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Organizational Barriers to and Facilitators for Female Surgeons' Career Progression: A Systematic Review of the Literature

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Abstract

Recently, the number of women entering medicine has risen considerably. However, the medical specialty of surgery is still largely populated by men. Some argue that there have been persistent organizational barriers to female progression in surgery. This article reveals not only organizational barriers but also facilitators for female surgeons, attempting to progress in their careers, drawing on empirical evidence from a systematic review of articles published in peer-review journals in recent ten years. The findings would be useful for policy makers and healthcare organizations to make the field of surgery better suited for women, and attract more women into surgery.

Keywords: female surgeons, career progression, organizational barriers, organizational facilitators, gender inequality.

INTRODUCTION

The percentage of females among medical students has been growing recently in both developed and developing countries, and the number of women in medicine has increased quite rapidly worldwide.[1-3] However, generally women remain seriously underrepresented in the field of surgery. For example, the proportion of women surgeons associated with the British National Health Service was just 6.5%.[4] Such underrepresentation can impact on female patients' satisfaction with the services they receive, as research shows that gender preference with regard to doctors is more prevalent among female patients than that among male patients.[5] For instance, women find female doctors more desirable for breast, cervical, and colorectal screenings, because the procedures feel less embarrassing when women do not have to expose their body to a physician of the opposite gender.[6]

Indeed, the number of women entering the field of surgery has been risen, due to the positive efforts made by medical schools, medical councils, and healthcare providers.[7] Nevertheless, many women leave surgery before developing their career. The number of female physicians who change their specialty in the course of training is the highest in surgery.[2] Several researchers have argued that female doctors' lifestyle preferences are the primary cause of this underrepresentation. They contended that females are more likely to choose a balance between work and personal life and often do not attach the same importance as men do to achieving a high income or a prestigious position.[1, 8]

However, other researchers have strongly argued that there are persistent organizational barriers such as female unfriendly work environment which includes all-hours work and on-call duties and culture of gender discrimination in surgery and such barriers create a "glass ceiling" that prevents female doctors from rising beyond a certain level in the surgery hierarchy.[9-12]

As a result, some female surgeons shift to non-surgical specialties, such as general

medicine, and pediatrics which does not seem to have the inconvenient obligations that come with life as a surgeon.[12,13] This implies that examining organizational barriers to female's career progression in sugary is significant research area, although, there has been very little research reported on this.

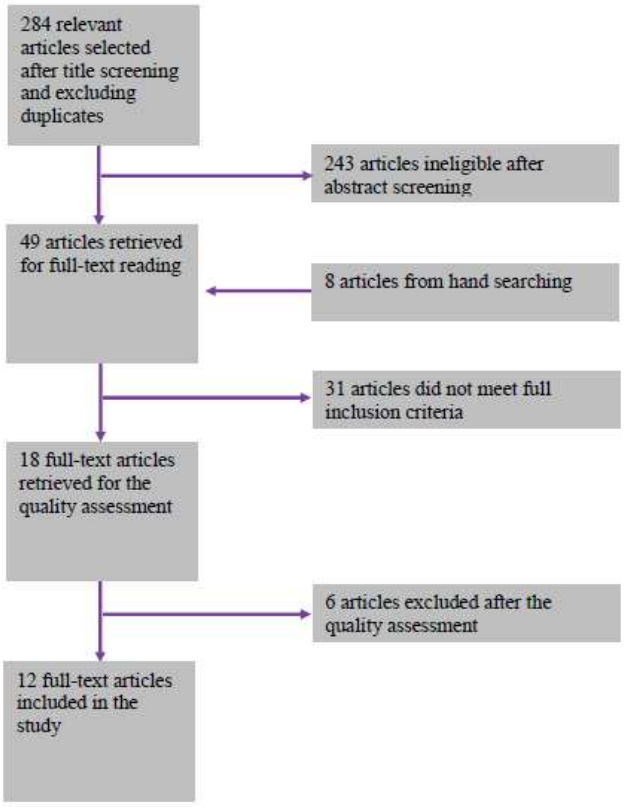
Consequently, we conducted a systematic review to identify organizational barriers and facilitators for female surgeons attempting to progress in their careers.

METHODS

This study systematically identified, critically appraised, summarized and synthesized qualitative and quantitative studies relating to organizational barriers to and facilitators for Female Surgeons' career progression.

