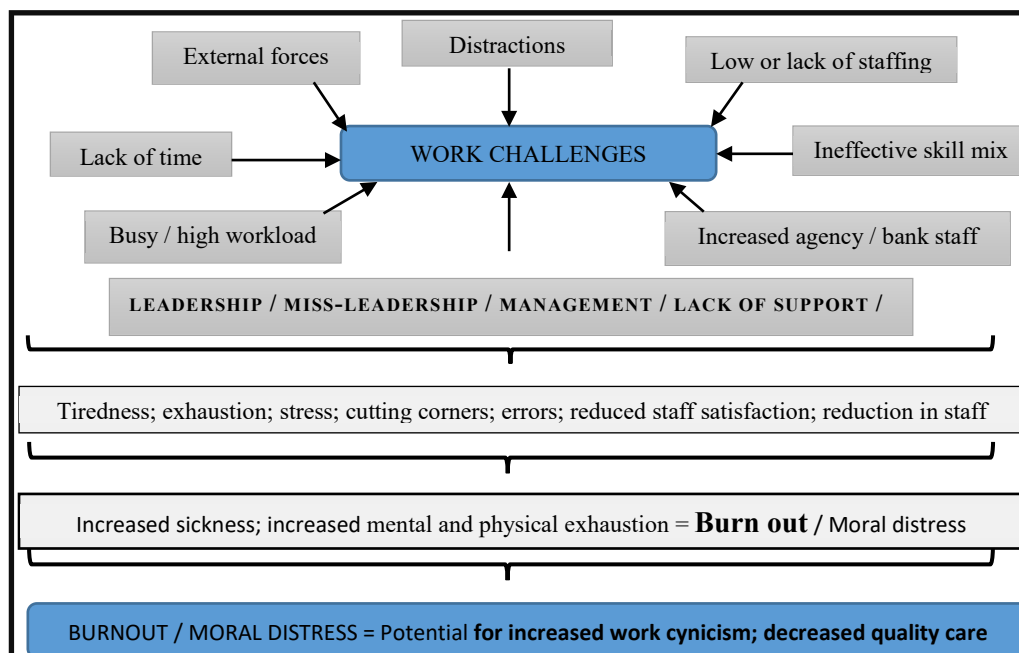


FIGURE13: FACTORS AFFECTING WORK CHALLENGES

To help mitigate these factors, understanding patient safety measures and the factors affecting these are essential. McCormack, Manley and Garbett (2004) agree adding that when practitioners are faced with an increased workload with insufficient resources and staff it can lead to them feeling 'powerlessness and disempowerment'.

The feeling of powerlessness following high workloads can be seen by the respondents in Maben, Latter and Macleod Clark (2006) study. One participant

stated that staff were “busy and had limited time which put pressure on the nurses” and “eroded their compassion”. Another staff member explained that staff were frequently unable to spend time with patients, having less patience with them and being unable to document properly all of which is supported by current NMC conduct hearings. The effect of this of moral distress and burnout adds to the potential of work practices and a lack of ability to implement best practice. For these reasons, it is important to ensure that where possible the issues which may exacerbate the workload are reduced. Therefore, to maximise the implementation of best practice it is important to:

1. Try to minimise the distractions as much as possible.
2. Ensure training and development opportunities are available for staff to ensure they have the management and leadership skills to implement best practice.
3. To identify ways to recognise high workloads and strategies to decrease these

6.4. Category three: Patient Safety

Patient safety and prioritising care was another area which relied on the decision-making skills of the nurse. Their perception was that adhering to policies and procedures and increased errors were more likely in times of high workload, short skill mix or staffing and during busy times. There was a perception that it was important when prioritising care to manage the workload quickly and this may potentially increase the risks for patient safety. This increased risk links directly to the human factor theory for the pre-conditions to unsafe acts as outlined by Reason (1990). These pre-conditions include aspects such as tiredness, attitudes, work practices and unsafe supervision which would increase the risk of nurses being involved in errors. This also includes aspects such as the understanding of the processes and policies as well as being able to prioritise care effectively.

6.4.1. Rebellion

Even though the nurses were aware of their responsibilities in following the NMC code and hospital policies, it was apparent that there was some confusion around the policies and procedures of medications such as two people checking IVs and the patient 'self-checking policies'. This had been supported previously by a wide range of evidence which identified issues with medication administration including, inadequate knowledge, and policy non-compliance across the NHS (Hesselgreaves et al, 2011, Dougherty, Sque and Crouch, 2011, Murphy and While, 2012, Lawton et al, 2012). Reasons given for poor understanding included the fact that the policies were often 'long winded' and staff did not have time to read them. They also cited the lack of time, being busy and the fact that policies or procedures were unfair as reasons why they may decide to cut corners.

The reasons nurses fail to adhere to policy are complex and often unclear, as in the case of both nurses not going to the patient. There is the issue of lack of knowledge and continual reports of low staffing numbers and skill mix issues, all of which lead to staff becoming tired and struggling to manage workloads as identified above. This was highlighted by Swain, Pufahl, and Williamson (2003) who suggested the lack of time, resources and the influence of others were affected by this. Manias, Aitken and Dunning (2005) agreed, arguing that NQN's would adhere to the policies or guidelines if they did not delay other nursing duties. This

study as in the case of these earlier studies would suggest this was an active decision made to modify practice depending on the situation and their prioritisation of duties and may not even consider this as policy non-compliance. Eisenhauer, Hurley and Dolan (2007) who, completed semi-structured interviews to explore the thinking processes of nurses during medication administration rounds agree. One important factor highlighted in this study was the perception that nurses would sometimes cut corners and bypass or modify policies or protocols to ensure the drug rounds were completed more quickly.

This was a common finding within the literature and highlighted in several of the other studies including Tang et al (2007), Armitage, Newell, and Wright, (2007), Dougherty, Sque and Crouch (2011), Murphy and While (2012), Kim and Bates (2012) and Lawton et al (2012). Examples illustrated in the literature included the failure to check patient identity as policy (Armitage, Newell, and Wright, 2007, Dougherty, Sque and Crouch, 2011), the use of other patient's medications if another patient had run out, as well as drawing up medication for subsequent shifts (Eisenhauer, Hurley and Dolan, 2007) and infection control failures during medication rounds (Kim and Bates, 2012). This supports the premise that there is a need for good staffing levels and skill mix to ensure sufficient nurses are available to double check medicines correctly. However, there is a further point embedded within this in that although the evidence agrees that nurses may modify policies to manage workload it is more than just policy non-compliance, but a decision made due to an assessment of the perceived levels of risk and priorities.

It is here that the nurses may be rebelling against the required action and act in a way which they felt was safe, even though they know the expected actions. Rebellion is defined as "organised resistance or opposition to a ... authority": or the "dissent from an accepted moral code or convention of behaviour" (Collins 2017 online), in this case, the accepted policies and procedures. This rebellion is supported in several areas in this study from the nurses leaving the tablets on tables for independent patients to where only one nurse goes to the patient to administer the IV and where they fail to check the patients ID. It was also said to be due to the need to do the work quickly to ensure they managed the full workload.

This issue of speed was also seen within an earlier study by Dougherty, Sque and Crouch (2011) who completed an ethnographic study and found that there was a failure to check patient's identification effectively when staff felt they knew the patient. The study by Dougherty, Sque and Crouch (2011) involved twenty nurses and found that of the twenty nurses only seven checked the patients' details as the hospital policy dictated. When asked about what they should do they found that three, out of the four nurses had failed to check the name bands while being observed even though during the interview they indicated that they would do so. This finding was similar to earlier research by Manias, Aitken and Dunning (2005) who found that the ID checking was only completed in 27% of occasions because the nurses 'knew' the patients. It was interesting to note that even though all the nurses indicated that they would check the patients' details they all identified failure to check ID as an increased risk of errors as well as other areas where there may be a failure to check details such as checking for allergies or stop dates on the drug charts.

The studies highlighted above refer to policy non-compliance however this study suggests the action of deciding to modify practice is more complex than policy non-compliance. The staff are not actively failing to comply with the policy or guideline, they are actively modifying or rebelling from it because their clinical experience, knowledge and judgement suggest this practice is quicker or policy is unfair and the action is considered relatively safe and therefore there were active decisions being made on when and where these could be modified. When challenged, the nurses generally knew the procedures and that this was an area where distractions, complacency and cutting corners could potentially cause problems and potentially lead to poor practices, putting patient safety at risk.

6.4.2. Accepted practices

The concept of accepted ward practices was discussed by several nurses including Dawn who suggested that her workplace was different to other wards who 'did it their way'. This concept is like the definition of ward climates proposed by Lawton et al (2012) who stated that this was 'an overall atmosphere of a hospital ward' which was 'determined by shared rules and norms of the way it is (p.1443). This builds upon previous research including Jacobs, McKenna and D'amore (2015)

who argued that this ‘culture’ is difficult to understand and different teams and departments may have diverse cultures depending on the staff working within them. This results in areas whereby inexperienced staff may be expected to conform (Fincham and Rhodes, 1998, Maben, Latter and Macleod Clark, 2006, Dougherty, Sque and Crouch, 2011, Lawton et al, 2012) increasing the barriers to implementing best practice.

The definition by Lawton highlights the ‘shared assumptions and group ‘norms’ and suggests it is ‘the way it is’ (p.1443). This was seen when Tess entered the IV room and found the IV’s all set out already drawn up ready to go which was a breach of the policy. She was then surprised that the nurses on the ward were unconcerned about this and did not identify the risks inherent with this.

However, even when work is on-going, it is important to recognise that there needs to be a consistent approach to ensure staff have the knowledge of the policies and understand the level of risks involved in failing to follow this good practice. This was also discussed by Jafree et al (2016) who argued that a favourable culture is needed to ensure patient safety and reporting of incidents. They add that this also requires sufficient staff and resources. This is important to ensure junior nurses are supported and given time to read and understand the policies and are followed up to ensure bad ward practices are eliminated from practice. One aspect which is paramount to achieve this is the ability for staff to challenge others when they see these poor practices.

6.4.3. Challenging Hierarchy and Peers

Challenge and the difficulties of the challenge were highlighted within this study as an issue affecting practice as identified by Grace who found that it was ‘difficult’ and Erica who suggested it was “daunting”. Challenge is a subject which has been raised as an essential skill for health care workers over the past few years (Department of Health, 2012; Cummings and Bennett, 2012, Francis, 2013). This need for challenge can be seen by the Francis report (2013) which suggested that NHS staff must challenge aspects of care which could comprise patient safety (Cummings and Bennett, 2012, Francis, 2013). This was also identified by the Chief Nurse for England who introduced the 6C’s (care, compassion, courage,

communication, commitment and competence (Department of Health, 2012). Therefore, it is essential that there are strategies to help nurses develop the skills to be able to challenge practices which may affect patient safety, however, it is important to recognise that challenge is not an easy concept for nurses to adopt (Swain, Pufahl, and Williamson, 2003). Despite the call for nurses to challenge and question practice, as identified above, it is not an easy position to take and strategies to help them embrace this way of developing practice is essential. This difficulty and fear of challenge were discussed by Bess who pointed out those NQN's or new staff to areas may find challenge difficult and would usually:

“Bow to more experienced nurses”. As “it takes a long time to get that confidence... you want to know you are in the right”.

This concern with conflict and the difficulty to challenge supports previous research including Bailey and Davies (2006) who suggested that although this was recognised nationally as a skill nurses needed, it was not something staff found easy. Lawton's et al (2012) argued that the enforcement of previously established practices flourished when junior staff failed to challenge bad practice. This study found that not only were staff concerned about the outcomes of challenging but that this failure to challenge led the unchallenged behaviours to become part of their ‘norms’, and staff new to the area who did challenge were often seen as ‘being difficult’ leading to the culture of ‘the way we do it here’ or not wanting to ‘rock the boat’.

