Does registered nurse (RN) involvement in improving healthcare services, influence RN retention?

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Abstract

Background: Registered nurses are 'critical' to population health, international responses to emergencies, epidemics and disasters. Retention of registered nurses is an international nursing priority. In England, registered nurses are encouraged to be involved in improving healthcare services. This benefits quality of care, operational and financial performance. However, registered nurse involvement in improvement may reduce registered nurse retention. It is important to understand this relationship when developing effective registered nurse retention strategies.

Aim: The purpose of this research is to describe possible relationships between registered nurse involvement in improving healthcare services and registered nurse retention, using published 2018 data for National Health Service trusts in England.

Methods: The relationship between registered nurse involvement in improving healthcare services and registered nurse retention was explored using a correlational design, involving secondary data from the annual National Health Service staff survey and Model Hospital.

Results: In mental health National Health Service trusts in England, a statistically significant, positive correlation of 0.24 was found between registered nurse 'ab(ility) to make suggestions for improvement' and registered nurse retention. In mental health NHS trusts a statistically significant correlation of 0.278 was found between registered nurses 'making improvements happen' and registered nurse retention. In acute National Health Service trusts in England, a statistically significant, negative correlation of -0.15 was identified between registered nurses 'mak(ing) improvements happen' and registered nurse retention.

Conclusions: The findings suggest that registered nurse retention factors in mental health and acute National Health Service trusts differ from community and specialist National Health Service trusts in England. This is an important consideration for national registered nurse retention programmes as a single approach to registered nurse retention may not be effective across all healthcare settings.

Keywords: Registered Nurses, Quality improvement, Personnel turnover, Research, Secondary care centers, Tertiary care centers

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Introduction

The World Health Organisation (WHO) predicts a shortfall of 5.7 million registered nurses (RNs) worldwide by 2030 (WHO, 2020). RN retention is a priority internationally and for the United Kingdom's (UK) National Health Service (NHS) (National Audit Office, 2020). Over twenty six thousand RNs left NHS organisations in the year May 2017 to June 2018 (NHS Digital 2019). RN retention is influenced by many factors. Involving RNs in improvement offers exposure to inclusion, teamwork and improvement of the quality of patient care, which have been shown to positively influence retention. Jones et al (2015) recommended that newly qualified RNs be involved in improvement projects to increase RN retention. This study identified that newly qualified RNs experienced job satisfaction from feeling valued, having development opportunities and a clear career structure. Being involved in improvement can lead to a sense of feeling valued and professional development, both of which were identified as retention factors (Jones et al, 2015). NHS regulation (NHS Improvement, 2017a) and nursing regulation (NMC, 2018) advocate the involvement of RNs in improvement to achieve high quality care and effective use of resources. However, there is limited understanding regarding how this involvement influences RN retention. This paper responds to this gap in knowledge and reports original research which analyses published data and describes the relationship between RN involvement in improving healthcare services and RN retention in England.

Literature review

An international literature search identified that RN retention is influenced by working environment, organisational culture and demographic characteristics. RN retention factors included strong nurse-physician's relationships, an inclusive managerial style and development opportunities (Van den Heede et al, 2011). Perceived quality of care influenced RN retention (Van den Heede et al, 2011). Newman and Maylor (2002) noted that poor patient satisfaction negatively influenced retention and Wu et al (2019) identified that satisfaction from helping patients recover was positively associated with an intention to stay in the profession. Koppel et al (2017) increased RN retention by providing growth opportunities and support for RNs who were considering resignation, though figures are not provided. Karlsson et al (2019) noted that a 'chance for renewal' (Karlsson et al, 2019, p.1359) through learning new skills, positively influenced RN intention to stay with an employer.

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RNs left an organisation due to concern over staffing levels, salary, issues with their own health or another family members' needs (Estryn-Behar et al, 2010). Sellgren et al (2009) identified that RN turnover was lower in smaller units, outpatients and day care, and Dieleman et al (2018) identified how RN retention in rural areas, worldwide, could be improved, although why RN retention was difficult in rural areas was not explored. RN 'stayers' had a mean age of two years older than 'leavers' and had been employed with an organisation for a mean of two years less than the 'leavers' (Estryn-Behar et al, 2010:168). Perhaps due to the complicated nature of retention, RN retention appeared to be highest when more than one retention strategy is used (Lartey et al, 2014:1027).