We conducted a systematic literature search using different electronic databases including Google Scholar, CINAHL plus, Medline, PubMed, Science Direct, Science direct, Emerald Management and Wiley Online Library. These databases were searched using various combinations of the key terms included ‘women physicians’, ‘female doctors’, ‘surgeon’, ‘obstacle’, ‘barrier’, ‘gender-based discrimination’, ‘glass ceiling’, ‘work-life balance’, ‘part-time’, ‘family’, ‘children, ‘career’, ‘satisfaction’, ‘surgical specialty’, ‘general surgeon’ and ‘obstetrics and gynecology', and Boolean logic using ‘AND, OR’ was used to refine a number of articles. We adapted the Preferred Reporting Items for Systemic Reviews and Meta-Analysis (PRISMA) when conducting this search[14] and identified 284 articles after title screening and excluding duplicates. Following a screening of the abstracts, 49 articles were selected by 1st author for full text reading (see Figure 1).

Figure 1 PRISMA flow chart



From the retrieved 49 articles, we identified studies which met the following inclusion criteria: (1) peer-review English-language journals published in recent 10 years (2) studies solely focused on organizational factors linked to female physicians' career progression in surgical specialties such as general surgery, academic surgery, paediatric surgery, plastic surgery and obstetrics and gynaecology. The exclusion criteria were (1) studies not focused organizational factors linked to female physicians' career progression in surgical specialties (2) studies focused on male physicians/doctors and female doctors working in non-surgical specialties; (3) studies published not in English; (4) studied published prior to the year 2005 in order to indicate the ongoing debate in the research area.

Using the above criteria 1st author and 2nd author selected 18 articles for quality assessment. These articles were assessed using an appraisal checklist by Kuper, Lingard, and Levinson (2008).[15] The tool consists of six key questions, each question was categorized 'yes', 'unclear' or 'no'. If one question was assessed as 'yes', it was counted 1 point. If all questions were assessed as 'yes', the total quality score for a study was maximum six points. If the question was assessed as 'unclear' or 'no' it was counted 0. Consequently, after the quality assessment, we deselected 6 articles , because it was difficult to transfer the results of the studies reported in the papers to the setting of our study (see Kuper, Lingard, and Levinson 2008).[15] All of these deselected studies have quality score lower than 5 and some of them have very low quality score as well (e.g. 1, 2). As a result, including the results of these deselected articles in our analysis would not change the final outcomes of our systematic review significantly. The 12 articles selected for full review have quality score -5.

We extracted details of the studies from each article and summarized using a standardized data extraction form in order to reduce errors and minimize bias. Both authors participated in data extraction. The first author extracted all the studied included in the review. The second author, extracted random sample of 50% to assess the reliability. Any discrepancies were discussed by two authors and resolved by consensus.

A data extraction form by Bettany-Saltikov (2012)[16] was used as a data registry and as a guide for identification of the experience from female surgeons' perspective. Details of the author, the year of publication, purpose of the study, study design, setting, population, exposure, outcomes were included in data extraction form. Study design was categorized as quantitative or qualitative, but the original study sometime mixed both methods. Study population was only selected to the specialties relevant to the review. Data were categorized into organizational barriers and facilitators within the career progression. Every outcome was

also categorized using sub-themes.

Thematic analysis was used to identify key themes from the selected. We began with repeated reading of data extracted from the papers. This process helped us to identify recurrence themes related to organizational barriers to and facilitators for females' career progression in surgery. From these themes we iteratively developed final themes that helped us to examine the phenomena we studied.[17]

Both authors participated in thematic analysis. The first author independently developed themes and discussed with the second author. Through this discussion more themes began to emerge and some initial themes were abandoned. This iterative process was repeated until the final themes were able to sufficiently identify and explain organizational barriers to and facilitators for female surgeons' career progression. Any discrepancies were discussed by two authors and resolved by consensus.

RESULTS

Twelve peer-reviewed journal articles were included in the study. Two studies focused on barriers to career progression,[A2,A3] one investigated ways of facilitating career progression,[A4] and two explored both subjects.[A7,A10] Six studies focused on job satisfaction; among these three studies also suggested barriers,[A6,A10,A12] and two discussed facilitators for career advancement.[A1,A9] The remaining two studies in this category described the reason why female surgeons experienced or did not experienced job satisfaction.[A5,A11] Five studies were conducted in the United Kingdom, six in the United States, and one in Canada. Five studies were quantitative, three were qualitative, and four used mix methods.