This problem of ‘rocking the boat’ was also discussed in (2006) by Maben, Latter and Macleod Clark (2006) and Swain, Pufahl and Williamson (2003) who found that not only could the other staff prevent the implementation of learning they could also influence the learner to participate in activities which were not recommended e.g. the ‘drag lift’. Several reasons were reported for this, including lack of time and resources but mainly due to the influence and practices of other staff which they felt unable to challenge. When asked why they felt unable to challenge, responses including being worried about being accepted, having an unpleasant environment to work in, and feeling that their involvement would be unwanted (Swain, Pufahl and Williamson 2003). Although the study participants

were students other evidence demonstrated that this problem was not only with students. Maben, Latter and Macleod Clark (2006) found that staff new to departments also experience this problem of obeying hidden rules. So why does this occur, one reason identified earlier was by Sherif in 1936 (cited in Buchanan and Huczynski, 2010) when he argued in an organisation a person's viewpoint will shift to an alternative view if there is doubt or uncertainty. NQN's and new starters to environments may feel vulnerable and uncertain as they start to attempt to implement learning and new practices especially if they feel that there are some areas which should be questioned.

The participants suggested that there were many reasons the nurses may not challenge including the fear of reprisals to themselves, the fact that if inexperienced they may not be sure of the correct way and so defer to the more senior nurse and to avoid confrontation especially if they are trying to fit into a new team. There was also the feeling that others may not like to be challenged which could cause bad feeling and bad working environments, a lack of confidence and lack of leadership skills. This means that the person going into a new team will try to fit in and therefore try to please the new team to ensure a positive atmosphere.

This supports the earlier work of Lawton et al (2012) who suggested that the ward atmosphere led by matrons and sisters could be seen in two ways, those who wanted to focus on speed and others who focused on patient safety. Dougherty, Sque and Crouch (2012) highlighted the link to the theory of planned behaviour suggesting that departments which focused on speed resulted in cultures where staff would 'cut corners or violated safe practices by modifying policies or protocols to reduce the time taken to complete the 'task'. In this type of climate, the junior staff felt unable to challenge senior staff thus resulting in a culture which accepted the poor practices. In addition, junior staff are often supported by role models or mentors who in this type of environment may fail to provide effective mentoring, ignoring or preventing learners from practicing and implementing recommended practices (Gerrish et al, 2008a, Lawton et al, 2012) resulting in staff who find challenge and learning and the implementation of best practice difficult

(Gerrish et al, 2008b). The addition of the interruptions, skill mix issues and lack of decision making make it more difficult for staff to provide effective patient care.

This then results in staff that understand ‘best practice’ but who fail to implement it since it is ‘not possible’ in the workplace situations, leading to coercion of others into the practices and therefore increasing the ‘sabotage’ or covert rules in the department (Maben, Latter and Macleod Clark, 2006, Lawton et al, 2012). Fincham and Rhodes (1998) highlighted this in 1998, arguing that the ‘sabotage’ may be because of conflicting rules, which results in workers breaking one rule to fulfil another. This then becomes the ‘hidden’ curriculum (Coleman and Earley, 2005). Coleman and Earley, (2005) give examples of this as being where nurses may be reducing the amount of time spent on checking name bands effectively or watching patient’s take their medications, so more time is available for another aspect of patient care. If this hidden curriculum continued over time it could be accepted by staff as part of their ‘norms’ or culture affecting the behaviours and values of inexperienced staff. However, it was important to recognise that some of the staff had no concern with challenging and had the confidence to do so when needed. This was highlighted by Jess who suggested this was a skill that they could learn and then if given the confidence and support this would improve. One way to do this was said to be by empowering the staff to challenge from student days by getting all staff to question each other in a positive way, but this was dependent on support from peers and senior staff

This requirement for all staff to be confident to challenge is a key point for educators as it is imperative that student and post-graduate nurses develop the skills and confidence to enable them to challenge. Although challenge is already discussed in university for students and many organisations, on the back of the Francis report have implemented the 6C’s, the evidence suggests this remains insufficient. The OPCE (Observe, Praise Challenge, and Escalate) framework, (Durham and Sykes, 2014a &b, p33) was implemented to address this, however, this has also not seen the benefits expected. The OPCE framework was developed as part of the NHS Values learning tool (Durham and Sykes, 2014b) which was published by Health Education England in 2014. This booklet was completed by the author and colleague following the initial literature review for this study as an

aid to developing the learning culture. One key element of this learning tool was the OPCE framework (see Figure 14 p218).



FIGURE 14: OPCE FRAMEWORK (DURHAM AND SYKES 2014)

The aim of the OPCE framework was to develop a learning culture where staff felt able to approach each other with their concerns, learn together, offer support and if problems remain, identify someone else to help support that person such as a mentor, senior nurse or Practice Development nurse. However, despite the work which went into the implementation of this framework, these work practices and incidents continued to be highlighted by the participants.

6.4.4. Incident reporting

Although all the participants were aware of the need and process for reporting incidents this study suggests that this was dependent on the incident type rather than the policy which stated all incidents and near misses should be reported. When looking at incidents it is interesting to note that the participants looked at these based on how important they perceived them to be rather than the fact that an error had occurred. When looking at the first vignette where a nurse on the 10.00pm round identified an omission of paracetamol there was an acknowledged understanding of what should happen, which, included phoning the previous nurse, checking whether the patient had taken the medication and then completing an incident form, however, there was a variety of actions taken depending on the nurse involved and the other aspects discussed above including the rebellion which

the nurses had towards the expected actions, policy non-compliance and being time consuming.

This point of the incidents being time consuming and therefore not always completed was also supported by several participants especially if ‘it was only paracetamol’. Nevertheless, they all agreed that action had to take place with the missed antibiotic as the patient was acutely unwell and this was a bigger risk. This link to the level of risk is complex however Reason (1990) provided one reason which may account for these differences which he calls ‘relevance biases’. According to Reason (1990, p.167) when problem-solving, staff only have a small ‘keyhole’ view of the problem and factors that lead to a conclusion and that this may suggest it is a “selective process which favours items relevant to the presently held view”. If nurse’s views are that the paracetamol is not a huge risk, but the antibiotic is, this could influence their decision in whether to report or not report even if the error occurs and they understand the policy. Likewise, with the failure of two nurses to administer the IV if the nurse feels that it is safe and is done elsewhere it could lead her to a conclusion which may result in rebellion or affect policy compliance and this in itself will then lead to the developing culture identified above whereby policy non-compliance or adaption becomes the norm even though both errors are the same.

When considering the reason for errors it is imperative that practitioners understand how errors occur. Reason (1990) suggested that this results from ‘failure types’ (fallible decisions and line management deficiencies which would include the organisational and supervision failures) and ‘failure tokens’ (psychological precursors of unsafe acts and unsafe acts themselves. Reason (1990) suggests there are four types of ‘human’ error including unsafe acts which are split into two areas including

- Omissions or failures in the five rights
- Violations (policy non-compliance)
- Pre-conditions for unsafe acts (tiredness, attitudes, work practices and unsafe supervision and training)
- The organisational influences (staffing, skill mix).

Human error is an emerging theme for the NHS which is looking at improving practice. According to Armitage (2009), 'error is inevitable'. Armitage (2009) further argues that although blame is often targeted at the practitioners, it is a complex area which has many causes whereby the individual behaviour is affected by the 'pre-packed solutions and attention deficits'. This point of blame had previously been highlighted by Reason (2000) who argued that focusing on the individual was counterproductive and resulted in ineffective strategies such as poster campaigns which focus on fear, writing new policies or adding information to existing procedures, disciplinary measures and blaming and shaming staff. His conclusions were that using this approach was unsafe as it prevented a reporting culture and can isolate the unsafe act from its system context and therefore actions which may prevent more errors may not be implemented or understood. This lack of a reporting culture is important as according to Reason errors tend to be 'recurrent' due to the processes in place. Norris (2009 p.205) agreed, suggesting that to reduce errors it is imperative that systems of work should be designed for the staff working in them and one way to do it is to introduce an adapted 4 step approach – the hierarchy of interventions to improve safety which was:

- Step 1. Eliminate the hazard
- Step 2. Create barriers
- Step 3. Mitigate the consequences
- Step 4. Educate staff

Norris (2009) argues that organisations have a duty to design for standardisation and simplicity so that users or in this case nurses understand the processes and reduce the variable practices and enhance safety. He also advises the use of tools such as the incident decision tree and root cause analysis tools advocated by the NPSA which are currently in use at the hospital. This need for resources as well as support and education for nurses was seen as essential to enhance the safety culture needed for safe patient care (Lawton et al 2012, Jafree et al 2016). However, despite this, the work practices and confusions remain. The barriers to preventing reporting is that staff may not want to report the staff as they may feel it will get others in their team into trouble or because of the ramifications for themselves. This perception of getting people into trouble and being reluctant to report colleagues was also supported by several nurses in this study thus suggesting their

decisions are based on their perception of risks to the patients, colleagues or others rather than the policies. One aspect which was highlighted was the need for nurses to know about any errors, so they can reflect and learn from them and implement strategies to reduce incidents and enhance patient safety. However, this premise that nurses did not want to get others in trouble was highlighted as a barrier to this.

The effect of any error on the individual nurse was reported as affecting the person's confidence and self-esteem (Claire). This effect was also found in earlier research whereby Maiden (2011 p.343) found nurses described their feelings following drug errors and used terms such as 'horror, devastation, and the worst thing that could happen'. Maiden (2011) argued that nurses failed to report errors due to several reasons including the lack of understanding of what constitutes an error, fear, and the completion of the report all of which has been highlighted in this study. However, this decision of whether to report is not an easy decision to make. The effect of failing to report causes a dilemma between the nurses personal and professional values and therefore add further stress for example when the nurse is concerned about the error but also about getting the person into trouble. Therefore, it is essential to remove the fear from the situation and enhance the fact that reporting errors can be a way to learn as identified by Reason (1990) and Norris (2009). Therefore, it is essential that staff have the confidence and moral courage to report and challenge.

One concept which may be useful in helping staff develop the moral courage and self-awareness needed to deal with these issues is reflection. Reflection is described as a process where learners experience a situation, examine, recognise and then interpret it. Following this reflection, the learning is either repeated when this experience occurs again or adapted (Price 2005). The benefit of reflection was highlighted by Tess who said that:

“Reflection can be a useful tool to aid learning”.

However, Eraut (2004) argues that although reflection is useful it is often misunderstood and tends to focus on the act of reflection rather than the experience itself. He suggests that reflective practice includes reflection from many different aspects of our experiences from our past lives and other previous work practices

rather than one situation. In contrast, Wilshaw and Trodden (2015) argues that reflection can help to enhance quality care however to do so good leadership and guided support is essential.

6.4.5 Patient Safety - Summary

This category confirms earlier evidence which demonstrate many factors contribute to increased risks in medication administration and prevent the implementation of best practice during the prioritisation of care illustrated in Figure 15 (p223). This includes the workplace constraints, ward non-compliance, the culture and human error as well as the knowledge and decision-making processes of the nurses. One key area which is important to explore is the confusion and non-compliance around the policies and procedures which were said to be due to several reasons including:

- A lack of time to read policies / procedures
- Staffing / skill mix
- Interruptions
- Inadequate knowledge.
- Failure to report incident reports

There was a clear issue for staff with work practices or the ‘hidden’ practices which the participants suggested occurred because staff ‘became blasé’ or complacent. This was an interesting concept for the author. How does someone ‘become blasé’? The participant’s perception was that this was due to several reasons including the fact that there are high workloads, lack of support and becoming familiar with the activities or practices as in the case of the red bibs. Areas of practice affected by this complacency include rebellion or non-compliance including aspects such as the failure to conform to two people checking with IVs, failure to check name bands which could be due to the issue of rebellion where the nurse felt the risk was low or ‘unfair’. There was also the issue of the requirement for speed and the underlying issues involved with a challenging practice which most staff confirmed results in the inability of staff to challenge.

One of the factors which was interesting to note was that there was a consensus that junior staff would find challenge difficult due to lack of experience, increased vulnerability, and the fear of the consequences if they challenge existing staff which could potentially lead to practices based on staff preference rather than best practice. However, this was also seen with senior staff who had problems with challenges for similar reasons. Although the Trust had implemented the NHS values, 6 C's, stop the line and the OPCE framework all aimed at supporting staff to effectively challenge, this remains a problem. The other area which increases the risk for patient safety was the way the participants decided on which incidents needed reporting.