RN involvement in improvement provides an opportunity for interprofessional teamwork with the shared goal of using information to focus on patient care and measure improvement results (Eriksson et al, 2016). Involvement in improvement is also a learning experience and facilitates development of trust and understanding between professional groups (Eriksson, 2016). Organisational context is highlighted by Dixon-Woods (2019) as important for any improvement initiative to be successful, with 'professional coalitions of the willing' being more influential than a 'top down' approach to improvement (Dixon Woods, 2019, p.2). It is clear that there is some overlap between RN retention factors and the opportunities provided by involvement in improvement.

Published literature uses the terms 'retention, turnover and intention to leave' with no consistent term for 'retention' being used, which made interpretation of the papers complex. Several studies associated RN involvement in improvement with increased RN retention. Shared decision making, recognition and staff engagement by inclusive leaders were associated with increased RN retention (Karlsson et al, 2019; Harrison and Zavotsky, 2018; Koppel, 2017, Rondeau and Wagar, 2016; Sawasky and Enns, 2016). Murff and Defer (2010) reduced RN turnover by 5% during a local improvement project. Boettcher et al (2019) reduced new RN turnover by 33% using Lean to re-design RN education and mentorship. Research by Karsh et al (2005) identified a statistically significant negative correlation (r=-0.33, p<0.05) between 'organisation quality improvement environment and turnover intention' in care homes (Karsh et al 2005: 1268).

In contrast to the findings regarding a positive relationship between RN involvement in improvement and RN retention, McGuire and Kennerly (2006) identified that RN retention was statistically significantly negatively correlated (r=-0.111, p<0.01) with 'intellectual stimulation' (McGuire and Kennerly, 2006, p.184). These unexpected findings were not fully

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explored by the authors. In addition, Rutherford et al (2009) and Brunges and Foley-Brinza (2014) showed that RN retention changed during the course of an improvement project. Rutherford et al (2009) demonstrated an initial reduction in RN retention which then increased over four years, while Brunges and Foley-Brinza (2014) experienced a reduced RN retention which later increased over three years. These findings warrant further investigation.

To summarise, the majority of international studies identified a positive relationship between RN involvement in improvement and RN retention. The studies which identified a negative (or changing) relationship between RN involvement in improvement and RN retention were set in the United States. NHS policy encourages the involvement of NHS staff in improving services (Department of Health, 2015), which makes understanding the relationship between the two variables, important. The research outlined in this paper, aims to describe this relationship and contributes important new information to the topic.

Methodology

The aim of this research was to investigate possible relationships between RN involvement in improving healthcare services and RN retention in England. Information regarding NHS staff experience including involvement in improvement is publicly available from the annual NHS staff survey (NHS England, 2018a). The actual number of staff leaving individual NHS organisations is recorded by NHS trusts in the NHS Electronic Staff Record (ESR) and NHS Improvement publish these data on the Model Hospital (NHS Improvement, 2019). The Model Hospital is a 'free digital tool (which) enables trusts to compare their productivity and identify opportunities to improve' (NHS Improvement, 2019).

Research design

This research correlated published data from the NHS staff survey 2018 (NHS England 2018a) and Model Hospital (NHS Improvement 2019) regarding RN involvement in improvement and RN retention. The sample included all NHS trusts with a full published data set. Details of the RNs who responded to 2018 NHS staff survey are provided in Table 1.

[INSERT Table 1.]

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It was noted that Health Visitors consistently reported the lowest 'agree/strongly agree' to
NHS staff survey questions 4b-4d. Learning Disabilities RNs consistently reported the
highest 'agree/strongly agree' to NHS staff survey questions related to involvement in
improvement. RNs who classified themselves as more than one type of RN, were allocated
by NHS England into the category 'other' (NHS England, 2018b:5).

Data collection

Data collection began in February 2019, when 2018 NHS staff survey results were published
(NHS England 2018a). Published percentage RN retention in November 2018 was collected
from Model Hospital (NHS Improvement, 2019) to coincide with the timing of completion of
the 2018 NHS staff survey. Unfortunately, published data were incomplete for 54 NHS trusts
and so these were excluded from the research. The data was collected by type of NHS
trust: community, specialist, mental health and acute NHS trusts. Details are provided in
Table 2.

