

**Obstacles and Opportunities of Pursuing a Career of a Surgeon
for a Female Physician in Kazakhstan:
A Qualitative Research Study**

Master of Public Health Integrating Experience Project

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Table of Content

| | |
|--|----|
| <i>Acknowledgement</i> | 3 |
| <i>Abstract</i> | 4 |
| <i>Abbreviations</i> | 6 |
| <i>Introduction</i> | 7 |
| <i>Public Health importance</i> | 8 |
| <i>Significance</i> | 8 |
| <i>Objectives of the study</i> | 8 |
| <i>Methods</i> | 10 |
| <i>Study design and study population</i> | 10 |
| <i>Participants' recruitment and data collection</i> | 10 |
| <i>Data management and analysis</i> | 11 |
| <i>Ethical considerations</i> | 11 |
| <i>Results</i> | 12 |
| <i>Descriptive</i> | 12 |
| <i>Background questions</i> | 12 |
| <i>Gender discrimination trends</i> | 14 |
| <i>Personal experience</i> | 16 |
| <i>Obstacles</i> | 16 |
| <i>Opportunities</i> | 18 |
| <i>Solutions proposed by participants</i> | 19 |
| <i>Discussion</i> | 21 |
| <i>Possible solutions</i> | 23 |
| <i>Educational system</i> | 23 |
| <i>Events and web-communities</i> | 23 |
| <i>NGOs</i> | 24 |
| <i>Strengths and limitations</i> | 24 |
| <i>Conclusion and Recommendations</i> | 26 |
| <i>Reference list</i> | 28 |
| <i>Appendix 1. Informed consent form</i> | 30 |
| <i>English Version</i> | 30 |
| <i>Russian Version</i> | 34 |
| <i>Appendix 2. Interview Guide</i> | 39 |
| <i>English Version</i> | 39 |
| <i>Russian Version</i> | 42 |

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Abstract

Introduction: An important factor to consider the effectiveness of a healthcare workforce is a gender balance. A gender imbalance in an organizational structure can lead to poor performance of a health service organization. Determinants of women being underrepresented in a health service organization are discrimination, sexism, stereotyping, glass ceiling phenomenon, and inability to manage job and family. Though Kazakhstan is considered to be rated highly for human development, women are underrepresented in such medical specialties as surgery. To our knowledge, there have been no studies conducted on obstacles and opportunities for careers of women in medicine, specifically in surgery, in Kazakhstan.

Aims: 1) to determine obstacles and opportunities for women physicians pursuing a career of a surgeon in Kazakhstan; 2) to compare obstacles and opportunities that women surgeons faced during their career path as identified by surgeons who are both men and women; 3) to develop possible solutions to overcome those for women physicians becoming surgeons.

Methods: A qualitative research study was conducted with five male and five female Kazakhstani surgeons. Each participant was involved in 30-40 minutes semi-structured in-depth personal interview in Russian. Each interview was audio-taped, transcribed, translated from Russian to English, and analyzed using the coding procedure of identification of main categories/themes by meaningful words, phrases and sentences. The research was approved by the Ethics Committee of the Nazarbayev University School of Medicine (NUSOM). Written informed consent was taken from each participant before the interview.

Results: Several obstacles for career choices of women physicians were identified. These obstacles included gender discrimination, differences in physical and psychological capabilities between men and women, social stigma, and time limitations due to managing family and job responsibilities. Alternatively, men were found not to have these obstacles. Both male and female surgeons claimed that men have more opportunities than women in

their career, despite women having advantages in the field of surgery. Several solutions to reduce obstacles were proposed by participants.

Discussion: Results were similar to previous findings in other countries. Women physicians worldwide face gender discrimination and have limitations on time due to gender roles in family duties and job responsibilities. Physical and behavioral differences between men and women were also identified as obstacles. Three primary solutions to reduce obstacles for women physicians were proposed by participants: 1) changes in the educational system to further support women; 2) establishing social/professional support events and web-communities; and 3) creation of NGOs to support women.

Conclusion: Women-surgeons in Kazakhstan face different obstacles and have fewer opportunities than men while pursuing their career. Determinants for obstacles were identified to be associated with as gender discrimination, social stigma, physical and behavioral differences between men and women and the social role of a woman in the family. Several possible solutions were proposed to overcome these obstacles.

Key words: obstacles, opportunities, women, surgeons, career, discrimination, Kazakhstan

Abbreviations

ENT – Ear, Nose, Throat

IRB Committee – Institutional Research Ethics Committee

KAP – Knowledge, Attitude, Perception

NGO – Non-Governmental Organization

NUSOM – Nazarbayev University School of Medicine

UNDP – the United Nations Development Programme

WHO – the World Health Organization

Introduction

Gender is considered to be a key factor in a healthcare workforce because it can cause inequities in the balance of gender [1]. The proportion of women and men in medicine, in general, is roughly equal in Kazakhstan [2]. According to the UNDP, Kazakhstan is considered to be among highly ranked human development countries, ranked in the 56th place among 188 countries for 1990-2015 [2]. However, gender inequality and discrimination in the job places persist [3]. Gender discrimination is defined as a situation when someone is treated less well because of the sex [4]. Usually, it refers to a woman being treated less well than a man [4]. Even though the proportion of women studying at medical universities is higher compared to men in Kazakhstan, women comprise a substantially lower percentage of surgeons than men [3].

There was a large gap between proportions of men and women in high-level positions, where women comprised the minority [5]. Women are less likely to be promoted than men despite equal education and training between genders [6, 7]. This inequality is considered to be a less effective organizational approach [8]. Studies show that gender segregation and gender stereotyping are the major obstacles for achieving gender proportional equity in organizations [8, 9]. This phenomenon is often referenced as a glass ceiling, an invisible barrier deterring the promotion of women [10]. The glass ceiling includes obstacles related to traditional gender roles, sexism in the medical environment, and lack of effective mentors for women [10].

The lack of good mentors, sexism, discrimination, prejudice and sexual harassment are cited reasons for obstacles faced by women physicians becoming surgeons and for other promotions [3, 11, 12].