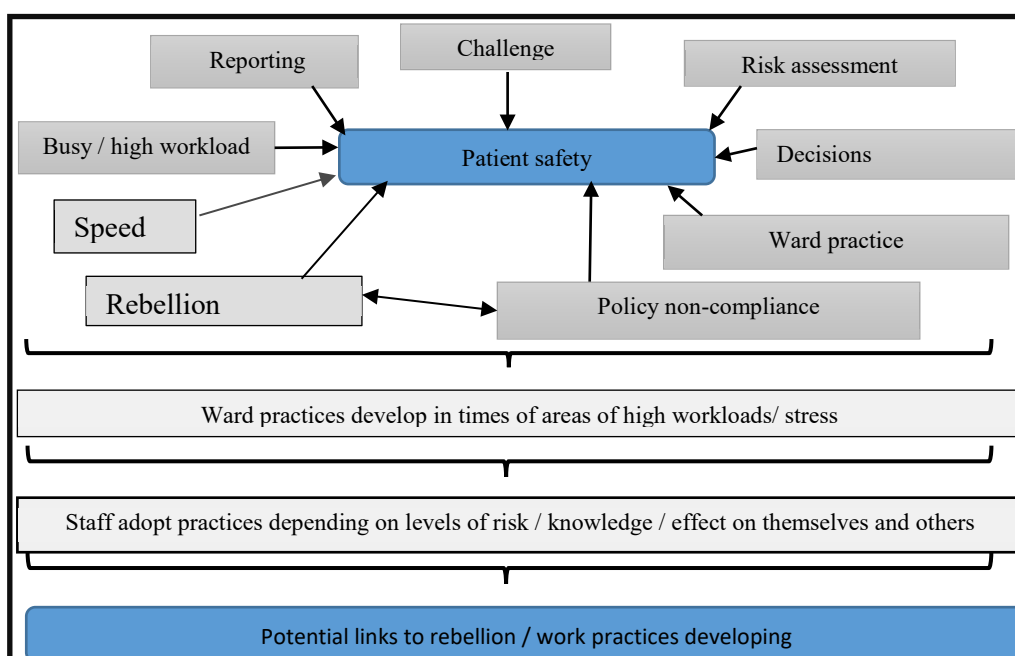


FIGURE 15: FACTORS AFFECTING PATIENT SAFETY

The two vignettes looking at the omission of paracetamol and the antibiotics were effective in identifying how the participants consider which incidents to report. This was potentially seen in two ways. Firstly, whether all incidents should be reported so that learning could occur and secondly that reporting was based on the risk of harm to the patient. This potential lack of reporting remains a concern as without the reporting of incidents learning is unable to occur for the member of staff involved but also for the wider team. There is also the bigger risk that patient harm could, in fact, be higher than the nurse expects and therefore affect patient safety. The participant's ideas on what causes errors supported Reasons (2000)

preconditions for unsafe acts such as tiredness, attitudes and therefore the resulting work practices and unsafe supervision and training and the organisational influences such as staffing and skill mix. However, their perception was also that completing incident forms would affect the staff by getting them into trouble and that this was a fearful experience. It is important to ensure that staff demonstrate moral courage and challenge when needed. It is suggested that there a good knowledge and understanding of the policies and procedures and a commitment to accept support and criticism when needed. However, as discussed there are many reasons that this fails. Therefore, to maximise the implementation of best practice it is important that:

- 1 The Organisation (and NHS staff) adopt an open culture to challenge. This means that all staff will be open to being challenged. Only then will the change be possible.
- 2 Training and development opportunities must be available for staff to develop their knowledge, understanding and skills of the human factors affecting errors, incident reporting processes and how learning can occur through these.
- 3 Incident reporting to be treated as a positive learning experience and should be encouraged and adopted by all staff. Clear definitions of errors should include dissemination that ‘there are no minor errors’
- 4 Dissemination of findings to the wider profession by conference presentations and writing for publication

6.5. Category Four: Staff Development

Another area which was linked to decision making was the knowledge and competence of the staff and their ability to develop their knowledge and skills. Although there were variations in practice and the regularity of updates identified by the participants, they had all attended study days or updates in the past and had all completed packs for medication administration. They all understood their responsibility to ensure they and the staff they were delegating to, were competent and that they kept up to date with the new processes, policies and best practice recommendations. However, there were some inconsistencies in practice such as in the case of where the staff knew the policies but failed to act or checking IV's.

6.5.1. Competency

All the staff had completed the hospital's drug administration study day and competency pack. However, some of the nurses explained they had completed their training several years ago and so kept up to date by their day to day working and:

“From experience, learning from patient care and medications administered”.

However, the participants also felt that this training was sometimes insufficient with some nurses lacking competence and support which was said to be a risk for junior nurses. This reasons for this lack of support for new staff included the lack of time and staff with the correct skills to pass on and supervise this skill. The challenges facing NQN's was explored by Maxwell et al (2011) who found that the lack of support resulted in a 'severe loss of confidence', suggesting this support was essential to the transition from student to qualified nurse. Vaismoradi et al (2014) suggests that to ensure NQN's are competent the training in their pre-registration programme needs to be enhanced. They added that nursing students felt their education programme was leaving them vulnerable to medication errors as it was often different in the classroom to clinical practice. Lim and Honey (2017) also discussed the challenges of practice for the NQN's suggesting that although the NQN's did lack confidence, they did consider the medications, side effects on the patients and adhere to good medication principles. Lim & Honey

(2017) as in this study found that practice was challenging due to lack of time, knowledge of medicines and resource and therefore orientation, access to resources and ongoing education was essential for newly qualified nurses. Although there is a recognised risk for junior staff, it is also important to recognise that experienced nurses may also lack knowledge and skill in this area. If they are unaware of recent changes, new medications and procedures they may in fact be at more risk than their newly qualified colleagues.

This difference in knowledge was seen earlier by Mc-Bride, Henry and Foureur (2007) who found that although nurses recognised a working knowledge of medications was important they also recognised that often it was difficult to retain all of this knowledge and therefore needed access to the information as well as education programmes and discussion forums to help develop and maintain their knowledge. Although medication administration training is covered extensively in nurse training and health care organisations post-registration, there have been many studies which would suggest that nurse's knowledge of medications could be areas which may have a major impact on patient safety (Tang et al, 2007, Jones, 2009, Murphy and While, 2012, Lawton, 2012 Cabilan et al 2015).

Despite a wealth of development opportunities within the NHS including formal and in-house courses, clinical supervision, peer support, mentorship, and work-based learning possible theory/practice gaps are reported to remain (Tynjala, 2008, Moore, 2010). Therefore, education and support are essential for all nurses. However, currently there appears to be no countrywide standards for how medication training is developed or delivered and therefore is at the discretion and expertise of the Trusts, which may result in different standards and outcomes across the country. Usually, this training is competency based and often takes place within busy clinical departments supported by the existing staff within the department who may not be given protected time to undertake these duties. Therefore, support is essential in helping staff to develop their knowledge and skills.

6.5.2. Staff support

Although the participants recognised the need for support for learners and junior staff the ability to provide this was a problem as highlighted by Dawn who explained:

“You got quite a lot of support for the first couple of days and then people forgot”

Dawn explained that this had affected her experience and confidence resulting in Dawn being seen as ‘competent’ even though she felt unready for this. This lack of confidence also resulted in feelings of guilt when the NQN’s were unable to do the jobs themselves and therefore had to leave more work for the existing staff.

Even when the nurses were allocated a named mentor or preceptor they were often finding that due to a lack of time or the workload they were often unable to work with the person and therefore lacked support overall. This inability to work with the mentor or the person providing support during the initial stage of a nurse’s career is a concern. This period is of paramount importance where the newly qualified nurse develops her knowledge and skills and practices and likely to be a time when they are the most vulnerable to adopting practices which they observe from others both good and bad. However, this is not a new problem, in 2002, Pulsford, Bolt and Owen (2002) reported that mentors often reported having difficulties finding time to spend with learners, completing paperwork and gathering information. In 2006 the literature advocated that mentors and students must have more time together (Pulsford, Bolt and Owen, 2002, and Wilkes, 2006), This finding was echoed by the students and mentors who requested more management support with regards to time and prioritising of demands (Pulsford, Bolt and Owen, 2002). This problem of mentors providing support is important and remains problematic as seen by Veeramah (2012) who pointed out that these mentors report a lack of time, inadequate preparation for the role, and having too many students at any time. Vinales (2015) agreed suggesting that mentorship is not an easy role and there are several barriers which nurses must understand if this role is to be successful. One interesting issue here is that the mentors had similar problems in relation to fulfilling their mentorship duties as they did with the issues

affecting medication administration such as lack of staff, skill mix, time and distractions and this again this resulted in conflict between their two roles.

Clinical nurses act as role models to students and junior staff by being observed and demonstrating effective work practices to a professional standard. It is often the skill and values of these role models which affect the resulting behaviour of the staff within the department and can help the staff member to fit into the team and adopt the team values and norms within that area as their own (Lawton et al 2012). This learning from senior colleagues or mentors is essential to allow the learner to develop their skills from beginner to expert (Benner, 1984) with support. Hunter et al (2008) define this initial learning as the 'orientation of nurses or learning to do things the way we do things here'. Lim and Honey (2017) argue that this support should be for all nurses in an ongoing way to ensure NQN's can develop their knowledge and expertise. Although evidence supports the benefits of this role as it is effective at helping to implement learning and develop their knowledge and skills (Perry, 2008). When it is ineffective due to excessive workloads, low staffing numbers and lack of knowledge of the role model it may result in staff who are unwilling or unable to support junior staff which could result in negative effects on the staff and practices within the department. Aydon et al (2016) agreed suggesting that although nurses felt it was their responsibility to do the right thing for patients and question medications, lack of time, increased pressure and unsupportive staff were factors which affected the nurse's decisions to question medications. In this case although all newly qualified staff or new staff to the area were given, mentors, the mentors themselves found this to be challenging to manage as they were unable to find time to work with the student or complete paperwork unless they used their own time, which increased their stress.

This increased stress is also not a new finding, Hutchings, Williamson and Humphreys (2005) outlined how mentors, managers and matron's anxiety levels increased when supporting learners in busy departments. This meant that nurses were left without support or passed to other nurses to supervise who may not have the same knowledge and skills and according to Jess may not have the skills to deliver the training in the correct way or with the right information thus increasing

the risk of poor practices. This potential lack of teaching skills or knowledge was also highlighted Grace who suggested that there should be agreed ways to teach something as the staff do things differently and may have differing ideas on how to interpret policy.

This problem of staff teaching things differently was also highlighted by a study by Harris (2014) who found that NQN's reported observing inconsistencies in the interpretation of the policies and the ways these were implemented during supervised sessions which left them feeling confused and concerned about the safety of the standards being displayed. This study has highlighted several issues which may be of concern which includes the initial difficulty in supporting staff development, the difficulties for staff when trying to master the skill and the difficulty for staff who support staff completing their competency. One issue which has been consistent throughout this study is the fact that medication errors continue to be a problem within the NHS, however there are also the problems with staffing, skill mix, lack of support and training.

6.5.3 Summary –Staff Development

This category confirms earlier evidence which demonstrate many factors contribute to the ability or inability of staff to attend training or development activities as illustrated in Figure 16 (p230). Although all staff new to the Trust were expected to complete a self-directed competency pack and a study day prior to undertaking single-handed medications the participants argued that this was inconsistent and that there were variations in the experiences of this in practice. The development of these skills was through working on the ward and developing competence through observation of others and supervised practice. However, there are potential problems with this approach. Although some of the participants found this an effective method to develop their skills others were unable to spend time with their mentor due to a perceived lack of time and the challenges within the department.

This supported earlier work by Meyer et al (2007) who found that high workloads prevented learners from practicing their competencies from courses and made it difficult for experienced staff or mentors to be able to spend time supporting

learners or acting as assessors which Monlfenter et al (2009) suggested was essential to increase the learners' confidence and the chance of developing new skills. Newton et al (2009) agreed that learners reported the indifference to students from ward staff, a lack of learning opportunities in practice and that learners were frequently unable to spend time with their role models or mentors.