[Insert Table 2.]

Involvement in improvement

The mandatory 2018 NHS staff survey core questionnaire included the following questions
related to involvement in improving healthcare services.

Q4b: I am able to make suggestions to improve the work of my team/ department.
Q4c: I am involved in deciding on changes introduced that affect my work area / team /
department.
Q4d: I am able to make improvements happen in my area of work.

Q4b and Q4c relate to the process of testing changes to NHS services and Q4d relates to
successful results from improvement. NHS England collates individual responses of
'agree/strongly agree' to each NHS staff survey question and published as a percentage for
each staff group every NHS trust in England (NHS England 2018a). Cronbach's alpha was
0.793, confirming that the three questions were interrelated. Analysis was undertaken
regarding the correlation between Q4b, Q4c, Q4d and RN retention to assess whether
individual aspects of the process of involvement in improvement was influential.

It was noted that RNs employed by acute and specialist NHS trusts tended to be from three
types/fields of nursing (adult, children and 'other' types of RN). RNs employed by community

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and mental health NHS trusts, tended to be from six types/fields of nursing (adult, children,

mental health, learning disabilities fields, district nurses and health visitors).

RN retention

Retention rate for 'nurses and health visitors' is provided on Model Hospital for each NHS

trust using data from ESR (NHS Improvement, 2019), though the method for this calculation

is not explained.

Data analysis

Descriptive statistical analysis was conducted for each type of NHS trust using IBM SPSS

v26, with simple scatterplots and linear trendlines created using Microsoft Excel. Microsoft

Excel applied a linear trendline to the scatterplots using the 'least squares fit for a line'

(Microsoft Corporation, 2020). A Shapiro-Wilk test of normality showed that data were not

normally distributed ($p<0.05$) with the need to use a non-parametric test to calculate the

correlation coefficient. RN retention data for community, mental health and acute trusts had

a negative skew, which may have been due to a national focus on improving RN retention.

Specialist trust data had a negative skew for Q4b, Q4c and the composite score. IBM SPSS

v 26's Kendall's tau was used as the sample sizes were small and there were visual outliers

(Field, 2018). Outliers were included in the data analysis. Kendall does not provide effect

size measures for these correlation coefficients (Kendall, 1938).

Results

Comparative descriptive statistical analysis for each type of NHS trust is provided in Table 3.

Mental health NHS trusts had the highest mean for RN 'ability to make suggestions to

improve the work of their teams/department' (Q4b) (NHS England, 2019). Specialist NHS

trusts had the highest mean for RN involvement in 'deciding on changes introduced' (Q4c)

(NHS England, 2019) and being 'able to make improvements happen' (Q4d) (NHS England,

2019). Acute NHS trusts had the highest mean RN retention and community NHS trusts had

the lowest.

[INSERT Table 3.]

Analysis also included simple scatterplots (Figures 1-4) with the trendline highlighted and

outliers marked with a grey circle. These data demonstrated a difference between type of

NHS trust.

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[INSERT Figures 1, 2,3 & 4.]

Inferential statistical analysis is provided in Table 4.

[INSERT Table 4.]

Community NHS trusts

The simple scatterplots for community NHS trusts are provided in Figure 1. The trendline

showed a positive relationship between the two variables. RN retention was lowest in the

outlier marked with a grey circle and this was the same NHS trust (C2) for each scatterplot.

Table 4 shows that there were no statistically significant correlations between Q4b, Q4c,

Q4d and RN retention in community NHS trusts.

Specialist NHS trusts

The simple scatterplots for specialist NHS trusts are provided in Figure 2. The trendline

showed a negative relationship between the two variables. RN retention was higher in the

outlier marked with a grey circle and this was the same NHS trust (S3) for each scatterplot.

Table 4 shows that there were no statistically significant correlations between Q4b, Q4c,

Q4d and RN retention in specialist NHS trusts.

Mental health NHS trusts

The simple scatterplots for mental health NHS trusts are provided in Figure 3. The trendline

showed a slightly positive relationship between the two variables. The outliers are marked

with a grey circle. Outliers for each scatterplot were different. M38 was an outlier on all

scatterplots. M10 was an outlier for Q4b and M14 was an outlier for Q4c, Q4d and

composite score.