Table 1(see page 6,7 & 8) summarizes the articles included in the review. We identified key themes from the results (i.e. extracted data) related to organisational barriers to and

facilitators for females' career progression in surgery using thematic analysis. We discuss these key themes and sub themes in detail below.

Author (Year), Country	Purpose of study	Study design/Quality appraisal	Study population	Study findings
Ahmadiyeh et al., (2010) [A1] U.S.A	To better understand the career satisfaction of female surgeons	Qualitative data/ 5	General surgery and some boarded in subspecialties	Female surgeons were equal and highly satisfied with their surgical careers in comparison to male surgeons. Social networks included both personal (family, friend, and neighbor support) and professional (colleagues to share knowledge and expertise, mentors) is a key to develop a successful surgical career.
Cochran, et al., (2013) [A2] U.S.A	To examine specific obstacle to women's academic career advancement	Quantitative data/ 5	Academic surgery	Female academic surgeons feel excluded from the male dominant culture. Especially, people's attitudes about their gender and having children are barriers to career advancement.
Crompton and Lyonette, (2011) [A3] U.K	To investigate the issues of gendered career paths	Quantitative and qualitative data/ 5	Consultants	Women were responsibility for the main management of childcare and domestic work. Organizational culture such as male dominance, lack of equal opportunities was career barrier.
Dornhorst, et al., (2005) [A4] U.K	To determine the required changes to improve hospital doctor's working lives	Quantitative data/ 5	Obstetrician and gynecologist with NHS	The provision of education/training, mentoring, childcare, part time and flexible training were proposed to improve doctors' working live.
Hebbard and Wirtzfeld (2009) [A5] Canada	To better understand how female general surgeons manage lifestyle and demands.	Quantitative and qualitative data/ 5	General surgery	Job satisfaction was generally rated highly, but a level of parenting satisfaction was rated moderately and the highest answer was dissatisfied. The time commitments and on call duties were often cited as the negative aspects of surgery. Work-related stress, frustration and worry were also commonly cited negative aspects.

Author (Year), Country	Purpose of study	Study design/Quality appraisal	Study population	Study findings
Longo and Straehley, (2008) [A6] U.S.A	To discuss women surgeon's personal experiences of career obstacles and the coping way.	Quantitative and qualitative data/ 5	US board-certified women surgeons	Female surgeons perceived gender-based discrimination and sexual harassment by the male power structure in surgery. They also had experienced stress from balancing work and family responsibilities. Most of them are satisfied with their career advancement, but several factors such as unequal pay, time-consuming business activities, a lack of time to pursue interests outside of medicine and a high cost of medical education and training are distressed.
Miller and Clark, (2008) [A7] U.K	To explore the barriers to the career progression of women and to explain the reasons.	Qualitative data/ 5	Hospital consultants	Female doctors believed that taking time off for family respondents would harm their career. There was male dominated organizational culture such as gender discrimination and old boy network in the medical profession and female were excluded from this culture. Organizational change and professional support such as social network, financial support, childcare facilities and part-time training posts were suggested as facilitators.
Ozbilgin, Tsouroufli and Smith (2011) [A8] U.K	To explore the complex interplay between professionalism and regulation of time and gender.	Qualitative data/ 5	Hospital consultants	All hours work and the difficulty in combining work and family were career barriers. One female surgeon was anxious about sustaining the current work patterns over the long term.
Park, et al., (2005) [A9] U.S.A	To examine the differences in perceptions of a career by medical students and female surgeons.	Quantitative and qualitative data/ 5	General surgery	Professional support such as job sharing or part-time practice, more flexible hours, improved parental leave and more accessible child-care options was most often suggested to pursue a career. Other suggestions were social support such as mentors, role models, and changing the male dominated attitudes. Most of them were satisfied with their career and they were happy with their specialty.

Author (Year), Country	Purpose of study	Study design/Quality appraisal	Study population	Study findings
Smith, et al., (2006) [A10] U.K	To investigate career satisfaction and professional development	Quantitative data/ 5	Paediatric surgeons	Insufficient research time due to excessive workload such as duties and on call was the most common barrier, and another barriers were domestic duties, lack of mentors and support from department and the difficulty in securing part-time training. Improvement of flexibility over work-shift patterns was career facilitators. Most of them were satisfied with their career progression, but few were dissatisfied.
Streu, et al. (2011) [A11] U.S.A	To assess satisfaction with work-life balance	Quantitative data/ 5	plastic surgeons	Female plastic surgeons are satisfied with their choice of profession, but they are less satisfied with their work-life balance.
Zutshi, Hammel and Hull (2010) [A12] U.S.A	To evaluate job perception and expectation at gender differences	Quantitative data/ 5	Colorectal surgery	Full-time surgeons were happy with career choice and clinical cases, but they had discontent with unequal promotion and income because of a lack of female mentors and research funding.