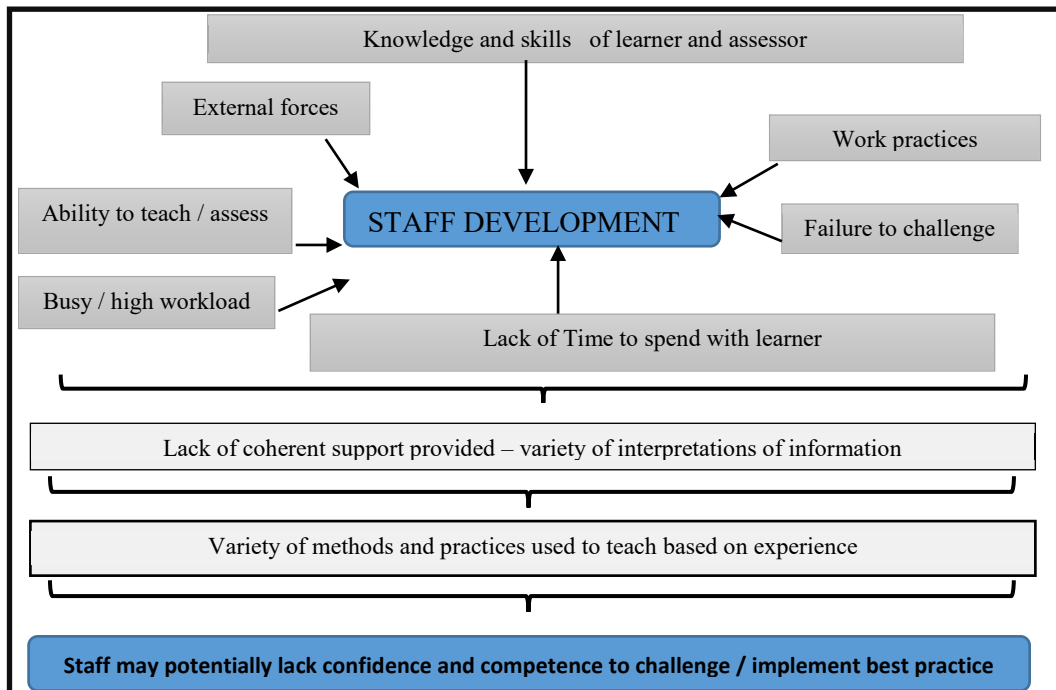


FIGURE16: FACTORS AFFECTING STAFF DEVELOPMENT

Although newly qualified staff had undergone medication administration practice during their training, the fact of moving from supervision to administering alone required confidence and practice. However, sometimes this not possible and therefore new nurses often took longer to complete their competencies or had to do it in their own time with the good will of the staff to support them. This delay with staff completing their competencies then potentially resulted in a loss of confidence or increased stress. This study supports the findings of the Maxwell et al (2011) who found that the lack of support resulted in a 'severe loss of confidence' therefore, this support was essential to the transition of the student to qualified nurse (Voldbjerg et al 2015).

One area which is essential to ensuring this skill is developed effectively is the skill and knowledge of the assessor. Questions were raised as to whether staff

questioned the learner effectively to assess knowledge or whether they had the up to date knowledge themselves, especially if they had not updated their knowledge for a while. Previous research indicated that retention of knowledge was problematic without access to information and education programmes (Mc-Bride, Henry and Foureur, 2007). However, staff reported how they were often ‘pulled off’ such study days to manage the wards in times of staffing difficulties.

The lack of countrywide standards for how medication training should be delivered leaves the content and delivery of training at the discretion of the Trust. With the highlighted differing interpretation of the policies and procedures, this would indicate an increased risk for patient safety. This concern of staff teaching things differently is not a new issue and was highlighted by Harris (2014) who argued that the inconsistencies in the interpretation of the policies and the ways these were implemented during supervised sessions often left staff feeling confused. Therefore, it is important that a more coherent and consistent approach to medication administration training would enhance safety. When asked, what would enhance patient safety in this area of practice all the participants suggested training and support? It is important to add that this does not mean the imposing of training regimes, however, a coherent plan and recommendations on the content and methods of delivery along with standardised competencies could potentially help to consolidate nurses training rather than confuse it. There is also a need to consider who should be assessing this practice skill and ask what knowledge and skills they need. For these reasons, it is important to ensure that where possible the issues which may exacerbate the workload are reduced. Therefore, to maximise the implementation of best practice it is important to:

1. Ensure mentors or preceptors supporting students and staff have appropriate protected time to ensure that staff have the support they need in practice.
2. Further research to identify ways to ensure post registered nurses have a consistent approach and mandatory updates on medication management
3. Further research to identify whether staff assessing competence in medication administration or other skills, have specific

knowledge and skills. It would also be useful for Trusts and education departments to have standards for educators teaching and assessing medication administration competencies.

6.6 The theory

This study suggests that decision making is a process which arises from the knowledge, values and beliefs of the individual and is affected by their ability to act and the trust they have in staff. This flow chart highlights an overview of the theory generated here which suggests that the factors affecting the implementation of learning or best practice into clinical practice are more than distractions, short staffing, skill mix or time.

This theory (outlined in Figure 17 p236) is based on the research questions and exploration of the experiences of registered nurses, the factors affecting the implementation of best practice and the factors which can enhance patient safety in medication management. The participants suggested that they are working in difficult circumstances and turbulent environments however still maintained a commitment to their role and patient safety. Their experience highlights several problems with staffing and lack of time and must make many decisions based on their knowledge and experience. The factors involved in implementing best practice is a multi-faceted issue and dependent on the decision-making process of the nurse.

This theory suggests that when practitioners have a decision to make, it is based on many factors, all encompassed by their own knowledge, skills, the organisational culture, past experiences, professional values, professional identity and their own personal beliefs and values. The practitioner weighs up the intended action and makes a clinical decision on what they should be doing in relation to the intended action, often subconsciously. This links to their past experiences, own knowledge, and whether they have the freedom or autonomy to act or in their minds will they be able to influence or change it. From this, they assess the likely consequences of the action, and whether it fits with their own value base and then decide what action is needed. At this point, the practitioner will consider whether they have the power to act, to influence others or whether they are feeling powerless in this situation and this will result in modifications to the practice if deemed appropriate and safe in their sphere of knowledge. Examples of this can be seen by the way the nurses were unlikely to observe the administration of the IVs as it was not the norm and was time consuming but 'safe'. The participants

will continually and often subconsciously be reflecting on similar situations and the outcomes as well as the level of 'trust' they have in their colleagues. It is at this point where staff who were feeling pressured felt that they could allow the 'over-trust' to occur all based on the past experiences, knowledge and consequences of their own and others actions unless there was any mistrust in the colleague.

However, during this decision-making process, the values may be in conflict as in the case of the nurse who knows they should report an incident but does not want to 'get a colleague in trouble' which can result in cognitive dissonance. This is the point when nurses decide on the course of action which can result in several choices, firstly to comply with the action, in which case this becomes the norm and they become part of the problem, to challenge, rebel or make an active choice to leave the role and move to new organisations looking for a place which would support their own values. This then results in less staffing and a cycle which continues to repeat. Throughout this process, the person and the team's professional identities continue to develop further, and new norms are established. To ensure patient safety is enhanced it is essential that nurses have the knowledge and skills to make critical decisions using an underlying knowledge of the key issues and factors affecting errors and cultural issues such as the work practices.

For these reasons, it is important that where possible these issues are explored to maximise the implementation of best practice. Therefore, it is important to ensure:

1. Nurses have the skills and knowledge to make effective decisions based on best practice including understanding the factors which can affect it including power, trust, and autonomy.
2. Further research is carried out into how trust, power and autonomy can affect the implementation of best practice

This chapter has discussed these findings and categories in relation to the resulting theory developed thorough this Grounded Theory study. It has placed the study findings into the contemporary literature and discussed the categories developed and the key concepts which were identified as important. This includes the concepts of trust, power to act and moral courage which is essential to ensure best

practice is implemented. This chapter has introduced the theory which developed through this Grounded Theory study which led to the identification of decision making as the core category (See figure 17 p.236)

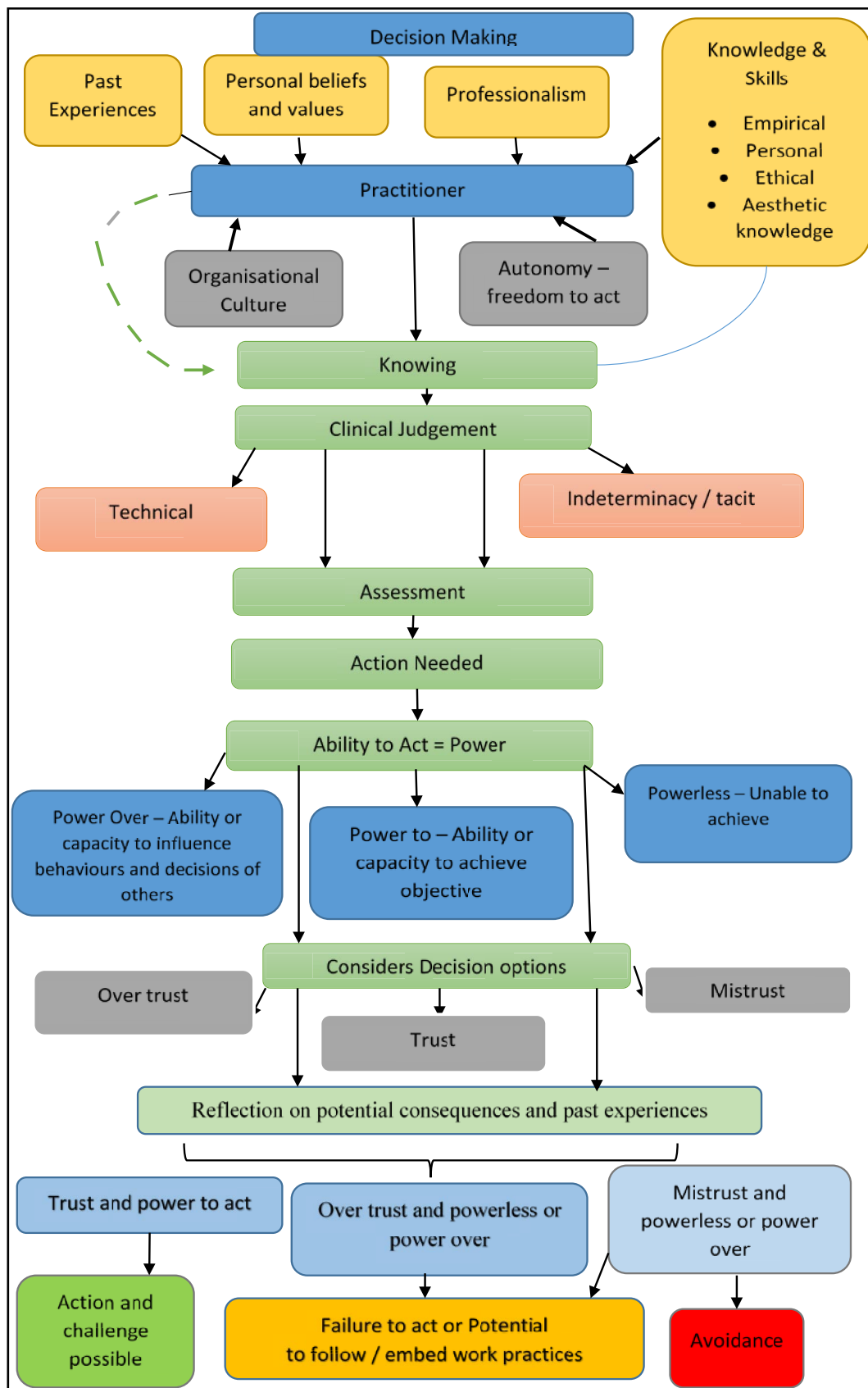


FIGURE 17: DECISION MAKING THEORY (IN MEDICATION MANAGEMENT)

Chapter 7: Conclusion

This study has outlined the Grounded Theory study undertaken as part of the professional doctorate to look at why nurses do not always use the evidence and learning undertaken in practice focusing on medication management. To focus on this there was an initial general review and then a focused review using medication administration as a focus. Following the completion of the results the data generated from the semi-structured interviews and vignettes were analysed using the constant comparison methods discussed above. Four categories were identified with decision making seen as the core category. This chapter will clarify the key findings for the study, the limitations, recommendations for future practice and the original contribution to practice found within this study.