Table 4 shows that there was a positive correlation (τ =0.24) which was statistically

significant (p= <0.03) between Q4b and RN retention. There was also a positive correlation (

τ =0.278) which was statistically significant (p= <0.012) between Q4d and RN retention.

Acute NHS trusts

The simple scatterplots for acute NHS trusts are provided in Figure 4. The trendline showed

a linear relationship between the two variables. There were no outliers.

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Table 4 shows that there was a negative correlation (τ = -0.15) between Q4d and RN

retention, which was statistically significant (p= 0.032).

Discussion:

The aim of this research was to explore the relationship between RN involvement in

improving healthcare services and RN retention in NHS trusts in England, using 2018 data.

The findings suggest that RN retention factors differ across types of NHS trusts.

In mental health NHS trusts, there was a statistically significant positive correlation between

RN 'ability to make suggestions to improve the work of teams/departments' (NHS England,

2019 RN retention. In mental health NHS trusts there was also a statistically significant

positive correlation between 'mak(ing) improvements happen' (NHS England, 2019) and RN

retention. The respondents from mental health NHS trusts to the NHS staff survey in 2018,

were from the same fields of nursing as community NHS trusts. This suggests that the

field/type of RN employed in mental health NHS trusts may not be the contributing factor to

the statistically significant results. The organisational culture in mental health NHS trusts in

England may support the retention factors of strong working relationships, development

opportunities and satisfaction from delivering high quality care identified by Van den Heede

et al (2011) which also are integral to involvement in improvement (Eriksson et al, 2016).

None of the published studies took place in mental health settings.

In acute NHS trusts, there was a statistically significant negative correlation between RN

'mak(ing) improvements happen' (NHS England, 2019) and RN retention. This finding could

overshadow the positive benefits of involving RNs in improving healthcare services identified

by Robinson and Gelling (2019). Directors of nursing in acute NHS trusts may be reluctant to

encourage RNs to become involved in improving healthcare services if there is a risk that

this may result in reduced RN retention.

These are important issues for nursing policy makers and local nursing leaders to

understand. Further research to gain insight into how individual RNs view their experiences

of being involved in improving healthcare services and whether those experiences influence

the decision to stay with a current employer, is imperative.

There were limitations to using existing published data, including difficulty in data

manipulation, necessitating development of the composite involvement in improvement

score. Model Hospital relies on accurate recording of RNs who leave NHS trust employment.

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The small sample sizes of each type of NHS trust (as oppose to the number of RNs who took part), particularly specialist NHS trusts, may have limited the ability to identify significant relationships between the variables. Individual RN level data are not provided by the NHS staff survey results (NHS England, 2019).

Conclusion

This research involved an estimated 88,000 RN who had been involved in improvement and were employed by 164 NHS trusts in England. In mental health National Health Service trusts in England, a statistically significant, positive correlation of 0.24 was found between registered nurse 'ab(ility) to make suggestions for improvement' (NHS England, 2019) and registered nurse retention. In mental health NHS trusts a statistically significant correlation of 0.278 was found between registered nurses 'making improvements happen' (NHS England, 2019) and registered nurse retention. In acute National Health Service trusts in England, a statistically significant, negative correlation of -0.15 was identified between registered nurses 'mak(ing) improvements happen' (NHS England, 2019) and registered nurse retention.

It is not possible to ascertain whether these differences were due to type/field of RN, the teams in which RNs worked, organisation's culture, patient or service user differences.

It is recommended than an in-depth qualitative study is undertaken to understand what 'involvement in improvement' means to RNs and the relationship between RN involvement and RN improvement from the perspectives of RNs working in mental health and acute NHS trusts in England. Understanding whether the experience of being involved in improvement influences RNs' intention to stay with their employer, is vital to influence nursing practice, national nursing retention policy and local nursing strategy. In addition, comparison of the findings from this research (using 2018 data) with data from 2020, would facilitate understanding the impact of Covid 19 on RN involvement in improvement and RN retention.

Key points

1.Policy: A single national RN retention programme may not be appropriate across all types of healthcare organisation

2. Practice: There may be a positive personal impact for RNs who leave an organisation and their improvement skills may benefit patients and staff in a new organisation.

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3. Research: Existing published data provides accessible information for research.

Research ethics: This research had ethical approval from Anglia Ruskin University's Ethics

Committee.