Table1-Summary of articles reviewed

Organizational Barriers to Career Progression

Organizational Culture

The organizational culture focuses on the values, beliefs and expectations that the organizational members come to share. As a result the organizational culture influence behaviour patterns of professionals who work in healthcare organizations.[18] It has been argued that the organizational culture is one of key barriers which form the "glass ceiling" that hinder women's career progression.[19]

Seven studies cited organizational culture as a factor affecting female surgeons' career progress. The common barriers reported in this category could be grouped into three types: career structure, male dominance, and lack of equal opportunities (see Table 2).

Table2: Organizational Culture as Organizational Barrier

	Type of barrier	**Main barriers identified**
Organizational culture	Career structure	Inflexible working practice [A7, A10] All hours work such as excessive workload, and on-call commitment [A8]
	Male dominance	Gender discrimination [A3, A6, A7] Male power structure in surgery [A6] Old boy network [A3, A7] Old fashioned male dominated professional attitudes, bias and prejudice [A7] People's attitudes about their gender [A2]
	Lack of equal opportunities	The absence of social capital such as access to network [A7] Lack of female colleagues in surgery [A6] Lack of mentors and lack of support from department head [A2,A10] Lack of mentors [A2] Fewer opportunities for female to advance careers [A12] A lack of mentors due to time commitments at work and home [A12] Inadequate research funding due to inadequate mentoring [A12] Male residents dislike female mentors [A12]

In our review, two studies found that rigidity of career structure requirements, such as all-hours work, insufficient research time and inflexible work practices, presented a barrier hindering career progression.[A7, A10] One 40-year-old female doctor noted that it would be difficult to alter the current career structure in surgery: *"You can't have part-time trainees in surgery, you just can't! It's a 24 hour job."*[A8]

Four studies in the review indicated the impact of male dominance in surgical specialties. Female surgeons reported having encountered gender discrimination in the form of being treated differently, receiving negative comments about their gender,[A2] and experiencing demeaning remarks, abusive behavior, or bullying.[A6] Studies revealed experiences of old-fashioned male professional attitudes, the ongoing prevalence of bias and prejudice in traditionally masculine fields,[A7] and a sense of entitlement that allows men to feel superior to women.[A6] Therefore, females felt excluded from the dominant culture in surgery departments, and negative male attitudes and consequent exclusion from the "old-boy network" that inhibited the career aspirations of female surgeons.[A2,A3] For example, a cardiac surgeon at a university hospital stated that she stumbled blocks every steps of the way, and the same biases she encountered still exit today.[A6] This implies that those who indicated the existence of gender discrimination believed that men and women did not have equal opportunities for career progression in the surgical field.[A7]

Furthermore, five studies in our review indicated that the absence of forms of social capital, such as access to social networks and collegial support, constituted a barrier to females' career progression.[A6,A7] In particular, a lack of female mentors and a lack of support from department heads were cited as causing females to have fewer opportunities for career advancement than their male peers.[A3,A10] For instance, one woman seeking to become the chair of a surgical department stated *"Being a chair requires political tact and connection to*

a network of supporters...Women don't often have the chance to show their political skills and lack the network of supporters their male colleagues have."[A6] Additionally, female surgeons claimed that few female mentors were available due to their time commitments at work and home, and that male residents disliked female mentors. Consequently, female surgeons indicated that this inadequate mentoring negatively affected their pursuit of research funding.[A6] According to Longo and Straehley (2008), one reason why young female doctors are not encouraged to pursue careers in surgery is that they lack a mentor during their formative years. [A6]

Work family conflict

Work family conflict refers to the impact of personal lives in the workplace. Work–family conflict has been explained as a form of inter-role conflict in which role pressures from the work and family domains are, in mutually incompatible. In other words work family conflict arises when family responsibilities hamper work activities.[20]

Six studies covered the various forms of work family conflict experienced by female surgeons: domestic duties, career breaks, and difficulties in combining professional and family demands (see Table 3).

Table 3: Work family conflict as Organizational barriers and Reasons of Dissatisfaction with Job.