The core category of 'decision making' is based on previous knowledge and experiences. It includes the way the nurses gain knowledge from the four ways of knowing by Carper (1978), which includes, empirical knowledge (facts), personal knowledge (experiences and values), ethical knowledge (moral reasoning) and Aesthetic knowledge (awareness of the situation) as described above. This knowledge is developed through the person's personal and professional education and experiences and based on their values and beliefs. It is important to recognise that this knowledge also includes the tacit knowledge which includes their perceptions of the situation and the resulting consequences of actions. When a new nurse enters a department all this experience and knowledge is used to work out the culture, the environment and the way 'they do it' or as Mullins (2004, p.520) suggests the 'norm' for that area. This need to fit in and understand the norms of the department is important for all staff as they want to fit in or do not want to 'Rock the boat'.

The positive values and professionalism of the NQN's are important during and after training, however, new starters often feel vulnerable and uncertain. This uncertainty can then lead to nurses wanting to fit in and being unable to challenge and therefore adopting behaviours which then causes conflict and the potential to lead to values dissonance discussed earlier. If their own values and professionalism conflicts with the actions or decisions, the NMC code, and the nurse's responsibility to protect patients and advocate for them the moral reasoning comes

into play. Morton et al (2006) outline the framework developed by Rest in 1984 which includes four stages of moral development. This includes moral sensitivity, moral motivation, moral reasoning and moral character which they argue leads to moral behaviour. Morton et al (2006 p.389) argue that moral motivation is concerned with “prioritising moral values and taking responsibility for the outcomes”. Moral sensitivity is where the person becomes aware of the moral problem or conflict. In this case, it could be the lack of time and staffing, increased workloads and the need for two people to go to the patient. This is said to be when the reasoning begins to determine the actions needed. It is also when potentially the moral distress and the values dissonance may occur, and the nurse perceives a conflict to her values. In the situation with the two nurses going to give IV's it is at this point the nurse will consider her options. Does the nurse make a stand and ensure she goes to the patient with the other nurse? Does she have the moral courage to challenge or does she comply so that she avoids ‘rocking the boat’. It is envisaged that all the knowledge and experience is being used to discover an answer to the problem, where they consider the potential outcome, or the consequences they may face depending on the decision.

There are several issues which will influence the way the nurses respond. This includes the fairness or achievability of the procedures or policies which may result in rebellion or adapting the procedures. It also includes the inability of staff to challenge or act due to fear of the consequences, the work practices and the resulting peer pressure as well as the perception of risk and the way the actions are made acceptable for example in the case of the participants lack of concern over the paracetamol scenario.

One of the considerations which then take place is the perception of power. As outlined by Coleman and Earley (2005) there is three levels of power, the ‘power to’ achieve the objective, and ‘power over’ others which will enable the nurse to influence others which can be for either positive or negative practice and feel powerless. It was interesting to see that some participants felt powerless to challenge. The ‘power over’ can be used in two ways positively as a leader to empower and support others but also with the abuse of power. For nurses to be able to achieve their object they have to be able to believe they have the ‘power

to' change practice. As discussed above this perception of having the power to question or change practice is not always seen although there were several accounts of participants who did feel confident to use their power to challenge.

Once these things have been assessed the person will make the decision however often other factors will impact on this, for example, the issue of trust. As discussed above the concept of trust is the mechanism through which relationships are developed and that these relationships are the way that organisations manage their work (Farrell, 2002). Dinc and Gastman (2012 p.223) defined trust as "an attitude relying on confidence in someone". The researcher found it difficult to find significant evidence on the concept of how trust between nursing staff potentially affected practice. However as illustrated by Pask (1995) it is a human requirement and natural outcomes of relationships that we rely on, especially in nursing where it is imperative to work as a team, trusting and relying on each other. Although the participants agreed that this trust is fundamental to nursing practice and effective care they also suggested that in times of continual changes, short staffing or high workloads this 'trust' can then become a problem. Examples of this unsafe or over-trusting environment are where they may leave others to administer IVs alone when the policies dictate two nurses to administer or where they may encourage NQN's to do their assessments quickly and then do the medications alone despite their requests for further time.

Understanding these concepts such as power and trust is essential if we are to understand why despite knowing the expected actions (policy compliance/ implementing learning into practice) these actions are not always followed through. However, nurses are bound by the NMC code (2015) to protect patients and maintain the integrity of the profession. The NMC code states that nurses must "uphold the reputation of your profession at all times, display a personal commitment to the standards of practice and behaviour set out in the code and be a model of integrity and leadership for others to aspire to" (NMC 2015 p.15. It is paramount that nurses develop their professional identity to ensure they are maintaining their professionalism. Bunkenborg et al (2013) suggests nurses must have personal involvement by reflecting on their clinical practice, knowledge, skills and clinical experience. However, maintaining this professionalism is

dependent on many factors including maintaining competence, updating and refusing to take on duties which they are not competent. There is also a requirement for moral courage when challenging, even if seen as difficult in the current climate

The evidence of increased workloads, staffing and skill mix issues remains. There have been many drives to recruit from overseas, but this has added pressures and so is not a quick fix. The participants in this trust have been undergoing a change for over a decade and continue to aim for high standards. This study suggests that the increased workloads, low staffing and skill mix, as well as the challenges discussed need improvement. However, to improve these there must be a challenge and the acceptance that the individual can make a difference. What is clear in these findings is that staff from all levels of experience found challenge difficult and stressful and is avoided if possible. This finding was surprising to the researcher because the organisation had two strategies to empower staff to challenge, the 'stop the line initiative which is for areas where staff perceive an imminent danger and the OPCE initiative (Durham and Sykes 2014a). Despite this organisational permission, the participants still found this to be a problem. Only when all staff working in health care are open to challenge and willing to challenge others can the profession change practice. It is of great importance that the profession develops awareness of the risks of over trust and the lack of empowerment. There needs to be a commitment and time to ensure nurses have adequate and effective training and support with all aspects of implementing the best practice. However, this study suggests that staff remain fearful of the consequences and challenge continues to be ineffective and infrequent. The factors involved in implementing best practice from learning, policies, procedures or other evidence are complex and therefore it is important that methods to change these are implemented with to ensure nurses can make autonomous decisions to implement best practice with safety, knowledge and confidence.

7.1 Limitations

A key responsibility within primary research is to identify any areas of weakness which are inherent in any research. This review of the research limitations will help to enhance the transparency and credibility of the research. One limitation of this study was that this was undertaken in one hospital, under constant change with some unique challenges. Therefore, the findings from this research are not transferable outside of the organisation. However, it is important to recognise that qualitative research is not aiming to generalise but to add to the body of knowledge (Ellis 2013 p.23). This research was completed in an NHS hospital which like many are undergoing constant change and challenges. As highlighted by the literature these challenges of staffing and skill mix remain constant and therefore this study does add further insight into the potential problems which staff may face and the decisions they may choose based on these challenges, their knowledge and experience as well as the evidence base. It provides an insight into their decision-making processes as well as adding further evidence to the overall body of evidence in the nursing literature on this topic.

Another limitation was that the researcher was known to the participants and in a position of perceived power. This relationship between the participants and the researcher is an important issue which researchers must consider as it may result in a bias including their influence on the participants and the findings. Some of the consequences of this may have been that the participants may have responded to questions about what they thought the researcher wanted to hear or left out other aspects which could have enhanced the understanding of the subject. To minimise this risk, the researcher used vignettes and allowed the participant to answer in their own words. These words were then used to develop the theory to ensure that the researcher impact was minimised. The researcher used a reflective approach by keeping memos and filed notes. The researcher tried to minimise the risks by going back to the participants and asking them to check for accuracy and to identify any themes they felt were seen within their scripts which supported the researcher's findings or to suggest others which may have been missed. It was interesting to note that all participants asked confirmed the themes identified by the researcher.

It is also important to note that as part of the doctorate, this study has taken over 6 years to be concluded. This extended time is important as the organisation where the research has taken place has continued to move on and changes have occurred which could suggest that these findings may be out of date. However, as identified in the literature above these issues continue to surface in the care environments. In addition, the challenges of change continue with a new takeover bid being underway and staff issues continuing in the Trust concerned and in the wider NHS. Therefore, the researcher would suggest that these findings are even more important now to add to the body of knowledge and to suggest ways for the profession to explore the challenges we face, and the recommendations may be useful in taking this forward.

7.2. Recommendations for practice

7.2.1 Practice

Recommendation 1: This study suggested that there are benefits of tabards to reduce interruptions, however these could be ineffective and a ‘tick box’ exercise. One way to easily rectify this would be multi-coloured disposable tabards which would continue the ‘surprise’ element preventing staff becoming complacent. Although this may have benefits, it is also essential that when organisations take on new initiatives based on research, the evidence is strong and well evaluated. Although the findings from the research, on the tabards was well developed, this was inconclusive. It is often tempting to take on board evidence which could in effect give ‘quick wins’, however, all organisations are different with differing cultures, staff, attitudes and values. Therefore, it is essential that staff implementing new areas of practice have the knowledge and skills of change management and sustainability for projects. Mentorship and coaching from experienced change agents and the inclusion of this topic in leadership programmes for preceptorship and leadership courses would help to achieve this.

7.2.2 Research

Recommendation 2: This study suggests that there is a complex decision-making process when nurses are managing medications. Although this study looked at only one aspect of practice (medication administration) similar findings in relation to

the organisational, professional and cultural issues have been seen in many other areas of practice including manual handling, pressure ulcer management and mentorship (Moore, 2010, Swain, Pufahl and Williamson, 2003, Veeramah, 2012). Although there is agreement that this may be due in part to staffing, skill mix and cultural issues, it is important to understand the deeper reasons why the implementation of practices continues to fail. Therefore, further studies exploring the concepts, of challenges at work for nurses, moral distress, challenge, trust, autonomy and power and how these affect decision-making and patient safety, would enhance our understanding of the failure to implement best practice.

Recommendation 3: It is essential that within professional relationships nurses feel confident to question, rely on colleagues and work together to ensure safe effective practices. Trust is a firm belief based on knowledge and evidence and allows developing teams to build effective working relationships; it is important that staff understand the concept of trust and how unsafe trust can increase risks in patient safety. Mistrust is the perceived failure to trust often due to past experiences. Over-trusting is where someone trusts the other person and accepts the ‘truth’ without any evidence. Although there is a well-known concept of trust between the nurse and patient there is less evidence on the concept of ‘Trust’ between the staff themselves and the effects of ‘trust’ staff to staff. Therefore, it is recommended that further research is needed into the concept of ‘trust’, mistrust and ‘over-trust’ and how this affects practice as well as implementing training for all staff in the concept of minimising ‘over trust and empowering staff to enable them to have ‘power’ over their work load and practices.

7.2.3 Education

Recommendation 4: To enhance patient safety there is a need for training to be developed to empower existing staff to enable them to develop the skills required to manage distractions, challenge and develop effective decision-making skills. Challenge is an issue which many nurses both experienced and inexperienced find difficult due to a lack of knowledge, confidence, fear and the perceived consequences. It is essential that as a profession staff develop processes to ensure that this open learning culture becomes the norm rather than being dependent on

the individual organisations. However, for this to be implemented we need an NHS culture of openness. One method to implement this could be the OPCE framework published by HEE in 2014 (Durham and Sykes, 2014a) to foster a culture of openness, challenge and learning. This study suggests that this culture of openness is not yet in place therefore, leadership and training programmes must ensure that all NHS staff are encouraged to develop the ethos of being open to challenge themselves and have the moral courage to challenge with support for all health care colleagues in practice.

7.2.4 Policy

Recommendation 5: Staff development is essential to ensure the implementation of best practice and increase patient safety. Therefore, there needs to be protective time for staff support and development to ensure that training is safe and effective in human factors, risk management, decision-making and the effects of trust and failure to challenge.

Recommendation 6: There is clear guidance to support the development of student nurses, and preceptorship, however, the commitment to developing the skills of the staff nurturing these nurses is not always clear. Mentorship equips staff to support student nurses but does not ensure that nurses have the skills needed teach effectively. Therefore, further research and discussion throughout the profession are needed to identify whether staff assessing competence in medication administration and other nursing practices have the competence, knowledge and skills in the activity. They should also explore whether to have agreed standards for educators teaching and assessing skills such as medication administration competencies.