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Table 1. Summary of RN respondents to NHS staff survey 2018

	Q4b: I am able to make suggestions to improve the work of my team/department		Q4c: I am involved in deciding on changes introduced that affect my work area/team/department		Q4d: I am able to make improvements happen in my area of work	
Category of RN included in the NHS staff survey	National average % agree/strongly agree	Total number of RNs responding to the question	National average % agree/strongly agree	Total number of RNs responding to the question	National average % agree/strongly agree	Total number of RNs responding to the question
Adult RN	78.4	74316	58.3	74236	61.2	74127
Children's RN	80.1	10202	58.6	10187	60.7	10186
District/Community RN	79.9	6095	55.6	6091	57.9	6083
Health Visitor	73.2	3946	46.7	3945	49.5	3936
Learning Disabilities RN	84.5	2428	63.2	2425	66.5	2419
Mental Health RN	80.1	16455	56.9	16447	61.3	16410
Other RN	77.5	5503	58	5493	60.5	5491

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Table 2. Study sample of NHS trusts included in this research

Type of NHS Trust	Total (Nov. 2018)	Exclusions			Included in Phase 1
		No RN NHS staff survey results available for 2018 (ie other year's data published on 2018 page)	No RN retention data available for November 2018 on Model Hospital	Director of Nursing withdrew from study	
Community	16	0	0	0	16
Specialist	17	4	0	0	13
Mental Health	51	11	0	0	40
Acute	134	36	3	0	95
Total	218	51	3	0	164
NB. 5 duplicate NHS trusts removed in data cleansing					

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Table 3. Descriptive data analysis of RN involvement in improvement and RN retention

(Using national data collected in November 2018 and published in February 2019)

Descriptive statistics	Community NHS Trusts	Specialist NHS Trusts	Mental Health NHS Trusts	Acute NHS Trusts
Q4b mean	77.9	77.65	80.06	78.04
Q4b median	77.94	78.80	80.90	78.43
Q4b range	12.13	25.00	29.11	26.76
Q4b SD	4.10	8.03	5.44	5.04
Q4c mean	56.41	60.32	59.17	57.91
Q4c median	56.34	62.10	57.83	58.27
Q4c range	21.21	19.90	37.11	29.04
Q4c SD	5.07	6.14	7.13	6.48
Q4d mean	58.91	64.54	62.83	60.39
Q4d median	59.23	63.63	61.79	59.80
Q4d range	25.46	33.12	27.97	37.10
Q4d SD	6.63	10.78	6.34	7.21
RN retention mean	84.41	85.20	85.37	87.21
RN retention median	85.25	84.70	86.55	87.40
RN retention range	13.30	8.80	22.20	15.70
RN retention SD	3.13	2.74	4.57	2.90
NB. Rounded up to two decimal places				

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Table 4. RN Involvement in improvement and RN retention (using Kendall's tau)

November 2018 data	Two-tailed correlation coefficient (τ) and significance (p)			
Correlation	Community NHS trusts	Specialist NHS trusts	Mental health NHS trusts	Acute NHS trusts
Q4b and RN retention	τ = 0.217 p = 0.242	τ = - 0.286 p = 0.178	τ = 0.240* p = 0.030	τ = - 0.023 p = 0.745
Q4c and RN retention	τ = 0.333 p = 0.072	τ = - 0.130 p = 0.540	τ = 0.155 p = 0.162	τ = - 0.026 p = 0.714
Q4d and RN retention	τ = 0.017 p = 0.928	τ = 0.078 p = 0.713	τ = 0.278* p = 0.012	τ = - 0.150* p = 0.032
*Correlation is significant at the 0.05 level				

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Figure 1. Simple scatterplots for community NHS trusts