Studies have identified different career expectations of men and women and difficulty for women to balance career and family [13]. Both male and female medical students have

identified three main causes for obstacles towards a career in surgical specialties [14, 15]. They include the lifestyle associated with the surgical practice, the lifestyle during surgical training and the length of surgical training, listed in order of decreasing importance [14, 15, 16]. Despite obstacles for women physicians becoming surgeons, those female medical students who become surgeons usually have a higher satisfaction rating than those female medical students who chose not to become surgeons [17].

Public Health importance

According to the studies, healthcare organizations with proportion numbers of men and women in professional positions tend to have higher quality of medical care, greater productivity and greater success based on indicators, as well as an improved effective work system [8, 14].

Significance

Even though there are many studies on gender discrimination and obstacles that women working in healthcare face, there were no previous studies on the obstacles and opportunities of women physicians pursuing a career in surgery in Kazakhstan. This study will utilize qualitative research methods to identify these obstacles and opportunities for women physicians in Kazakhstan and explore possible ways to address gender inequities in surgical practice. This qualitative study may also promote the implementation of other studies on gender discrimination in healthcare.

Objectives of the study

1) To determine obstacles and opportunities for women physicians pursuing a career of a surgeon in Kazakhstan;

2) To compare obstacles and opportunities that women surgeons faced during their career path as identified by surgeons who are both men and women;

3) To develop possible solutions to overcome those for women physicians becoming surgeons.

Methods

Study design and study population

Qualitative research methods were used to investigate obstacles and opportunities in the career choice of surgeon for female physicians in Kazakhstan. Semi-structured in-depth interviews were conducted with male and female surgeons working in different hospitals of Astana city.

The study population included male and female surgeons from different surgical departments and different durations of time worked. Other medical and non-medical staff working in departments of surgery and medical university students were excluded from the study.

Participants' recruitment and data collection

Recruitment of participants was conducted using purposive and snowball sampling methods. The researcher approached surgeons in hospitals and invited them to participate in the study, and asked participants if they knew other surgeons who would be interested to participate. Participants were provided with the Russian version of the informed consent form covering the objectives of the study, risks and benefits and their rights (Appendix 2). If a person agreed to participate, the place and time were arranged for the qualitative research semi-structured in-depth interview. Russian language was used for the semi-structured in-depth interview, universally used by surgeons. Participants were asked to sign a written informed consent form provided in Russian for proof of consent.

Data collection was performed through semi-structured in-depth interviews based on an interview guide. The length of the interview was from ½ to 1 hour.

There was minimal risk for participants. There are no direct benefits for participants. However, the research findings may improve conditions for future recruitment of women physicians into surgery.

Data management and analysis

All interviews were audio recorded with the permission of the participants. The information recorded is confidential. No one else except the researcher and advisers have access to the information documented during the interviews.

Audio-taped in-depth interviews were transcribed and translated from Russian to English. No personal identifiers such as names, birthdates or addresses were collected. The tapes are kept electronically in a password locked file. The tapes will be destroyed after six months.

Triangulation was used during content analysis and interviewing was curtailed when saturation was achieved. The script of each interview was coded using the identification of categories/themes and subcategories by meaningful words, phrases and sentences. The results were analyzed by the most common themes. Codes were analyzed and compared to determine differences and similarities.

Ethical considerations

Written informed consent was taken from each participant before each semi-structured in-depth interview (Appendix 1). Participants were assured that the collected information is confidential and will be used for study purposes only. Data collection started after approval of the study protocol by the Ethics Committee of the Nazarbayev University School of Medicine.

Results

Descriptive

Semi-structured interviews using an interview guide were conducted with 10 surgeons in Astana hospitals, with five men and five women. The sample size was determined through achieving saturation, based on common redundant responses between participants. At this point, further interviews were curtailed, and analysis was conducted. The average length of the interview was about 30-40 minutes. Each participant was introduced to the research topic and objectives. Moreover, each participant was explicitly told that he/she can refuse to participate any time and that the interview will be tape-recorded. A written informed consent was taken from each participant before the interview.

Surgeons who participated in the study were similar to each other, very homogenous in demographic measures. The age of the participants ranged from 23 to 35 years old. Six of the participants worked in the field of surgery less than five years, two of the surgeons worked six and eight years, while the other two surgeons worked 10 and 11 years. Five surgeons work in the departments of general surgery, three in neurosurgery, one in cardio-surgery, and one in pediatric surgery.

Background questions

After collecting demographic data on participants, each semi-structured in-depth interview proceeded with questions on understanding the topic. Participants were first asked how they understand the term ‘obstacle’. Both male and female participants defined obstacle with “*some difficulty*”, “*barrier*”, or “*trouble*”: “*An obstacle – is a barrier to the goal.*”

“Opportunity” was defined by participants as “*...something that helps a person, increases the chances of achieving a goal.*” Others related “opportunity” to growth, external help, and potential. Some participants defined obstacle to be opposite to opportunity.

The next question asked about obstacles towards becoming a female-surgeon. One male participant said that there is no obstacle for becoming women-surgeons, while the other nine participants named such obstacles as gender discrimination, family planning, physical and psychological differences between sexes, and the attitude of society. These four perceptions were identified as the major causes of the obstacles on a career path for women physicians becoming surgeons by nearly all nine participants. All of these identified causes can be considered a result of gender discrimination.

Even though those perceived obstacles mentioned above were identified by women and men alike, women and men had different viewpoints on whether it is an obstacle for Kazakhstani women-surgeons or not. All five women said that they consider them to be obstacles because it is hard morally and physically, hard to balance family and job, there is no support from family and they struggle surviving in a ‘mostly-male-society’:

“...For example, marriage. My husband, for example, does not like that I have to go to night shifts.” Also, it is physically hard. *“I noticed it from myself. Sometimes I was so exhausted on the night shift that it made me think.”*

However, four men said that these are not obstacles – it is just a matter of choice:

“...if she wants to become a mother, then she needs to choose: if she wants to be a surgeon or just a mother.”