	Type of barrier	**Main barriers identified**
Work family conflict	Domestic duties, career break, and difficulties combining professional and family demands	The major responsibility for the childcare and domestic work [A3] Having children [A2, A6] Childcare duties, Home-care duties [A10] Career break for family [A7] The difficulty in managing work-life balance [A7,A8]
	Life style issues	Birth of children during critical periods [A10] Parenthood [A5] Career trade-offs for personal and family [A1] Issues surrounding personal time, predictable time and family relationships [A1] Struggle with the integration of their chosen profession and personal lives [A11] Stress arising from the intense demands of their profession and conflicting family pressures [A6]
	Organizational issues	The time commitments and call obligations [A5] Anxious about sustaining the current all hours work over the long term [A8] Too much work do everything well such as longer hours work, emergency room call responsibilities and primarily reconstructive practice [A11]

One study found that all female participants were responsible for the majority of housework and childcare, [A3] and female doctors expressed the view that having children and domestic duties were barriers to their professional development.[A2, A10] For example, an assistant professor and director of a university surgical residency program had to forgo the tenure track because of the difficulty in meeting both the work requirements and family commitments. She stated that having two children in a two-year period had clearly affected her academic and clinical productivity, illustrating how family concerns slowed the progress of married women's careers.[A6]

Most female doctors believed that having family would harm their careers because the masculine-oriented career structure poses a major problem for working women who also have caregiving responsibilities. One cardiac surgeon insisted *"Women are not treated equally. We cannot have children during training. The strong women finish, but it is difficult and involves great sacrifice."* [A6]

On the other hand, most women in surgical specialties were satisfied with their specialty choice and their careers. For instance, female colorectal surgeons were happy with the clinical cases they saw,[A12] as well as 80 % of female general surgeons were satisfied with their career choice.[A9] However, most female surgeons had experienced significant stress arising from the intense demands of their profession and conflicting family pressures.[A6] For example, Streu et al. (2011) reported that female plastic surgeons felt that they had too much work to do, and that they struggled with time management of both career and personal responsibilities.[A11] This view resonates in several research (see Table 3). Nevertheless, female surgeons enjoyed their jobs, but they were not satisfied with their work-life balance because of the lifestyle sacrifices they must make. A middle-aged female surgeon confessed, *"I am*

working really hard now but I cannot possible carry on like this for much longer. I come at 8 in the morning and always leave late. I will always work evenings and weekends".[A8]

Table 3: Work family conflict as Organizational barriers and Reasons of Dissatisfaction with Job.

Organizational Facilitators of a Successful Career Progression

Professional Support

Professional support occurs when an organization provides effective support for their employees who are highly motivated to exert effort, but the organizational work environment is not conducive enough for them to achieve organizational goals.[19] Five studies identified professional support for female doctors as a facilitator, and all of them recommended the implementation of flexible work patterns (see Table 4). For instance, Miller and Clark (2008) stated that the availability of part-time training positions (e.q, so that females could work fewer hours if they had children) favorably influenced female doctors' career choices.[A7] Dornhorst et al.(2005) also found that providing part-time and flexible training was important to improve female doctors' in obstetrics and gynecologists work lives.[A4] Park et al.(2005) demonstrated that shared or part-time practices, improved parental leave, and more flexible hours were needed to enable women to successfully pursue careers in general surgery.[A10] Furthermore, Smith et al. (2006) reported that greater flexibility with regard to work shifts was a factor enhancing female pediatric surgeons' career progression.[A10] Hence, the promotion of flexible career structures would keep well-trained female surgeons in the field and would help to attract new candidates. Availability of child-care facilities, [A4, A7, A9] the promotion of additional training and further education, and adequate financial support[A4, A7] were also identified as important forms of professional support.

Social Networks

Social networks were cited as a key to women's career success in three studies (see Table 4). Professional networks, collegial support, and mentors are important to developing a successful surgical career, because social networks enable women in male-dominated specialties to share their knowledge and expertise.[A1] In particular, mentors can provide social support and appropriate information and can serve as valuable role models for young doctors.[A1, A9]

Organizational Culture Change

Two studies recommended efforts to change problematic aspects of the organizational culture in surgery. Female general surgeons in a studies propose to change the attitudes typical of traditionally male-dominated organizational culture.[A9,A7.] For example, many women were discouraged to pursue a surgical speciality at medical school partly because of views held by surgeons that women and surgery do not mix [A7]. Some female surgeons suggested to change the organizational culture that stereotypes female doctors as an organizational and professional liability because female surgeons struggle do cope with excessive pressure to "do everything"[A7] (see Table 4).