Figure 2. Simple scatterplots for specialist NHS trusts

Figure 3. Simple scatterplots for mental health community NHS trusts

Figure 4. Simple scatterplots for acute NHS trust

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Figure 1. Simple scatterplots: RN involvement in improvement and RN retention in community NHS trusts, November 2018 (n=16)
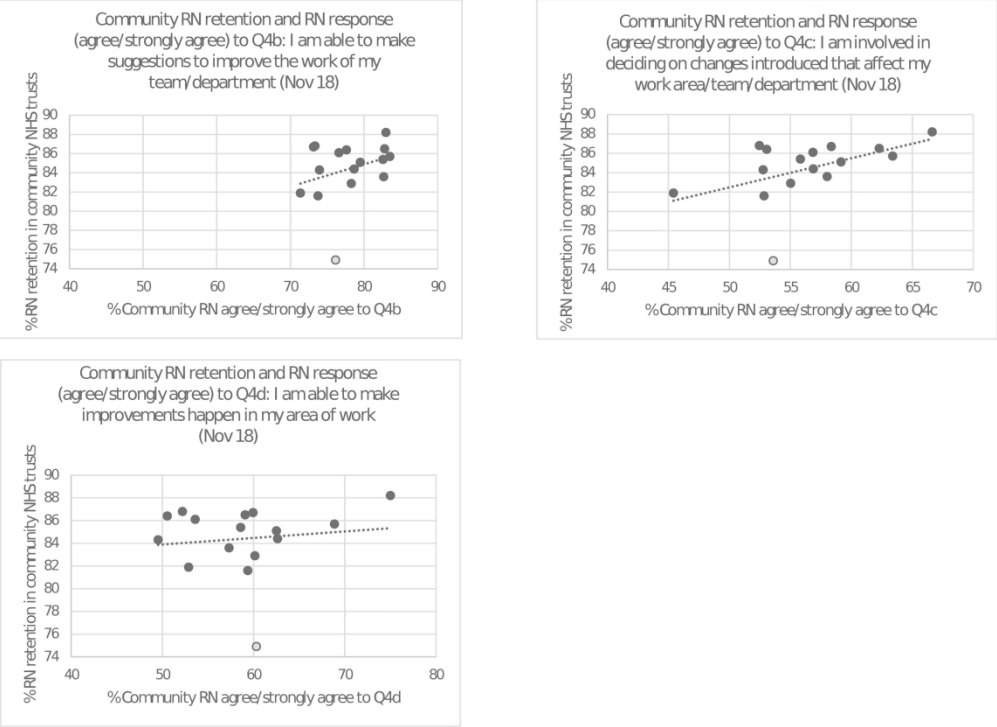

Figure 1. Simple scatterplots for community NHS trusts

226x168mm (300 x 300 DPI)
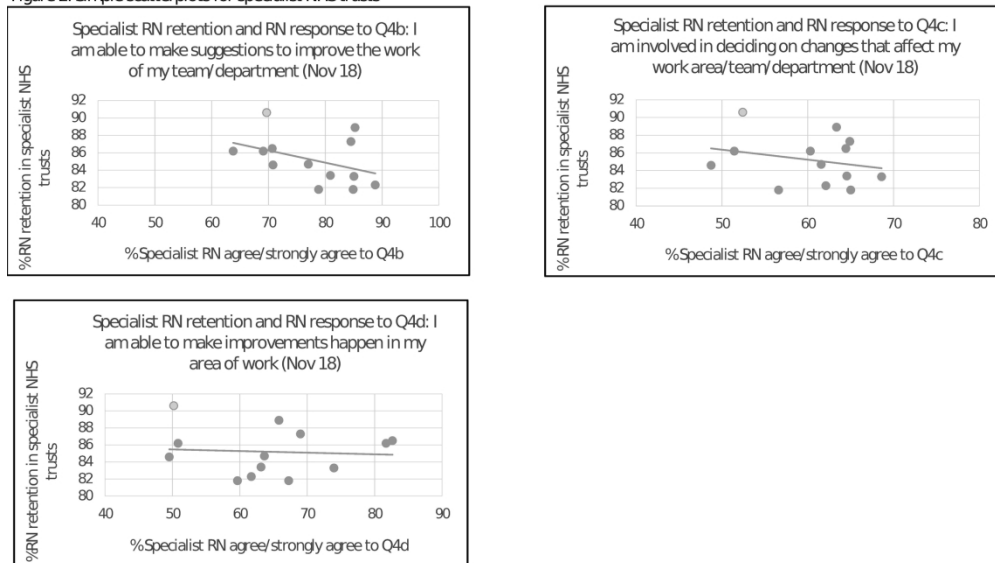
Figure 2. Simple scatterplots for specialist NHS trusts

Figure 2. Simple scatterplots for specialist NHs trusts

226x131mm (300 x 300 DPI)