Only one male-surgeon said that it is an obstacle because *“...the more time you spend at work, the more opportunities you have to make a successful career. A woman, due to such factors as pregnancy, childbirth, and maternity leave, loses a lot of time. If she wants to achieve the same results as a man, she will need more time for this than a man, considering all other things being equal”*.

Despite the fact, that four out of five men stated that they did not consider those factors to be obstacles in a career of a female-surgeon, all participants, including the men,

continued on identifying the following obstacles limiting the opportunity of women to become surgeons: physical strength, women are unable to do something that men can, and that men do not have a maternity leave that is why they are more preferable. Four out of five female-surgeons indicated that cultural background plays a role too:

“... if this region is more southern or Atyrau, Aktobe, where the male sex dominates, then they were born with this concept, that the man should be dominant, that the woman has her halo, except for surgery – this is the woman's family. And of course, to break away from what they were conditioned to expect, something that has been laid down since birth, it's very difficult. If it is the more northern regions or central – they are more loyal to women”.

Gender discrimination trends

Despite most male surgeons indicating that there were no obstacles for women becoming surgeons refused to accept that, participants were asked about the trends of the gender discrimination. Mostly, participants said that gender discrimination is very common in the workplace (5 females and 2 males). However, *“... no one officially shows that there is a gender discrimination but still it is there”*. Some of those people said that *“... nowadays the situation with gender discrimination is not as severe as it was years ago”*. One male said that there is no gender discrimination at all and 2 men said that *“... there is no women discrimination, what is more, women receive help more often than men”*.

Nevertheless, only 4 out of 10 participants considered the gender discrimination to be a real problem – 3 women from general surgery and 1 man from cardio surgery. One participant said: *“... maybe I'm overreacting, but it always hurt me a lot. It touched my pride as if I was not an expert, but just a girl.”* Another participant said that *“... not only physicians discriminate women but also patients do not take women-surgeons seriously ... Overall, it affects the quality of medical care.”* The distribution of answers of other participants was as

following: 2 women said that it is not a problem for them, 2 men refused to answer, 1 man said that he never thought about it, and another man said that “... *the problem of discrimination is that women created it themselves: first, they go to surgery, and then they do not work in the profession, so they are not wanted to be taken because of high refusal rate.*”

Even though the answers of the participants varied sometimes, 90% of them claimed that the level of discrimination decreases with the increase of working experience:

“... *There is more respect shown for her: for her aspiration, for her character, for showing herself as a woman who can do "male" hard work.*”

“... *Our society in Central Asia is laid down as follows: married / unmarried, has a family / does not have a family. If a woman is a surgeon with a long record of work and does not have a family, then she will have a prejudiced attitude. When a man respects a woman? When she is a good surgeon and when she has a family*”, - says one woman-surgeon.

However, one person said that “... *yes, of course, respect with age to any person increases if he thrives as a surgeon, whether a man or a woman does not matter. We do not have discrimination. If we did not take girls to the medical academy, then we could say that we have a discrimination. But we have complete freedom of action for girls and boys.*”

Moreover, 9 out of 10 participants confirmed that those obstacles have a huge impact on women:

“... *A person can break down. If there is aggression of only one person, it is still manageable, but if this is a whole society against a woman, if some specific prejudices interfere, then a person can break down psychologically, a person can even leave his profession. That is, some background can affect. And, of course, it's also a lack of development: no matter how capable you are, if you do not have practice, then you will never grow up, though you will be super-capable.*”

One person was unsure because he “... *never faced such kind of problems and we should probably ask women.*”

Personal experience

In this section, participants were asked about their personal experiences of obstacles and opportunities and about their thought, how these obstacles and opportunities can impact on the quality of medical services provided to patients.

Obstacles

The main obstacle determined by the participants was a perception of the gender discrimination. Thus, the first question was whether the participants had an experience of being discriminated. “*Yes, gender discrimination has been going on since the beginning of a career. Somewhere it is not aggressive, but somewhere it is open*”, - says a woman-neurosurgeon.

On the other hand, men had an opposite perception: “*I have never been subjected to gender discrimination because I'm a guy and, in principle, surgery is a man's profession, no matter how it sounds.*”

Nonetheless, all of the participants observed a colleague being discriminated even those, who denied the existence of the discrimination at the workplace. The following examples show that both men and women were subject to discrimination by both genders:

| <i>Women</i> | <i>Men</i> |
|---|---|
| <i>“I have a girlfriend who recently looked for a job. She went to the hospital. She was asked about her marital status, and she said that she was married. She did not</i> | <i>“When applying for residency, the documents of women were often not accepted, or they were persuaded not to enter neurosurgery.”</i> |

get that job without an explanation of refusal.”

“When we studied at surgery, a female-teacher asked us about why we came to surgery because we borrowed someone's place.”

“There was a case with my colleague, a very close friend. He is a gynecologist, and when he worked in a team where there were all the women, with the exception of him, it was very difficult for him.”

As a result of the discrimination, both men and women surgeons proposed the following consequences: depression, doubts about one's own abilities, hinders development, psychological consequences as suppression, personality / character changes, harm to the development of surgery, and medicine in general, a decline in the quality of medical services, a reduction in the number of female surgeons. What is more, women claim that it can negatively affect the whole working process, because *“... If those who are better equipped in theoretical knowledge, who have better developed technical skills pass to surgery, whether male or female, then our medicine would develop better.”* However, men think that there are no big changes in the working process because of the lack of women surgeons. They also think that male and female surgeons face the same barriers in their carriers, while women strongly disagree with them.

Women

“I think that women have more obstacles than men. A man was born and that is enough for him. If this is a woman, then she must prove that she is stronger, smarter, faster and better than men are. Only then he will respect you. But if you

Men

“I think that they face the same problems in their careers. The only thing is that because of the physiological characteristics of women associated with motherhood, childbirth and maternity leave, they lose in time, which could be devoted to

work on a par with him, he does not perceive you.” | *a career.”*

As a solution on how women can handle the situation, both sexes proposed not to pay attention, abstract from it, work harder, fight for their rights, carry out propaganda, agitate girls, and create NGOs to help women.