7.3 Original contribution to knowledge

This study has explored the experiences and knowledge of the nurses from one district NHS hospital who took part in medication administration. The questions were developed from the literature search and incident data from the NPSA (2012) and the Trust. The participants discussed their own knowledge and learning experience and how this related to their practice. It was clear that the nurses maintained their high values however sometimes when in conflicting or difficult

environments there was a potential tendency to 'cut corners' from 'best practice' or evidence-based practice. This evidence-based practice was said to include research, policies, procedures as well as experiential learning. This study explored the concept of best practice in relation to the implementation of nurse's knowledge, learning and best practice using medication administration as a focus and builds on the existing body of knowledge.

This study supports earlier research which suggested a lack of staffing, skill mix, time, attitudes and behaviours all impact on the implementation of evidence-based practice and learning into practice and therefore adds to this body of evidence. However, this is not the full picture. The study's contribution to the field is the resulting theory on the nurse's decision-making processes when they are experiencing these challenging situations. This suggests that nurses make decisions based on a wide range of factors, and this is a complex situation based on the nurse's knowledge, experience, confidence as well as the level of trust they have in their colleagues. This decision to act is dependent on the nurse's professional identity, their perception of risk and potential outcome to themselves, patients and colleagues as well as their understanding and feelings of empowerment and power to act. These decisions are also complicated by the nurses' personal and professional values and especially by the personal and professional values of their peers and managers and the culture in the organisation. The findings of this study suggest that there is a need for further evidence in how nurses use the concepts of trust, power and courage to enhance patient safety. The need for staff to be empowered to challenge and be challenged is essential to support patient safety. It was clear that nurses recognise the importance of challenging poor practices and these cultures, however, this study highlights that undertaking this challenge remains difficult and there is little evidence on ways to support the staff in developing the skills required to empower them to do so.

This study suggests that when nurses are under pressure and they prioritise the important aspects of care and their decisions are based on their experience, values and personal and professional knowledge. This is also dependent on several other issues including whether they feel they have the power to achieve the required action or whether they are powerless to act to change practice possibly because

they think it is a waste of time or would have no effect. If they believe there is no point, they are likely to adopt coping strategies based on their knowledge and the perceived risks to patients and themselves. This is especially true when the person feels the action needed is difficult, counter-productive or a waste of time or if it has consequences for themselves or others. If nurses perceive that the processes are unfair or unachievable they may rebel and modify the practices resulting in the work practices and rebellion to become the norm.

Trust is a little-explored concept in nursing, however, one which has a significant impact on patient safety. Therefore, it is important that the role of this in implementing evidence-based practice is explored further. The potential for over-trust needs to be raised at the student level and throughout the profession to ensure this recognised and that nurses understand the impact of this when used in an unsafe manner. It is imperative that nurses are accountable for their actions and to have the moral courage to act to ensure they are acting within the professional expectations of the NMC as outlined in the code (NMC, 2015). For over a decade the nursing profession has attempted to improve practice and reduce the errors occurring with little headway. The issue of the multifaceted effects of the decisions made by the nurses and the many considerations support this.

This study has attempted to explore the nurse's knowledge and decisions when using evidence whether from policies procedures or learning in more depth. It has drawn these factors together to look at how these individual concepts affect the others and work together to influence practice. It has also identified that this problem is unlikely to be solved until we understand how the values, attitudes, beliefs, affect the risk management and decision-making processes in practice. We also have to consider the levels of trust between the nurses and the perceptions of their power to influence change. This study suggests that if nurses feel powerless to act in relation to their own values base and professional identity, they may experience cognitive dissonance, which can result in challenge avoidance, moral distress, burnout, avoidance or rebellion, increasing risks and affecting patient safety.

7.4 Reflexivity Statement

Throughout this study, the researcher used reflexivity to explore and to understand their impact on the research and to ensure that all decisions made were identified and justified. The research questions and methods were undertaken following extensive reviews of many research methods. There were attempts throughout to minimise the effect of the researcher bias including the use of the lead nurses to check the vignettes, the gatekeeper to approach the participants, reflective field notes and memos and member checking. It was interesting to the researcher that at the start of the study after both literature reviews the concepts of decision making in relation to trust, rebellion, power, and courage was not considered as being part of the issues involved with preventing best practice. The contribution to practice of expanding the evidence base and of expanding the understanding of this topic has raised many questions for the researcher and expanded her knowledge not just of the topic but also the research process. This knowledge has been a continual and lengthy process, at times challenging and daunting it is interesting to recognise this is another beginning rather than the end.

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Appendices

Appendix 1: NHS Values (Sykes and Durham 2014)

[Redacted from this version due to copyright]

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Appendix 2: Review of preliminary Research review literature

Article number	Included Study	Aim of study	Design and data collection methods	Participants	Data analysis	Findings	Factors affecting learning	Resulting themes
1.	Gerrish et al (2008a)	To compare factors influencing the development of evidenced based practice identified by junior and senior nurses	Cross sectional survey using a questionnaire	1411 questionnaires with 598 responses (42%)	SPSS Descriptive statistics calculated for each item and correlated with each other using the Pearson correlation. T'tests were also taken to identify the potential differences between junior and senior staff	<p>Nurses relied on personal experience and communication with colleagues rather than formal sources of knowledge.</p> <p>Junior nurses perceived more barriers to implementing change and less confidence in accessing organisational evidence, Junior staff perceived Lack of time Lack of resources as more of a problem than senior staff</p> <p>Difficulty in judging research evidence</p> <p>Barriers to changing practice from colleagues, managers and medical staff</p>	Organisational and environmental factors affect implementation of learning	<p>Experienced staff have more confidence in implementing change</p> <p>Junior staff perceived Lack of time</p> <p>Lack of resources as more of a problem than senior staff</p> <p>Difficulty in judging research evidence</p> <p>There were some Barriers to changing practice from colleagues, managers and medical staff including the culture of the environment unreceptive to change, medical staff unresponsive to change</p>
2.	Maben, Latter and	To identify the extent to which	Longitudinal study	72 final year students in	Constant comparative	Despite NQN's 's having strong	Organisational and	Nurses finish training with strong set of values

	Macleod 2006	the ideals and values of the pre-registration nursing course are adopted by individual NQN's	Questionnaires In depth interviews	three colleges completed questionnaires 26 participants at 4-6 months and 11-15 months participated in in depth interviews	analysis based on categorizing the data	professional values professional and organisational sabotage including obeying covert rules, lack of support, poor nursing role models, time pressures, role constraints, staff shortages and work overload prevented learning being embedded.	environmental factors affect implementation of learning	Obeying covert rules Lack of support Poor nursing role models Time pressures Role constraints Staff shortages Work overload
3.	Meyer et al 2007	Assess the impact on nursing practice of critical care skills and the barriers and opportunities to successful learning transfer	Semi structured interviews	47 course attendees and 19 managers	Coding and analysis using NVIVO Coding reviewed until saturation and reviewed by another group of experienced researchers	Course to be collaboratively designed, Focus on relevance of material, time to practice, barriers including lack of time to practice skills and the inability of staff to work with clinical skills facilitators	Organisational and environmental factors affect implementation of learning	Lack of perceived relevance to role Lack of time Lack of supernumerary time Lack of time to practice skills or work with facilitators
4.	Moore & Price 2004	Staff nurses attitude, behavior and barriers to implementing pressure ulcer prevention practices	A cross sectional survey method	300 Staff nurses working in acute settings Pre-piloted questionnaire	Data analysis was carried out using the statistical package for social sciences (SPSS) base version 10 and SPSS Text Smart	Positive attitude to pressure ulcer prevention Practices were haphazard and erratic Affected by lack of time and staffing	Organisational and environmental factors affect implementation of learning	Lack of time Lack of staff Patient specific problems Lack of equipment Lack of knowledge / training (4)

					version 1.1. SPSS allowed quantitative analysis of the Close-ended questions. Text Smart allowed analysis of Text based questions.			
5.	Kyrkebo & Hage 2005	Improvement knowledge in clinical practice as experienced by nursing students with respect to a person centered perspective	6 Focus groups involving four to five students	27 2 nd year nursing students at one university	Typological coding approach	Deficiency in improvement knowledge within clinical practice and a gap between what students learn and what they observe in wards to include lack of time and resources preventing the patient being the prime focus, dilemmas in clinical practice, e.g. between nurse report and patient experience, withdrawal and negative reactions, no common plan between inter-professional health professionals, reflection process useful, learning environment difficult as different practices than expected by students.	Organisational and environmental factors affect implementation of learning	<p>lack of time Lack of resources Needs competent role models Students experience a gap between what they learn and what they see There is lack of knowledge and use of improvement science in nursing</p> <p>Students learning is influenced by system of care, culture, role models and reflection in and on reflection.</p>

6.	Newton et al 2009,	Examines how student nurses knowledge and skills gained within a laboratory transfer into the reality of the clinical environment	One to one interview Observation in six clinical environments Data from study from first interview during either the second or third year of the students study	28 second and third year student nurses (20 second year students, 8 third year)	Thematic analysis Team members worked together to code the initial transcripts until consensus was reached Analysis by NVIVO analytical coding	Transfer is linked to learners learning preferences, the affordances the workplace offers the learner and the willingness of staff to provide exciting learning opportunities	Organisational and environmental factors affect implementation of learning	Learning preferences Lack of engagement i.e. the classroom is not real, Indifference to students from ward staff, Lack of learning opportunities in practice Lack of teacher in practice
7.	Ploeg et al 2007	Factors affecting the implementation of evidence-based practice	Survey	59 administrators 58 staff and 8 project leads participated in post implementation semi-structured interviews	Analysis by two researchers using thematic analysis	Positive factors implementing guidelines include group interaction on the guideline, positive staff attitudes and beliefs. Leadership support, presence of champions, teamwork and collaboration Negative staff attitudes and beliefs Limited integration of guideline recommendations into organisational structures and processes	Organisational and environmental factors affect implementation of learning	Negative staff attitudes Limited integration of guideline recommendations into organisational structures and processes Time and resource constraints Organisational and system level change including staff turnover, staff rotation, structural reorganization and lack of resources

						Time and resource constraints Organisational and system level change		
8.	Swain, Pufahl and Williamson 2003	To answer 3 questions Do students know what they should be doing, do they do what they should be doing and if not why not.	Survey design Self-report questionnaires	148 adult branch students in one educational institute	Data analysed by SPSS 2 nd independent coder coded to test inter-rater reliability	Students identified that they were often unable to use recommended techniques even if they knew about them, said to be because of the influence of other nurses. Lack of equipment, patient needs. Male /younger students more likely to adopt poor practice.	Organisational and environmental factors affect implementation of learning	Influence of other nurses Lack of time Lack of equipment Patient needs
9	Hunter et al (2008)	To explore how nurse clinicians learn from each other	Ethnographic 12 month fieldwork including observation involving participation and in depth interviews in paediatrics hospital	32 nurse clinicians 14 medical registrars, Five allied health professionals A nurse educator A clinical nurse consultant, a nurse manager, five senior medical specialists and one	Qualitative, thematic analysis using keyword Data entered into the ethnographic version 5.0 programme	Time is needed for learning in busy workplaces for reflection and learning to take place	Organisational and environmental factors affect implementation of learning	review how nurses learn in the clinical environment Need for allocated time for learning and reflection

				administrator worker (57% of the unit population				
10	Moseley & Davies 2007	To assess whether mentors had a positive or negative attitude towards their role and to identify what they found easy or difficult	Questionnaire using Likert and Thurstone scales and Likert scales to assess the difference.	86 mentors	Thurston and Likert scale	Mentors had positive attitude to their role They found that organisational constraints (workload and skill mix) as well as interpersonal and knowledge gaps caused them difficulties	Organisational and environmental factors affect implementation of learning	Mentors had positive attitude Workload Skill mix Inter-professional issues Time constraints Cognitive issues assessing, providing constructive feedback, creating learning environment

Appendix 3: Review of Key Research Literature review part 2 Medication administration

