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Nurses' and midwives' knowledge of Female Pelvic Floor Disorders in Kazakhstan

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Abstract
Background: Currently, there is an increasing trend in the number of patients with prolapse of the internal genital organs. Nurses can take on a specialized and leading role in the assessment and prevention of pelvic floor dysfunction and ensure appropriate care.
Aims: The aims of this study were to evaluate the knowledge of nurses and midwives about pelvic floor disorders in women and develop recommendations for improving the proper medical care of patients with this problem.
Methods: Quantitative research was used to determine the knowledge of pelvic floor disorders in the Almaty region. The survey tool was the Pelvic Floor Disorder questionnaire. Using a Webropol online survey among nurses and midwives, a quantitative study was conducted. Responses received from nurses and midwives were analyzed using SPSS 26. Descriptive statistics was using the mean and standard deviations for distributed data.
Results: In total, 120 practical nurses and midwives responded to the questionnaire. The majority (84.2%) of the respondents were general practice nurses who mainly work (82.5%) in government organizations. This study revealed that more than half (58.3%) of nurses and midwives do not ask about disturbing symptoms in women. The results show that nurses and midwives do not enquire much about the symptoms of patients with pelvic prolapse and that they have difficulty recognizing the condition. The knowledge in the field of prolapse of the pelvic organs of women is on an insufficient level.
Conclusion: The insufficient level of knowledge can lead to a decrease in the quality of medical services and the possibility of early prevention of pelvic floor disorders in women. It is necessary to consider the possibilities of additional training and/or conducting courses to improve the qualifications of nurses/midwives regarding the prolapse of female organs to provide quality medical care. There is a need to consider the possibility to conduct additional courses or presentations on pelvic organ prolapse for professional development

Keywords/tags (subjects)
Pelvic floor disorders, Pelvic organ prolapse, Urinary incontinence, Knowledge, Nurses

Miscellaneous (Confidential information)

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1 Introduction

Pelvic disorders are a problem affecting women of all ages. This problem violates the quality of life of nearly one third of adult women and is a growing component of health needs. In addition, the overall prevalence of pelvic floor disorders increases with age from 6% in young women aged 20 to 29 years, from 32% in those aged 50 to 59 years, and to 53% in older women aged 80+ years. (Wu, Vaughan, Goode, Redden, Burgio, Richter, & Markland 2014.) Approximately 17% of women suffer from urinary incontinence (UI), 30% of women suffer from overactive bladder, 27% of women suffer from pelvic organ prolapse (Dieter, Wilkins, & Wu 2015). The key risk factors for pelvic floor disorders in women include increased parity, vaginal birth, increased age, and obesity. (Vergeldt, Weemhoff, IntHout, & Kluivers 2015.) The frequency of anatomical relapses after surgical correction of pelvic organ prolapse (POP) is 40%. Most relapses (73%) occur after 1 year of follow-up. (Lavelle, Christie, Alhalabi, & Zimmern 2016.) The burden of pelvic floor disorders in the healthcare industry will increase significantly in the future, as the average life expectancy of women increases as well as indicators of obesity. (Dieter et al. 2015; Fursov, Ospanov, & Fursov 2017; Giri, Hartmann, Hellwege, Edwards, & Edwards 2017).

More than half of women with pelvic floor disorders do not seek medical help for various reasons, including embarrassment and ignorance (Morrill, Lukacz, Lawrence, Nager, Contreras, & Luber 2007). Nurses can take on a specialized and expanded leading role in the assessment and prevention of pelvic floor dysfunction, and ensure that appropriate care is received (Richardson, Hagen, Glazener, & Stark 2009). More attention should be paid to the strategy for training and developing the role of a specialized pelvic floor nurse. Such strategies can influence a more effective approach to meeting women's health care needs and free women from embarrassment and social and sexual isolation. (Davis & Kumar 2003)

Understanding the epidemiological data and risk factors for pelvic floor disorders, this study will provide the empirical data needed by nurses, midwives, doctors, researchers, politicians, and public health stakeholders to understand the perspective, the need for future research, and the policy and programming priorities for diagnosis, treatment, and prevention of pelvic floor disorders. Therefore, it is

considered necessary to conduct a study aimed at studying the knowledge of nurses and midwives about pelvic floor disorders in women, as well as studying the organization of medical care for them. All this served as the basis for this study. There are no official statistics on the prevalence of pelvic floor disorders in women (pelvic organ prolapse, urinary incontinence, fecal incontinence) in the Kazakhstan.