Table 4: Organizational facilitators

Type of facilitators	Main facilitators identified
Professional support	Improvement of flexibility over work-shift patterns [A10] Improvement of flexible work patterns such as part time and flexible training [A4, A7] More flexible hours, shared or part-time practices, and improved parental leave [A9] Work less than the usual 80 hours a week [A6] The provision of child care facilities [A4, A7, A10] To promote more training and further education, and to support financial issue [A4, A7]
Social network	Social capital such as access to network and collegial support [A7] Social network such as colleagues and mentors [A1] The increasing the number of mentors and role models [A4, A9]
Organizational culture change	To change the organizational culture that perceive women surgeons as an organizational and professional liability[A7,A9]

DISCUSSION

This systematic review found considerable evidence of organizational barriers that hinder the career progress of female surgeons. It demonstrated that the major factors contributing to the lack of career progression for female surgeons are (1) organizational culture which promotes rigid career structure that is inclined to support male surgeons than female surgeons and male domination in which male surgeons feel superior to female surgeons (2) work family conflict whereby women feel that they have to make a family sacrifice by being women and mothers, and the difficulty in securing a work-life balance in the masculine career structure. In addition, many women believed that it is difficult to achieve a work-life balance in higher positions and higher positions lead to more work stressful.[A7] Thereby, women frequency do not want to progress in their careers, because they believe that they have to give up their personal life in order to occupy higher positions. As a consequence, these beliefs prevent women from pursuing their careers.

Despite these challenges, most female surgeons are satisfied with their specialty choice and career. They report that they would choose a career in surgery again if they could start over,[A5] and they think that surgery is a good career for women.[A1] Medical students tend to assume that female surgeons do not enjoy their jobs because of the long work hours and high job demands, but in this instance there is a significant gap between perceptions and reality. Interestingly, female surgeons with families are also satisfied with their jobs, but they have sacrificed their personal lives to pursue professional careers, to the extent that they feel dissatisfied with their ability to parent.[A1, A5] Additionally, female surgeons, whether married or single, are displeased with some of the obligations associated with surgery careers, such as heavy time commitments and on-call duties.[A1,A5] Female surgeons' job satisfaction is strongly associated with their work-life balance, because they want to work relatively "normal" hours.[1]

This implies that healthcare organizations needs to pay significant attention to organizational facilitators for female surgeons' career progression. First, flexible career pathways and work patterns are recommended to retain female surgeons and attract more female medical students. Healthcare organizations need to arrange and implement a variety of different viable career progressions.[22] Second, establishing more family-friendly work conditions to fit domestic responsibilities, especially the provision of adequate child-care facilities would enable a more satisfactory balance between work and family for all female doctors, not only surgeons.[23,A4] Third, the promotion of female mentors and role models is suggested to support female surgeons in dealing with their organizational and lifestyle issues. Increasing availability of mentors and role models would contribute to expanding the number of female medical students entering surgical specialties,[7] and the eventual development of richer social networks resulting from the increasing number of female surgeons would further enhance females' careers.[A1,A7,A9] Ultimately, the greater presence of female surgeons would produce meaningful change in the currently male-dominated organizational culture, so that female surgeons would no longer believe that they are restricted by a glass ceiling. At that point, women would have greater opportunities to advance into leadership positions or to achieve the balance that they prefer between productive professional work and their personal lifestyles.

CONCLUSION

This systematic review has identified and synthesized the main perceived organizational barriers to and facilitators for female surgeons attempting to achieve a successful career progression. The findings described here may be useful for policy makers and healthcare organizations as they seek to create new career structures for female surgeons and to make the work environment better suited for women.

Nevertheless, the study has some limitation; the studies included in this review lacks details about doctors' personal work patterns, such as whether they were employed part-time or full-time or their personal family contexts. More investigation of the implications of part-time work and other family-friendly work conditions is needed; For instance, Barnett and Gareis (2000) found that reducing work hours had increased life satisfaction among married female physicians with children, [24] but Crompton and Lyonette (2011) observed that part-time work can be counterproductive to careers by limiting opportunities for promotion to higher positions.[A3] Consequently, further research needs to examine the advantages or disadvantages of flexible work patterns, such as part-time employment and job sharing for female surgeons' career progression.

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Appendix

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