Article number	Included Study	Aim of study	Design	Data collection methods	Participants	Data analysis	Findings	Resulting themes
1	Dougherty, Sque and Crouch (2011)	To review decision-making processes used by nurses during medication administration	Three phased ethnography study	Focus groups, observation and interviews.	20 RN's	Five stage approach identified in the article.	An insight into nurse's decision-making processes which could be utilised for further prevention of medication errors	Major themes included: interruptions, patient identification, routine behaviours and prevention of errors.
2	Eisenhauer Hurley and Dolan (2007)	To document nurses thinking during medication administration.	Unidentified	Semi-structured interviews and tape recordings 40 nurses in practice	40 nurses in practice	Content analysis	10 descriptive categories were identified of the nurses thinking during meds admin	Nurses thinking; communication; does time; checking; assessment; evaluation; teaching; side effects; work around; anticipating problem solving; and drug administration
3	Gross-Fourneris and Peden-McAlpine	To understand the critical thinking in practice of novice nurses and the preceptor's role.	Case study	Stories	6 nurses/preceptors	Stakes phase of data analysis using four stages – description, categorical aggression, establishing patterns and naturalistic generalisations	2 themes – Preceptor education should incorporate the understanding of the impact of power and anxiety on critical thinking of novice nurses, creating dialogue and challenging thinking through sharing of perspectives.	Critical thinking as organising and carrying out tasks and critical thinking as intentional reflective thinking
4	Fry and Dacey 2007 UK	Nurses views on the important factors contributing to	Cross-sectional survey	A structured questionnaire	244 Registered Nurses (RN's)	SPSS 12.0.0	Nurses' views supported the literature identifying several factors which could affect medication errors.	Distractions Training and development Packaging Illegible medication charts

		medication errors.						
5	Hesselgreaves et al (2011) the UK	To develop a clearer understanding of patient safety issues	A mixed methods study	Focus groups	Four focus groups of nurses	Categorical analysis	The analysis of the incidents identified that they were consistent with the 'prevailing knowledge on medication incidents.	Categories identified included issues with handwriting, skill mix, drug knowledge, pharmacy contribution, education and training, skills practice
6	Kim and Bates (2012)	To study the rate of medication administration errors.	Unidentified	Questionnaire and direct observation	Numbers of participant's not identified – participants - identified from one surgical and one medical department .	Statistical (method not identified)	There was failure to adhere to medication guidance	Categories which were identified as a failure to adhere included a failure to adhere to: Five rights of Medication administration, basic infection control, recording of medication administration
7	Lawton et al (2012) UK	Identify the latent failures that are perceived to underpin medication errors.	Cross-sectional qualitative design	Interviews	12 nurses and 8 managers	Thematic content analysis	Ten latent failures were identified.	Categories included ward climate, local working conditions, workload, human resources, team communication, team communication, routine procedures, supervision and leadership, and training.
8	Maben, Latter and Macleod Clark (2006) the UK	To examine newly qualified nurse's experiences of implementing their ideals and	Interpretive qualitative design	Self-administered questionnaire	Phase 1 one week prior to RN training completion n=72	Content analysis	Within 2 years of qualification, nurses could be identified as sustained idealists, compromised idealists or crushed idealists	Disillusionment, job-hopping and retention issues.

		values into practice.			Phase 2 – in-depth interviews at regular intervals post-reg (4-6months, 11-15 months)			
9	Manias, Aitken and Dunning (2005)		A descriptive prospective qualitative design	Observation and in-depth semi-structured interviews	12 graduate nurses	Thematic coding process	Graduate nurses adhered to protocols if they were perceived as not impeding other nursing duties.	Themes included – availability and use of protocols, ID checking before administration, double checking meds, writing incident reports, following specific policies and timings of medications.
10	McBride-Henry and Foureur (2007)	To explore nurses understanding of medication errors and the contributing factors.	Focus Groups	Three focus groups	Each focus group consisted of 6-10 participants (exact numbers unknown)	Narrative analysis using QSR NVivo software	Several themes identified which included staffs understanding of the medication culture.	Themes included: Medication culture, communication, dysfunctional organisational systems and improvement strategies.
11	Murphy and While (2012) the UK	To investigate the medication administration practices of children's nurses.	Non-experimental survey design	Questionnaire	140 clinical staff working in the hospital	SPSS V 16.0	Multiple areas were identified in relation to medication administration in relation to the prescription and work environment	Themes included: prescription issues, lack of knowledge, limited confidence, and miscalculation of dosages, workload stress, fatigue, lighting, noise levels, interruptions,

								distractions, and staffing, junior nurses lacking confidence in challenging others.
12	Tang et al (2007)	To understand the process of medication administration	Focus Group Survey	Focus Group Questionnaire developed via focus group and researchers	9 RN's Number unreported but 72 responded	SPSS statistical software and Thematic analysis	Nurses suggested that medication errors occur because of multiple factors	Three main themes include: Personal neglect Heavy workload and new staff

Appendix 4: Research poster

Volunteers for research study needed!

Can you answer yes to the following questions?

1. *Are you a registered nurse?*
2. *Do you administer medications?*
3. *Would you be interested in improving patient safety?*

If you can answer YES to these questions, please consider being part of a small research study looking at identifying the factors which lead to errors and ways to reduce these.

RESEARCH STUDY TITLE

Factors affecting safe medication administration by registered nurses, the promotion of patient safety and the barriers which inhibit their implementation with an acute NHS Trust

Wendy Durham Practice Educator and Non-medical Clinical Tutor who is currently completing the Professional doctorate in Health and Social Care.

Supervised by: Dr Leslie Gelling PhD MA BSc (Hons) RN FRSA Reader in Research Ethics. Faculty of Health, Social Care and Education - Anglia Ruskin University;

Annette Thomas Gregory; Senior Lecturer Faculty of Health, Social Care and Education - Anglia Ruskin University

IF you agree to participate you will be asked to participate in a semi-structured interview and comment on vignettes (scenarios) using your experience and knowledge.

- **Your participation is voluntary**
 - **Your information and comments will be anonymised and kept confidential**
 - **You will be able to withdraw from the study at any time**
- For further information please contact the main researcher**

Appendix 5: Email to ward managers

Re: Factors affecting safe medication administration by registered nurses, the promotion of patient safety and the barriers which inhibit their implementation with an acute NHS Trust

Dear.....

As we discussed recently as part of my Professional Doctorate in Health and Social Care I am conducting a research study. This study will explore the factors affecting safe medication administration by registered nurses; the factors which can promote patient safety, and the barriers which inhibit their implementation within an acute NHS Trust.

I would like to take this opportunity to thank you for agreeing to send out this email to your registered nurses.

Please, could you send out the email below with the enclosed attachment by the --/--/-- to ensure all registered nurses have the opportunity to respond?

Thank you for your support with this

Kind Regards

Wendy Durham

Appendix 6: Email to the practitioner (potential participants)

Dear Practitioner

Re: Factors affecting safe medication administration by registered nurses, the promotion of patient safety and the barriers which inhibit their implementation with an acute NHS Trust

Medication errors continue to be problematic in the NHS. To ensure we can reduce these errors and ensure patient safety it is essential that we continue to look at ways to improve this area of practice. As you are a registered nurse participating in this area of practice your experiences and views on this are essential to ensure patient safety.

As part of my Professional Doctorate in Health and Social Care, I am conducting a piece of research. This study will explore the factors affecting safe medication administration by registered nurses and the barriers which inhibit their implementation within an acute NHS Trust with the aim of developing a trust wide approach to reducing medication errors. Your participating in this research will be greatly valued and may result in the development of improved practices within the Trust resulting in safer patient care.

Therefore could I ask you to read the attached information sheet that gives full details of the research study? If you wish to participate or would like further information please reply to this email and I will contact you so your queries can be answered and consent gained. The deadline for participation is --/--/--.

May I thank you in advance for taking the time to read this letter.

Wendy Durham

Appendix 7: Participation Information Sheet

Section A: The Research Project

1. The title of project:

Factors affecting safe medication administration by registered nurses, the promotion of patient safety and the barriers which inhibit their implementation with an acute NHS Trust

2. Purpose and value of study:

The purpose of this study is to explore the factors affecting safe medication administration by registered nurses, the factors which can promote patient safety and the barriers which inhibit their implementation within an acute NHS Trust with the aim of developing a trust wide approach to reducing medication errors. Potential benefits include safer practice and enhanced patient safety.

3. Invitation to participate:

You are being invited to take part in this research study because you are a registered nurse in the Trust administering medications. Your knowledge and expertise will enable us to identify the factors that influence medication errors from the perspective of registered nurses, the factor which improves patient safety and the barriers which inhibit the implementation of best practice in Medication administration. Before you agree to take part you need to understand what this will involve.

4. Who is organising the research?

Wendy Durham Practice Educator and Non-medical Clinical Tutor who is currently completing the Professional doctorate in Health and Social Care at Anglia Ruskin University

5. What will happen to the results of the study?

The results will be analysed and used to identify ways the Trust might improve patient safety and reduce medication errors. The results will be published as part of my thesis for the Professional Doctorate and may be used in publications or further ethically approved research in the future, however, no participant will be identifiable within the reports as any data you provide will be anonymised.

6. Whether you can refuse to take part:

You can decide whether or not you want to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without a reason. A decision to withdraw at any time or a decision not to take part will not affect the relationship that you have with the researcher in any way.

7. What will happen if you agree to take part?

If you agree to take part you will be asked to participate in a semi-structured interview using “vignettes” which are short scenarios or snap-shots of practice. You will meet with the researcher to review the scenarios and discuss areas of practice. Interviews will take a maximum of 1 hour and will be conducted in a small meeting room in the Trust at a mutually agreed convenient time.

The researcher guarantees not to breach your confidentiality. Any data collected will be maintained by the researcher and will be anonymised in all reports/publications. A summary of the research findings will be available at the end of the study for you to review.

8. Whether there are any risks involved (e.g. side effects from taking part) and if so what will be done to ensure your wellbeing/safety?

There is a risk that you might find reliving some experiences of medication errors distressing. The researchers would wish to minimise the potential for distress by stating at the beginning of each individual interview that the researcher and the lead nurses are available to you for further discussions and support and that all participants may choose the information they wish to share and that they may leave at any time without explanation.

It is important to understand that if you disclose any information to the researcher which might put any person or the organisation at risk the researcher may have to take further action.

9. What will happen to any information/data/samples that are collected from you?

Interviews will be recorded and transcribed. Data will be maintained in a locked filing unit maintained by the researcher. These will be destroyed in line with research guidelines. Once the analysis of the data are completed a summary of research findings will be made available following completion of the study by the report.

10. Benefits from taking part:

This is an opportunity to express your valued opinions and views regarding medication safety and will help to develop a Trust wide approach to safety in medication administration.

11. Contacts for further information

Wendy Durham

Supervisors: Dr Leslie Gelling PhD MA BSc (Hons) RN FRSA
Faculty of Health, Social Care and Education - Anglia Ruskin
University;

Dr Annette Thomas-Gregory
Faculty of Health, Social Care and Education - Anglia Ruskin University

YOU WILL BE GIVEN A COPY OF THIS TO KEEP, TOGETHER WITH A COPY OF YOUR CONSENT FORM

Thank you for reading this information sheet. If you have any further questions or would like further information, please feel free to contact the researcher.

APPENDIX 8: PARTICIPANT CONSENT FORM

NAME OF PARTICIPANT:

Factors affecting safe medication administration by registered nurses, the promotion of patient safety and the barriers which inhibit their implementation with an acute NHS Trust

Main investigator and contact details:

Wendy Durham
Practice Educator/Non-Medical
Clinical Tutor

1. I have read the Participant Information Sheet which is attached to this form (Version 1.0 20/07/2013). I understand what my role will be in this research, and all my questions have been answered to my satisfaction. I agree to take part in the above research.

2. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.

3. I have been informed that the confidentiality of the information I provide will be safeguarded.

4. I am free to ask any questions at any time before and during the study.

5. I understand that the interviews will be recorded.

5. I have been provided with a copy of this form and the Participant Information Sheet.

Name of participant

(Print).....Signed.....
.....Date.....

YOU WILL BE GIVEN A COPY OF THIS FORM to
KEEP

If you wish to withdraw from the research, please complete the form below and return to the main investigator named above.