A conclusive question of this section was related the level of impact of these obstacles on the quality of medical services.

| <i>Women</i> | <i>Men</i> |
|--|--|
| <i>1 – no, it does not impact on the quality of medical services; 4 – yes, it does.</i> | <i>4 – no, it does not impact on the quality of medical services; 1 – yes, it does.</i> |
| <i>“Yes, it has an impact because you miss some operations - this will affect in any way. You still have to do this operation anyway. However, because you are a girl, you have not been taken for this operation, you will not see how it is done, and you can even make a mistake even elementary. That is, the skill is lost. And if it is globally viewed from the outside, it can lead to global consequences.”</i> | <i>“No, I do not think so. Even if they have any difficulties at work, doctors still always want to cure the patient, they always want to provide him with a full range of high-quality services, even despite some family problems or problems with colleagues. That is, the doctor always wants the patient to be discharged healthy, without complications, so that his work is 100% complete.”</i> |

Opportunities

Besides all of the obstacles that women face in their career, they have some opportunities because of being a woman. About 70% of the participants indicated that women

are better in communication with patients, better stitching, perform work neater, careful, elegant, well do jewelry work. On the other hand, 2 participants, 1 men and 1 woman, said that male-surgeons still have more opportunities in surgery, while another 1 men said that “... *in medicine, everyone is equal.*”

What is more, 3 men out of 5 said that men and women have similar opportunities to develop their careers, while other 2 men and all women claim that men-surgeons have more opportunities than women:

“No, absolutely. This cannot be for biological and social reasons, and generally, in all respects, these are two different individuals, two different organisms, and they cannot be equal in any way.”

Based on the answers, participants were asked about their personal opinions on how these opportunities can affect the quality of medical services.

| <i>Women</i> | <i>Men</i> |
|---|---|
| <p>2 – no, it does not affect the quality; 2 – yes, it does; 1 – refused to answer.</p> <p><i>“I think that if you are a professional in your field, there is no difference, man or woman - both of them will do their job well.”</i></p> | <p>2 – no, it does not impact on the quality of medical services; 3 – yes, it does.</p> <p><i>“I think that the better is the understanding of the problem, the higher the chances to succeed and improve the quality of care.”</i></p> |

Solutions proposed by participants

At the end of the interview, all participants were asked about what kind of solutions they can propose to solve the problem of gender discrimination of women-surgeons. The following suggestions were made:

- to provide organizational support

- to organize women's symposia, congresses:
- to raise awareness of the population about discrimination;
- to motivate and inspire female surgeons;
- to introduce a merit system
 - to introduce changes in the education system:
 - to make a psychological portrait and to give an adequate assessment of the surgical skills and knowledge of the applicant;
 - to organize courses for women on maternal leave, so that they do not lose their qualifications and skills;
- to consider the possibility of protection against discrimination and disciplinary measures towards the discriminator.

Discussion

This study is focused on the perceived obstacles and opportunities of pursuing a career of a surgeon for female physicians in Kazakhstan. To the best of our knowledge, this is the first qualitative study conducted on obstacles and opportunities that Kazakhstani female-surgeons face during their career. Thus, the aims of the study are firstly, to determine what kind of perceived obstacles and opportunities exist for women-surgeons in Kazakhstan, and secondly, to compare those identified by women to those named by men, and thirdly, to develop possible solutions.

Initially, it was planned to conduct about 20 in-depth personal interviews: 10 with men and 10 with women. However, during the interviews of about 7th and 8th participants, it was observed that participants identify similar patterns and their answers are very close to each other. Thus, when a sample size reached 10 people and saturation was achieved, it was decided to stop interviews to avoid redundancy.

After the analysis, four main types of perceived obstacles were reported by most participants, male and female: gender discrimination, problems with balancing family and career, physical and psychological differences between men and women, and the attitudes of the society – though all of these are associated with gender discrimination. These findings are consistent with previous studies conducted worldwide [6, 7, 8, 9, 10].

One distinctive characteristic is that at the beginnings of the interviews male participants expressed their feeling that there are no obstacles for women because they just have to decide for themselves what they want to accomplish in their lives and how to balance in such a masculine profession as surgery. Then, during the interviews, they recalled some obstacles that their women-colleagues face in the workplace. At the end of the interview, those male participants were proposing solutions on how to help women overcome those barriers. Thus, they developed through the process of denial of a problem to solutions.

Overall, according to the perceptions of the participants, the trends of gender discrimination are very promising. The majority of the participants think that even though there is still present a discrimination of women in surgery, it is not as tough and harsh as it was 10, 20 and 30 years ago. The participants say that nowadays, there are more educated and open-minded people, who are for the gender equality. Thus, they think that over time the problem will dissolve with the help of the progress. Despite this common opinion, all of the participants agreed that to make this progress faster, it is needed to support women, to create organizations for them, to revise the educational system and create NGOs. Their opinions share the findings of other research studies, where authors claim that organizations with higher gender parity tend to be more productive, successful and to have the best organizational approach [8, 14].

On the other hand, the opportunities that were identified by both sexes are different from those identified in studies. Identified opportunities were mostly related to physical abilities of women and their maternal instincts. Despite that, participants mainly agreed that men have more opportunities than women do. Therefore, the solutions discussed above seemed for them to be even more effective. They believe that it will help to distress such kind of situations and provide more opportunities for women in medicine overall.

Thus, the analysis of the results revealed similar trends of obstacles and opportunities women-surgeons face during their career. Based on the results and proposed solutions by participants, some possible solutions were developed.

Possible solutions

To improve the situation with the discrimination of women-surgeons, I would like to propose 3 possible solutions based on the answers of the participants: to revise the educational system, to hold the events and online communities, and to create NGOs.