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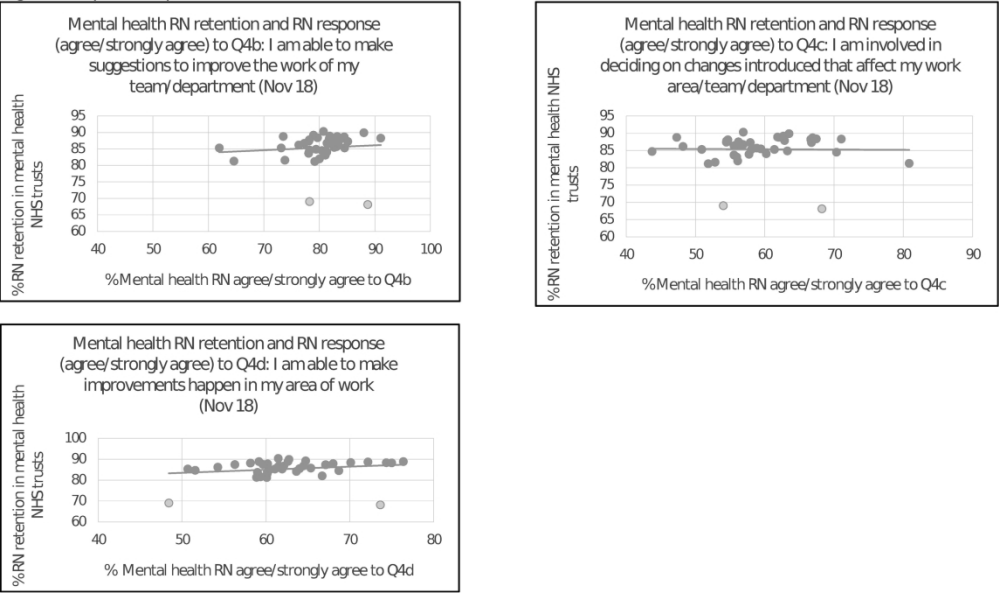Figure 3. Simple scatterplots for mental health NHS trusts

Figure 3. Simple scatterplots for mental health NHS trusts

216x131mm (300 x 300 DPI)

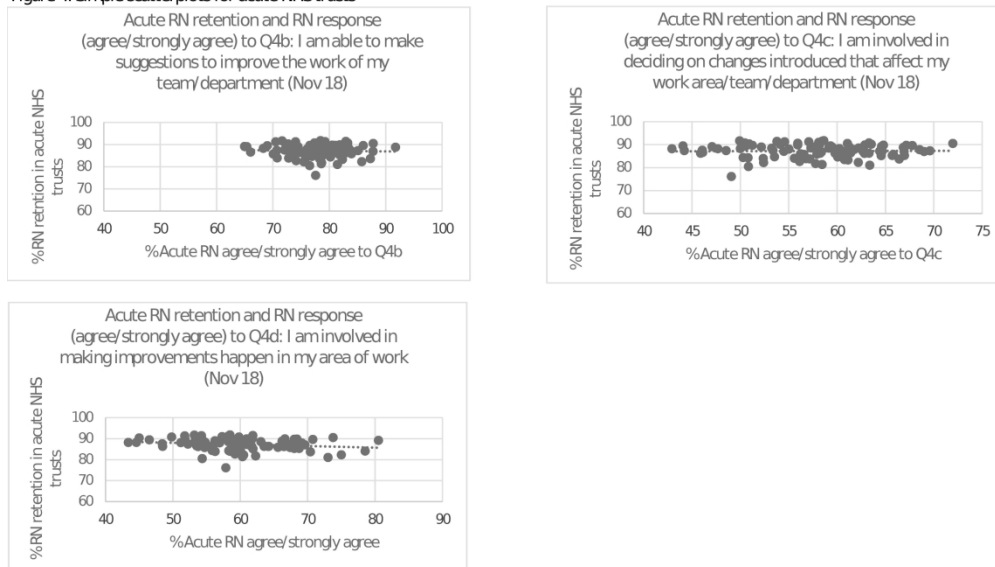Figure 4. Simple scatterplots for acute NHS trusts

Figure 4. Simple scatterplots for acute NHS trusts

225x131mm (300 x 300 DPI)