Title of Project: Factors affecting safe medication administration by registered nurses, the promotion of patient safety and the barriers which inhibit their implementation with an acute NHS Trust

I WISH TO WITHDRAW FROM THIS STUDY

Signed:

Date:

Data Protection: I agree to the University¹ processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me*¹ "The University" includes Anglia Ruskin University and its partner colleges

Appendix 9: Interview Prompt

Initial questions

1. Could you tell me when you qualified as a nurse and about the medications management training in your pre-reg education?
2. Can you tell me how much experience you have of drug administration?
3. When you saw the information for this study initially what did you think it was about?
4. Tell me about the training and education that you have had in relation to administering medications?

Vignette review and discussion

Follow up questions

5. What factors do you think affects safe medication administration?
6. Can you think of some factors that contribute to drug errors?
7. What factors could enhance patient safety in medication administration
8. How does reporting of errors influence best practice.
9. What type of Education and Training might encourage best practice and enhance competence in drug administration?
10. What could the Trust do to help you improve medication administration?
11. What else do you think is important with medication administration?
12. Is there anything else you would like to add?

Thank you for participating in the study

Appendix 10. Vignettes for semi-structured interview

1. Jane is an RGN working a day shift on her usual ward. The ward is busy and Jane is a team leader for 12 patients. She has two experienced HCAs in her team. Also on the ward is Mary an RGN that has been with the ward for 6 weeks. She has to prepare IV infusion for one of the patients at her end of the ward. She asks Jane to check the IV with her. Jane thinks the prescription is poorly written but Mary says that she knows what it is. Jane watches whilst Mary prepares the drug for IV. Jane says that is for the patient in Bed 4, is it? Mary says yes, the poorly one and Jane returns to her own patients.

- Discuss the practice of Jane and Mary
- Identify demonstration of good practice
- Identify possible risks in this situation
- Discuss the practice in the context of patient safety, and policy for drug administration
- Discuss the value of the NMC Code in this context
- Identify potential outcomes from this story and why you come to this conclusion
- Discuss the actions of 'the average nurse' in this situation

2). Janice a junior sister on the ward is in charge of the shift. She has one HCA and two registered nurses on duty Elizabeth who has been on the ward for a month and is newly qualified and Jane who has been on the ward for a year. Another registered nurse has phoned in sick. Janice discusses the workload with the other nurses and starts to do the medication round. The junior nurse arrives in the ward and Janice asks her to supervise Mrs Brown with her medication. Janice then continues to dispense the medications to the patients. However on two occasions the patients ask her to leave them so they can take them with breakfast.

- Discuss the actions of 'the average nurse' in this situation
- What factors could have contributed to this incident?
- Discuss the practice in the context of patient safety, and policy for drug administration
- Discuss the value of the NMC Code in this context
- Identify potential outcomes from this story and why you come to this conclusion

3. Jessica, a staff nurse is doing the medication round at 22.00 and finds that a patient Mark who has had surgery two days previously has no signature in his

medication chart for his regular paracetamol. When asked he states that his pain is minimal

- Discuss the actions of 'the average nurse' in this situation
- What factors could have contributed to this incident?
- Discuss the practice in the context of patient safety, and policy for drug administration
- Discuss the value of the NMC Code in this context
- Identify potential outcomes from this story and why you come to this conclusion

4. Jessica continues on the medication round and finds that Patricia a patient on the ward has not had an antibiotic signed for at 18.00. The patient has had an acute infection and is unwell.

- What factors could have contributed to this incident?
- Discuss the practice in the context of patient safety, and policy for drug administration
- Discuss the value of the NMC Code in this context
- Identify potential outcomes from this story and why you come to this conclusion
- Discuss the actions of 'the average nurse' in this situation

APPENDIX 11: EXAMPLE OF DIGRAM: KEY CONCEPT OF TRUST

Concepts linked to trust from data

Trust = fragile, based on experiences, nurse's values, professional competence, consistency, accountability, and objectivism in decision making / Credibility/ benevolence

Mistrust – people are unable to or incapable of co-operating or acceptance of the truth of a statement without evidence or investigation

Under-trust – belief, lack of evidence, failure to challenge = perception

Credibility = individual belief that trustee is capable of fulfilling commitment

Benevolence – Inclination of trustee to prioritise interests of trustees

Overtrust – belief, lack of evidence, failure to challenge, = perception

Challenge, courage, knowledge, experience, understanding and autonomy

Accountability- accountable for all actions and omissions (NMC)

Responsibility – Duty / moral obligation/ set of tasks employer can demand

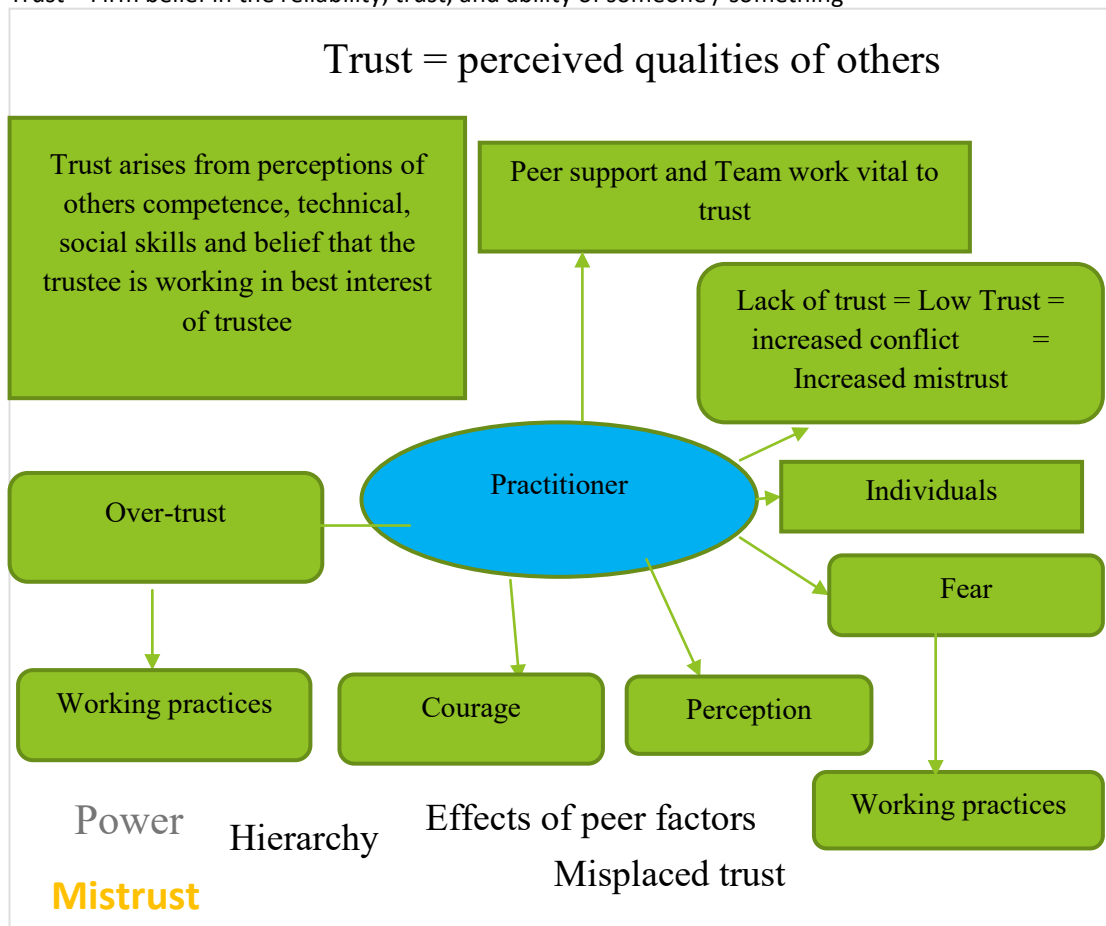
Autonomy – independence, Professionalism –

Perception - First impression on meeting = opinion

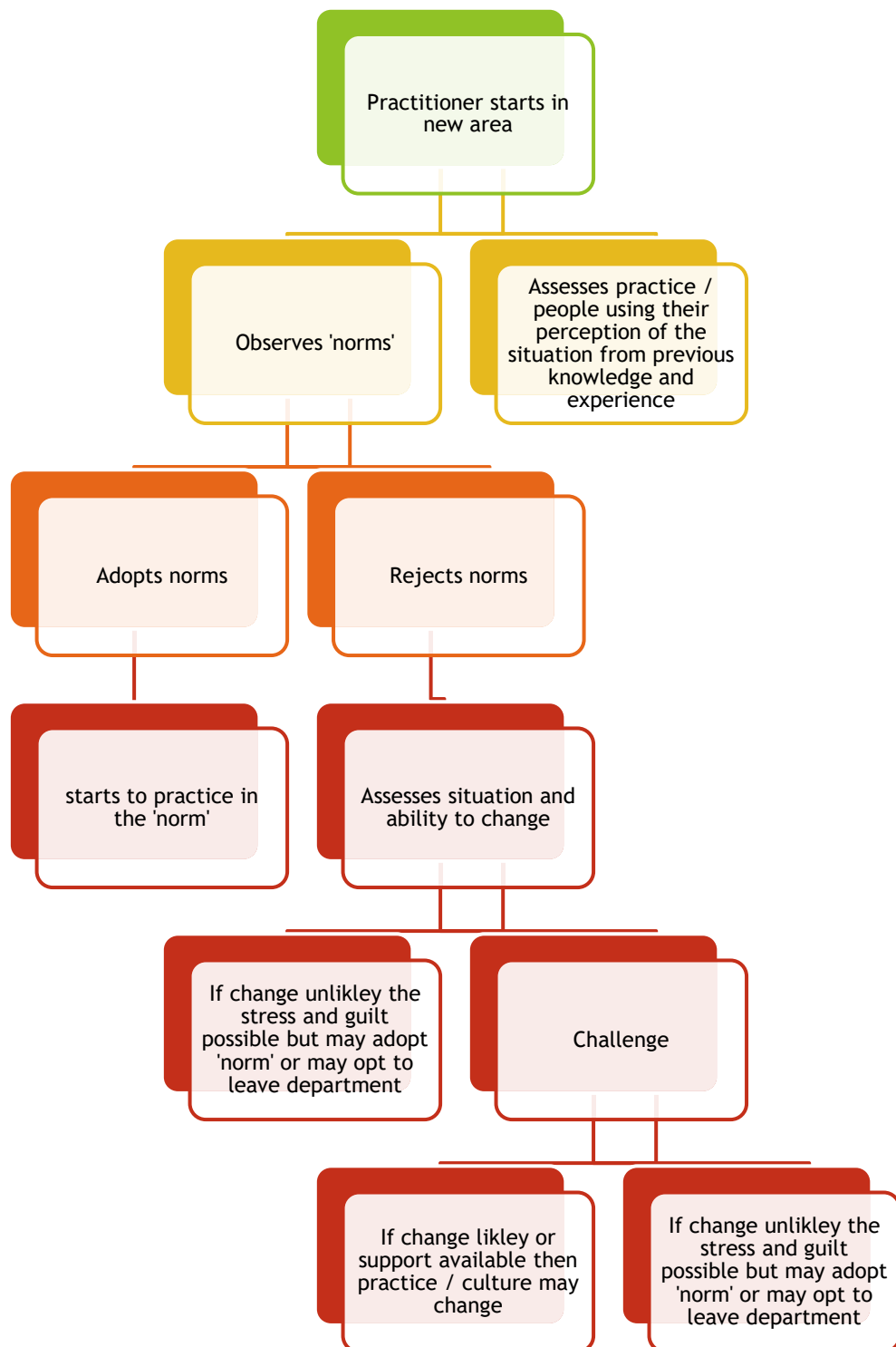
Nurse = influence – positive – bullying – disruptive behaviour – the way it is here!!! Culture – workplace practices – intimidation can affect medication errors and best practice =

HUMAN FACTORS error, organisational culture, shared practices, bureaucratic

Trust = Firm belief in the reliability, trust, and ability of someone / something



Appendix 12 Trust flow chart



Appendix 13 Ethical Approval stage 1 and 2

[Redacted from this version]

Appendix 14: Ethical Approval amendment

[Redacted from this version]