Educational system

A current educational system can be improved in order to help to decrease the discrimination problem of women physicians. First of all, no later than a year before students' choice of the field they would like to work, the orientation program about every specialty should be carried out. This will help students to observe the variety of specialties they can work in, talk to physicians, ask their questions and decide what they want to do in medicine based on the information gained. Secondly, the assessment criteria for accepting students to surgery should be revised. Nowadays, students are accepted based on their GPAs and judgements of the administration. However, it would be more helpful if a psychological portrait of a candidate as well as GPA and number of surgeries a student has attended were used as basic criteria for acceptance to residency in surgery. These two measures will help students and administration to understand the motivation of a student, what kind of specialty better suits a student and diminish refusal rate from surgical specialties. Moreover, it is important that during the education process students meet surgeons who can motivate and encourage them to become surgeons instead of those teachers who discourage students, especially female students.

Events and web-communities

Another proposal is to organize events about successful women in medicine, especially surgeons, who can inspire other women, share their experience and advise them

how to overcome difficulties. It will also help women to learn something new, make new connections with other female physicians and support each other in a daily routine. Besides, the development of internet technologies allows people making connections online. Thus, as an alternative in the form of budget-low replacement of events can be web-communities, where people can share their experience, thoughts, troubles, and achievements every day.

NGOs

Creation of NGOs can help support surgeons subjected to discrimination at work and other problems they may face every day. These NGOs can become the organizers of social events, make propaganda of the gender equality and be a defender for those, who cannot help themselves. Moreover, they can help develop some projects and integrate them into educational system for students or organize additional courses for women on maternal leave, as was proposed by one of the participants, so that women do not lose their skills during that period. Furthermore, these NGOs can expand their field from surgery to medicine in general, and even to provide support to all people subjected to discrimination.

Strengths and limitations

This is a first study on obstacles and opportunities in a career of Kazakhstani women-surgeons. A qualitative research design helped to collect very comprehensive and detailed information, thus, to address the objectives of the study. What is more, both male and female surgeons participated in the research. This helped to explore the perspective of the problem from both sides, compare and contrast them.

There are also several limitations of the study. Firstly, one is the generalizability of the study, which may be limited. The qualitative research study was carried out among surgeons of Astana city. Moreover, there were representatives of only four subfields of the surgery,

while in reality there are much more of them. Thus, this study cannot be generalizable to the whole Kazakhstani population or to all surgical specialties.

Secondly, validity and reliability of the study cannot be measured because of the small sample size, low generalizability and lack of previous studies performed in Kazakhstan and worldwide.

Next, a participant bias should be taken into account. Due to the recruitment procedure for the research, which is purposive sampling, it might be that only those surgeons, who are personally interested in the topic agreed to take part. Even though some of the participants were recruited randomly by walking from one surgical department to another, there is still a chance that they were bias.

The last but not the least is a researcher bias. The analysis part of the transcripts was performed by-hand by a student investigator, so in spite the fact data analysis was performed objectively, it is possible that the interpretation of obtained results could be affected by researcher bias.

Conclusion and Recommendations

This is a first study conducted in Kazakhstan that aimed to determine the obstacles and opportunities women-surgeons face during their career. Moreover, there is a lack of the worldwide studies conducted on the women-discrimination at the workplace if compared to the number of studies on gender discrimination. The purposes of this study were to determine what are the obstacles and opportunities Kazakhstani female-surgeons face during their career, compare them by which were identified be women and by men and propose possible solutions.

The results show that there are four main categories of obstacles that women-surgeons face during their career. They are discrimination, problems with balancing family and career, physical and psychological differences between sexes, and the attitude of the society. Nevertheless, all of those obstacles have a common root – gender discrimination. Even though, both men and women said that male-surgeons have more opportunities than female-surgeons have, all of them agreed that women are better in communication with patients and can perform operations better than men. To solve the problem of women-surgeons discrimination, it was proposed to revise the education system to ensure the equality for all students, to hold the events and web-communities to inspire women in surgery and not only, and to create NGOs to support and protect women.

There are several recommendations how this research study can be expanded. Firstly, the study can be conducted among senior medical universities' students who are a footstep away from choosing a specialization. As this study revealed, the majority of women suffer from discrimination at that period of university study. Secondly, other surgical specialties can be involved in this study to increase the generalizability of the study. Thirdly, there some surgical specialties like gynecology, ENT or ophthalmology that are considered to be “female-specialties”, thus, the discrimination of men can be examined too. Next, KAP study

can be conducted with the general population or with patients to examine their beliefs and attitudes towards male/female surgeons. Finally, Policy memo on gender-discrimination among Kazakhstani population can be developed.