2 Pelvic floor disorders

2.1 Medical and social significance of pelvis floor disorders

Pelvic floor disorders in women include urinary incontinence, fecal incontinence, and pelvic organ prolapse and are a serious public health burden in all countries of the world. This is due to the high prevalence of this pathology, a significant deterioration in the quality of life of women, and significant economic costs. (Nygaard, Barber, Burgio, Kenton, Meikle, Schaffer, Spino, Whitehead, Wu, & Brody 2008; Wu, Kawasaki, Hundley, Dieter, Myers, & Sung 2011; Wu, Vaughan, Goode, Redden, Burgio, Richter, & Markland 2014)

In developed countries, every fourth woman experiences at least one or more pelvic floor disorders (Nygaard et al. 2008; Wu et al. 2014). The overall prevalence of pelvic floor disorders increases with age: among young women aged 20–29 years - 6%, between 50 and 59 years old - 32%, among older women 80 years and older - up to 53%. The peak incidence of pelvic floor disorders is observed at the age of 60+ years (Wu et al. 2014).

Studies show that pelvic floor disorders are often found in combination. For example, in a study of 5,236 Swedish women with a history of 1 birth, the prevalence of one of the pelvic floor disorders was 46.5%. Moreover, 31.7% of women had one symptom, and 14.8% had two or more, i.e. every 7th woman had two or more pelvic floor disorders. (Gyhagen, Akervall, & Milsom 2015)

There is little data on the epidemiology of pelvic floor disorders among women in low/middle income countries (Walker & Gunasekera 2011). It is suggested that pelvic floor disorders may be more common among women living in low/middle income countries than in high income countries. This is due to increased life expectancy, high

parity, early marriage, a large number of vaginal births, and hard physical labour. (Akter, Gartoulla, Oldroyd, & Islam 2016; Bodner-Adler, Shrivastava, & Bodner 2007; Lien, Chen, & Ng 2012; Walker & Gunasekera 2011) The socioeconomic, mental, and physical consequences of pelvic floor disorders for women in low/middle income countries are arguably more severe than for women in developed countries (Shrestha, Onta, Choulagai, Poudyal, Pahari, Uprety, Petzold, & Krettek 2014; Walker & Gunasekera 2011).

According to various authors, the prevalence of POP in women ranges from 3–6% (in women with clinically significant symptoms) to 50–55% (in women with clinically insignificant symptoms) in the general population (Barber, & Maher 2013; Samuelsson, Victor, Tibblin, & Svardsudd 1999; Weintraub, Glinter, & Marcus-Braun 2020). A prevalence of POP is up to 50% when diagnosis is based on gynecological examination, but if POP is considered for the presence of clinically significant symptoms, its prevalence in the general population ranges from 3% to 6%, since mild or moderate degrees of POP often have an asymptomatic course (Barber & Maher 2013). According to a study by Awwad, Sayegh, Yeretzian, and Deeb (2012), clinically significant POP was diagnosed in 49.8% of the 504 Lebanese women participating in their study. According to the author, the prevalence of POP increases with age: at the age of 20–29 years old 20.4%, at 30–39 years old 50.3%, at 40–49 years old 77.2%, at 50–59 years old 74,6% (Awwad et al. 2012). According to research (Hendrix, Clark, Nygaard, Aragaki, Barnabei, & McTiernan 2002; Awwad et al. 2012), prolapse of the anterior occurs most often (34.3%; 39.3%) and twice more often than posterior prolapse (18.6%; 16.1%), 2.5 times more likely than apical prolapse (14.2%; 14.9%).

Despite the high prevalence and frequency of operations for pelvic organ prolapse and stress urinary incontinence (SUI) worldwide, there is little information about the cost of medical care for this pathology (Cheon & Maher 2013). A study in the United States in 1997 showed that the direct costs of surgery for pelvic organ prolapse were $1.012 million, including $494 million (49%) for vaginal hysterectomy, $279 million (28%) for cystocele repair and rectocele, and $135 million (13%) for abdominal hysterectomy. Medical services accounted for 29% ($298 million) of total expenses, and hospitalization was 71% ($714 million). Twenty-one percent of pelvic organ prolapse operations included urinary incontinence procedures ($218 million). If all

operations were reimbursed by non-Medicare sources, the annual estimated cost would increase by 52% to $1,543 million. (Subak, Waetjen, van den Eeden, Thom, Vittinghoff, & Brown 2001) Due to a lack of research on this topic, the current situation is not known. A European study in 2005 found that the number (frequency) of hospitalizations for POP surgery was 36,854 (0.87 per 1,000 women) in Germany; 36,679 (1.14 per 1,000 women) in France; and 28,959 (1.13 per 1,000 women) in England. The total expenses in Germany amounted to 144,236,557 euros; in France to 83,067,825 euros; and in England to 81,030,907 euros. (Subramanian, Szwarcensztein, Mauskopf, & Slack 2009) The study is quite old, no newer study about the topic could be found, and therefore the current situation is unknown.

According to Wu, Matthews, Conover, Pate, and Funk (2014), the lifetime risk of any primary surgery for stress urinary incontinence or POP is 20% at the age of 80. The cumulative risk of surgery is 12.6% for POP and 13.6% for stress urinary incontinence, i.e. every 8th woman in her entire life will undergo surgery in connection with POP and every 7th woman in connection with stress incontinence. The authors conclude that these operations will create a growing demand for healthcare resources and require a commensurate increase in the number of trained pelvic floor surgeons. High rates of surgery for both POP and stress urinary incontinence still indicate the need for improved prevention strategies (Wu et al. 2014). Wu and colleagues (2011) used the forecasts of the United States Census Bureau to estimate the total number of women who will have surgery for stress urinary incontinence and POP from 2010 to 2050 and determined that this number would increase by 47.2% over the 4 decades.