Reference list

1. Newman, C. (2014). Time to address gender discrimination and inequality in the health workforce. *Human Resources For Health*, 12(1). <http://dx.doi.org/10.1186/1478-4491-12-25>
2. The United Nations Development Programme (UNDP). (2016). *Human Development Report 2016*. The United Nations Development Programme (UNDP).
3. Kass, R., Souba, W., & Thorndyke, L. (2006). Challenges Confronting Female Surgical Leaders: Overcoming the Barriers. *Journal Of Surgical Research*, 132(2), 179-187. <http://dx.doi.org/10.1016/j.jss.2006.02.009>
4. Definition of “gender discrimination” - English Dictionary. (2018). Dictionary.cambridge.org. Retrieved 1 April 2018, from <https://dictionary.cambridge.org/us/dictionary/english/gender-discrimination>
5. AAMC. (2009). *Women in U.S. Academic Medicine*. AAMC. Retrieved from https://www.aamc.org/download/182738/data/gwims_stats_2008-2009.pdf
6. Tesch, B. (1995). Promotion of Women Physicians in Academic Medicine. *JAMA*, 273(13), 1022. <http://dx.doi.org/10.1001/jama.1995.03520370064038>
7. Reed, V., & Buddeberg-Fischer, B. (2008). Career obstacles for women in medicine: an overview. *Medical Education*, 35(2), 139-147. <http://dx.doi.org/10.1111/j.1365-2923.2001.00837.x>
8. Abrahamsson, L. (2002). Restoring the order: gender segregation as an obstacle to organizational development. *Applied Ergonomics*, 33(6), 549-557. [http://dx.doi.org/10.1016/s0003-6870\(02\)00043-1](http://dx.doi.org/10.1016/s0003-6870(02)00043-1)
9. Acker, J., van Houten, D., 1974/1992. Differential recruitment and control: the sex structuring of organisations. In: Mills, A.J., Trancred, P. (Eds.), *Gendering Organisational Analysis*. Sage, Newbury Park.
10. Zhuge, Y., Kaufman, J., Simeone, D., Chen, H., & Velazquez, O. (2011). Is There Still a Glass Ceiling for Women in Academic Surgery? *Annals Of Surgery*, 253(4), 637-643. <http://dx.doi.org/10.1097/sla.0b013e3182111120>
11. Carr, P., Ash, A., Friedman, R., Szalacha, L., Barnett, R., Palepu, A., & Moskowitz, M. (2000). Faculty Perceptions of Gender Discrimination and Sexual Harassment in Academic Medicine. *Annals Of Internal Medicine*, 132(11), 889. <http://dx.doi.org/10.7326/0003-4819-132-11-200006060-00007>
12. Hammarström, A. (2003). The Integration of Gender in Medical Research and Education—Obstacles and Possibilities from a Nordic Perspective. *Women & Health*, 37(4), 121-133. http://dx.doi.org/10.1300/j013v37n04_09
13. Colletti, L., Mulholland, M., & Sonnad, S. (2000). Perceived Obstacles to Career Success for Women in Academic Surgery. *Archives Of Surgery*, 135(8), 972. <http://dx.doi.org/10.1001/archsurg.135.8.972>
14. Wendel, T., Godellas, C., & Prinz, R. (2003). Are there gender differences in choosing a surgical career? *Surgery*, 134(4), 591-596. [http://dx.doi.org/10.1016/s0039-6060\(03\)00304-0](http://dx.doi.org/10.1016/s0039-6060(03)00304-0)

15. Yutzie, J., Shellito, J., Helmer, S., & Chang, F. (2005). Gender differences in general surgical careers: results of a post-residency survey. *The American Journal Of Surgery*, 190(6), 978-983. <http://dx.doi.org/10.1016/j.amjsurg.2005.08.027>
16. Foster, S., McMurray, J., Linzer, M., Leavitt, J., Rosenberg, M., & Carnes, M. (2000). Results of a Gender-climate and Work-environment Survey at a Midwestern Academic Health Center. *Academic Medicine*, 75(6), 653-660. <http://dx.doi.org/10.1097/00001888-200006000-00019>
17. Neumayer, L., Kaiser, S., Anderson, K., Barney, L., Curet, M., & Jacobs, D. et al. (2002). Perceptions of women medical students and their influence on career choice. *The American Journal Of Surgery*, 183(2), 146-150. [http://dx.doi.org/10.1016/s0002-9610\(01\)00863-7](http://dx.doi.org/10.1016/s0002-9610(01)00863-7)

Appendix 1. Informed consent form

English Version

Consent form

Head Investigator: Yenglik Zhumagali, Master of Public Health program student

Institution: Nazarbayev University School of Medicine

Sponsor: student Master's Thesis project

Project: Obstacles and opportunities of pursuing a career of a surgeon for a female physician in Kazakhstan

I am Yenglik Zhumagali, a student of Master of Public Health program at Nazarbayev University School of Medicine. I am doing research on the obstacles and opportunities of pursuing a career of a surgeon for a female physician in Kazakhstan. I am going to give you information and invite you to be part of this research.

You can help us by telling us about your own experience and about the experience of your friends and peers about female-surgeons and the obstacles and opportunities in Kazakhstan. We want to learn what Kazakhstani surgeons think about the obstacles female-surgeons face during their career path and what kind of opportunities do they have because of their gender.

This research will involve your participation in an individual interview that will take from a ½ hour to an hour.

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. You may change your mind later and stop participating, even if you agreed earlier.

If you decide not to participate, there will be no consequences. There is a minimal risk in participating in the study, with only the discomfort of participating in the interview. Study findings will not benefit you but may improve conditions for future recruitment of women physicians into surgery.

We are inviting you to take part in this research project. If you accept, you will be asked to take part in a personal interview. This interview will be guided by me. During the interview, I will sit down with you in a comfortable place. If it is better for you, the interview can take place in any private place that is comfortable to you.

The information recorded is confidential, and no one else except Dr. Byron Crape, Dr. Raushan Alibekova and I will access to the information documented during your interview. The entire interview will be tape-recorded, but no-one will be identified by name on the tape. No personal identifiers such as name, birthdate or address will be collected. The tape will be kept electronically. The information recorded is confidential, and no one else except Dr. Byron Crape, Dr. Raushan Alibekova and I will have access to the tapes. The tapes will be destroyed after six months.

We will not be sharing information about you to anyone outside of the research team. The information that we collect from this research project will be kept in confidence, in a secured password protected computer file and any related papers will be locked in a filing cabinet in the office of Dr. Byron Crape at the School of Medicine in Nazarbayev University.

Please ask me to stop as we go through the information and I will take time to explain if there is any confusion or questions. If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact me of the following: Yenglik Zhumagali, Kabanbay batyr ave. 53, 23/1211 / 87477825058 / yzhumagali@nu.edu.kz

Informed consent form

I have been invited to participate in research about the obstacles and opportunities of pursuing a career of a surgeon for a female physician in Kazakhstan. I know that I am going to participate in a personal 1-hour interview. I am aware that I can skip questions and stop the interview at any time. I know that I will be recorded and the record will be kept privately for six months.

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked were answered to my satisfaction. I consent voluntarily to be a participant in this study

Print Name of Participant _____

Signature of Participant _____

Date _____

Day/month/year

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands that the following will be done:

1. A personal 1/2 – 1-hour voluntary interview will be conducted on the obstacles and opportunities of pursuing a career of a surgeon for a female physician in Kazakhstan in a private comfortable place;
2. The interview may be taped or recorded;
3. The information collected will be kept privately and destroyed after six months;
4. An interviewee can skip questions or stop the interview at any point of time;
5. An interviewee can ask any questions from the researcher.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent _____

Signature of Researcher /person taking the consent _____

Date _____

Day/month/year

Форма информированного согласия

Главный исследователь: Жумагали Енлик, студент программы Магистратуры
Общественного здравоохранения

Институт: Школа Медицины Назарбаев Университета

Спонсор: Магистерская диссертация студента

Проект: Препятствия и возможности карьерного роста в хирургии для женщины-врача в Казахстане

Я – Енлик Жумагали, студент программы магистратуры «Общественного здравоохранения» Школы Медицины Назарбаев Университета. Я занимаюсь исследованием препятствий и возможностей для построения карьеры хирурга для женщины-врача в Казахстане. Я хочу предоставить Вам информацию и пригласить Вас принять участие в этом исследовании.

Вы можете помочь нам, рассказав нам о Вашем собственном опыте и опыте Ваших друзей и сверстников о женщинах-хирургах и препятствиях и возможностях карьерного роста в Казахстане. Мы хотим узнать, что думают казахстанские хирурги о препятствиях, с которыми сталкиваются женщины-хирурги во время их карьерного роста, и какие возможности у них есть в связи с их половой принадлежностью.

Это исследование будет включать ваше участие в индивидуальном интервью, которое займет от ½ часа до часа.

Ваше участие в этом исследовании полностью добровольное. Это ваш выбор, участвовать или нет. Вы можете изменить свое мнение позже и прекратить участие,

даже если вы согласились ранее.

Если Вы решите не участвовать, не будет никаких последствий. Существует минимальный риск участия в исследовании, и только дискомфорт от участия в собеседовании. Результаты исследования не принесут Вам пользы, но могут улучшить условия для будущего набора женщин-врачей в хирургию.

Мы приглашаем Вас принять участие в этом исследовательском проекте. Если Вы согласитесь, Вас попросят принять участие в личном интервью. Это интервью будет проводиться мной лично. Во время собеседования я сяду с Вами в удобное место. Если Вам так будет комфортнее, Вы можете выбрать любое удобное для Вас место.

Полученная информация является конфиденциальной, и никто другой, кроме доктора Байрона Крэйп, доктора Раушан Алибековой и меня, не будет иметь доступа к информации, задокументированной во время вашего интервью. Все интервью будут записаны на магнитофон, но никто не будет идентифицирован по имени на ленте. Никакие личные идентификаторы, такие как имя, дата рождения или адрес, не будут собраны. Лента будет храниться в электронном виде. Полученная информация является конфиденциальной, и никто, кроме доктора Байрона Крэйп, доктора Раушан Алибековой и меня, не будет иметь доступа к лентам. Ленты будут уничтожены через шесть месяцев.

Мы не будем делиться информацией о Вас с кем-либо, кроме исследовательской группы. Информация, которую мы собираем из этого исследовательского проекта, будет храниться конфиденциально, в защищенном паролем компьютерном файле, и любые связанные с ним документы будут заперты в шкафу для хранения документов в кабинете доктора Байрона Крэйп в Школе Медицины Назарбаев Университета.

Пожалуйста, остановите меня в любой момент, чтобы я могла объяснить Вам в случае возникновения путаницы или вопросов. Если у вас есть вопросы, вы можете задать их сейчас или позже. Если вы хотите задать вопросы позже, вы можете связаться со мной следующим образом: пр. Кабанбай батыра, 53, 23/1211 / 87477825058 / yzhumagali@nu.edu.kz

Форма информированного согласия

Я был(-а) приглашен(-а) для участия в исследованиях о препятствиях и возможностях проведения карьеры хирурга для женщины-врача в Казахстане. Я знаю, что я собираюсь участвовать в личном 1-часовом интервью. Я знаю, что я могу пропустить вопросы и прекратить собеседование в любое время. Я знаю, что я буду записан, и запись будет храниться конфиденциально в течение шести месяцев.

Я прочитал(-а) вышеизложенную информацию, или она была прочитана мне. У меня была возможность задать вопросы об исследовании, и на все вопросы, которые я задал(-а), я получил(-а) удовлетворительный ответ. Я соглашаюсь добровольно участвовать в этом исследовании

Имя участника (печатными) _____

Подпись участника _____

Дата _____

День/Месяц/Год

Заявление исследователя / лица, принимающего согласие

Я точно прочитал информационный листок потенциальному участнику, и, насколько мне известно, участник понял, что будет сделано следующее:

1. Будет проведено личное добровольное собеседование длительностью от ½ до 1 часа о препятствиях и возможностях проведения карьеры хирурга для женщины-врача в Казахстане в удобном для участника месте;
2. Интервью может быть записано на диктофон;
3. Собранная информация будет храниться конфиденциально и уничтожена через шесть месяцев;
4. Интервьюируемый может пропустить вопросы или прекратить собеседование в любой момент времени;
5. Интервьюируемый может задать любые вопросы исследователю.

Я подтверждаю, что участнику была предоставлена возможность задать вопросы об исследовании, и на все вопросы, заданные участником, был дан правильный, насколько это возможно, ответ. Я подтверждаю, что лицо не было принуждено давать согласие, и согласие было дано свободно и добровольно.

Копия формы информированного согласия была предоставлена участнику.

Имя исследователя / лица, принимающего согласие (печатно)

Подпись исследователя / лица, принимающего согласие

Дата _____

День/Месяц/Год

Appendix 2. Interview Guide

English Version

Interview guide

This interview is conducted in order to investigate whether there are any obstacles and opportunities encountered by Kazakhstani female physicians in the surgeon's career path. The objectives of my interview are 1) to determine what kind of obstacles and opportunities exist while pursuing a career of a surgeon for Kazakhstani women; 2) to compare obstacles and opportunities that women face during their career path identified by men and women; 3) to develop possible solutions to overcome those obstacles.

The interview will be conducted in Russian in purpose of overcoming language barriers and make an interviewee feel more comfortable during the interview. The interview will be taped or recorded, transcribed and translated, and then submitted to Dr. Byron Crape and Dr. Raushan Alibekova. The written consent will be taken from each interviewee. Moreover, interviewees will be treated with coffee or tea break.

Questions:

1. General information
 - a. What is your age?
 - b. What is your gender?
 - c. What is your surgical specialization?
 - d. How many years are you in the field of surgery?
2. Background questions on understanding of the topic
 - a. What, in your opinion, the “obstacle” means?
 - b. What, in your opinion, the word “opportunity” means?
 - c. What kind of obstacles may female surgeons face during their career?

- d. Why do you think they are / it is an obstacle(-s)?
 - e. How do you think, is there any gender discrimination in surgery?
 - f. What kind of characteristics will help you to identify the discrimination?
3. Trends of gender discrimination among surgeons
- a. What do you think is the situation of gender discrimination among surgeons?
 - b. Do you think it is common among surgeons?
 - c. Do you think it is a real problem? If yes, then why?
 - d. How do you think the discrimination of women increases or decreases over years of working in the field of surgery? Why?
 - e. In your opinion, what role does the discrimination of woman-surgeons play in their career?
 - f. Do you think these obstacles affect women? / If yes, then how do they affect them?
4. Personal experience of an interviewee
- a. What is your personal experience of gender discrimination?
 - b. Have you ever felt or observed someone being discriminated at work?
 - c. What possible outcomes of gender discrimination you can name?
 - d. If yes, can you propose any suggestions how women can cope with this problem?
 - e. If no, do you think that men and women face the same obstacles in their careers of a surgeon?
 - f. In your opinion, how did it influence job performance?
 - g. Do you think that the obstacles affect the quality of medical services? How and why?
5. Personal experience on the existence of the opportunities
- a. How do you think are there any opportunities for women physicians in the field of surgery because of them being females? If yes, can you name them?
 - b. If no, do you think that men and women have equal opportunities in the field of surgery?
 - c. Do you think that the opportunities affect the quality of medical services? How and why?

6. Measures and conclusion

- a. Have you thought about gender discrimination before?
- b. What kind of measures can be taken to address the issue of the female-discrimination among surgeons?

Руководство для интервью

Это интервью проводится для того, чтобы выяснить, есть ли какие-либо препятствия и возможности, с которыми сталкиваются казахстанские женщины-медики в карьере хирурга. Цели моего интервью: 1) определить, какие препятствия и возможности существуют при проведении карьеры хирурга для казахстанских женщин; 2) сравнить препятствия и возможности, с которыми сталкиваются женщины во время их карьерного роста, выявленные мужчинами и женщинами; 3) разработать возможные решения для преодоления этих препятствий.

Интервью будет проводиться на русском языке с целью преодоления языковых барьеров и позволит участнику чувствовать себя более комфортно во время собеседования. Интервью будет записано и переведено, а затем передано доктору Байрону Крэйп и доктору Раушан Алибековой. Письменное согласие будет взято у каждого собеседника. Кроме того, собеседникам будет предложен перерыв на кофе или чай.

Вопросы:

1. Общая информация
 - a. Ваш возраст?
 - b. Ваш пол?
 - c. Какова Ваша хирургическая специализация?
 - d. Сколько лет Вы занимаетесь хирургией?
2. Базовые вопросы на понимание темы
 - a. Что, на ваш взгляд, означает «препятствие»?
 - b. Что, на ваш взгляд, означает «возможность»?

- c. Какие препятствия могут возникнуть у женщин-хирургов во время их карьеры?
- d. Почему Вы считаете это препятствием(-ями)?
- e. Как Вы думаете, существует ли какая-либо дискриминация по признаку пола в хирургии?
- f. Какие характеристики помогут Вам определить дискриминацию?

3. Тенденции гендерной дискриминации среди хирургов

- a. Как Вы думаете, какова ситуация с гендерной дискриминацией среди хирургов?
- b. Как Вы считаете на сколько это распространено среди хирургов?
- c. Считаете ли Вы, что это действительно проблема? Если да, то почему?
- d. Как Вы думаете, увеличивается или уменьшается дискриминация с увеличением опыта работы в области хирургии? Почему?
- e. На Ваш взгляд, какую роль играет дискриминация женщин-хирургов в их карьере?
- f. Считаете ли Вы, что эти препятствия влияют на женщин? / Если да, то как они влияют на них?

4. Личный опыт интервьюируемого

- a. Каков Ваш личный опыт гендерной дискриминации?
- b. Вы когда-нибудь чувствовали, что Вас дискриминируют или наблюдали, что кто-то подвергался дискриминации на работе?
- c. Какие возможные последствия дискриминации по признаку пола Вы можете назвать?
- d. Если да, можете ли Вы предложить какие-либо предложения о том, как женщины могут справиться с этой проблемой?
- e. Если нет, считаете ли Вы, что мужчины и женщины сталкиваются с теми же препятствиями в своей карьере хирурга что и женщины?
- f. На Ваш взгляд, как это повлияло на работу?
- g. Считаете ли Вы, что препятствия влияют на качество предоставляемой медицинской услуги? Как и почему?

5. Личный опыт существования возможностей

- a. Как Вы думаете, есть ли какие-либо возможности/преимущества для женщин-медиков в области хирургии из-за того, что они являются

женщинами? Если да, можете ли Вы назвать их?

- b. Если нет, считаете ли Вы, что мужчины и женщины имеют равные возможности в области хирургии?
- c. Считаете ли Вы, что возможности влияют на качество предоставляемой медицинской услуги? Как и почему?

6. Меры и выводы

- a. Думали ли Вы когда-нибудь о дискриминации по признаку пола?
- b. Какие меры могут быть приняты для решения проблемы дискриминации женщин среди хирургов?