The prognosis of long-term results after surgical treatment of POP depends on the severity of the symptoms of the condition, the degree of prolapse of the genitals, the experience of the doctor and patient expectations (Luber, Boero, & Choe 2001; Miedel, Tegerstedt, Morlin, & Hammarstrom 2008 ; Maher, Feiner, Baessler & Schmid 2013). According to the literature, long-term results after surgical correction of POP are suboptimal, with an anatomical recurrence rate of up to 40%. Most relapses (73%) occur after the 1st year of follow-up (Lavelle, Christie, Alhalabi, & Zimmern 2016, 2018). The recurrence rate after anterior colporaphia reaches 26–37% and posterior 24–38% (Glazener, Cooper, & Mashayekhi 2017). The incidence of

post hysterectomy prolapse of the arch requiring surgical treatment is 6–8% (Aigmueller, Dungl, Hinterholzer, Geiss, & Riss 2010).

Pelvic floor disorders in women negatively affect their self-esteem and quality of life (Svihrova, Svihra, Luptak, Swift, & Digesu 2014). According to Dheresa, Worku, Oljira, Mengiste, Assefa, and Berhane (2018,1), more than two-thirds of women with pelvic floor disorders never seek medical help. In many societies, pelvic floor disorders lead to stigma and women do not seek medical attention due to embarrassment, ignorance, social prohibitions, lack of knowledge, lack of resources, and lack of access to trained personnel (Dheresa et al. 2018). Many women silently suffer from pelvic floor disorders, believing that urinary incontinence and POP are a normal consequence of aging (Good & Solomon 2019).

In some studies (Chiu, Huang, Hsu, Liu, & Chiu 2015; Vieira, da Camara, Moreira, Pirkle, Vafaei, & Maciel 2019) , it has been shown that symptoms of POP and urinary incontinence are directly related to decreased physical performance in women. A decrease in physical performance is of clinical importance, as it affects the physical ability of women. This, in turn, affects other tasks important for daily functioning. (Chiu et al. 2015; Vieira et al. 2019) Women with POP felt less feminine, less attractive, isolated, and "different." Women with pelvic organ prolapse changed/avoided the practice of sexual intimacy due to embarrassment and/or discomfort. Pelvic organ prolapse greatly affected the personal and professional activities of women. These women adjusted the daily routine or ceased their activities. These women noted distraction when performing daily and/or work-related tasks, as well as embarrassment when seeking help. (Lowder, Ghetti, Nikolajski, Oliphant, & Zyczynski 2011)

The average age of women seeking medical attention for symptomatic POP is 61 years (Wu, Vaughan, et al. 2014). According to a demographic study conducted by Luber and colleagues (2001), there is a positive association between the increase in the age of women and the number of women who seek medical attention for POP. The proportion of women aged 30–39 years seeking medical care for POP is 1.7 per 1,000 people. The indicator is increasing among women aged 60-69 years to 13.2 per 1,000 people. The highest rate was observed among women aged 70–79 years and reaches 18.6 per 1,000 people. (Luber et al. 2001)

2.2 Etiology and risk factors of pelvic floor disorders

The etiology of POP is complex and multifactorial. Individual patients may have different combinations of causes, such as birth defects of the pelvic floor, genetic predisposition, obesity, aging, and others. Different risk factors may have a greater or lesser effect at different times throughout the life of an individual woman. A systematic review of risk factors for POP after restoration of native tissue revealed that parity, vaginal birth, age, and body mass index are confirmed risk factors for POP. Regarding patient counselling, preoperative stage was a confirmed risk factor for recurrence of POP. (Vergeldt at al. 2015)

The most important risk factor for POP and stress urinary incontinence is vaginal delivery (Bradley 2018; Giri et al. 2017; Maher et al. 2013). Vaginal delivery is associated with poor support for the pelvic floor 5 years after the first birth (Handa, Blomquist, Roem, & Munoz 2018). Vaginal delivery alone increases the risk of POP by 9.7 times (Quiroz, Munoz, Shippey, Gutman, & Handa 2010). According to Awwad et al. (2012), clinically significant POP is diagnosed in nulliparous women in 3.6% of cases, after one vaginal birth in 6.5%, 22.7% after two, 32.9% after three, and 46.8% after four. Interestingly, although parity is an established risk factor for primary POP, it is not a risk factor for relapse (Vergeldt et al. 2015).

According to research by Dietz Lanzarone (2005), in vaginal births, 36% of women have a separation of musculus levator ani. A meta-analysis by Friedman, Eslick, and Dietz (2019) demonstrated a significant relationship between the mode of delivery and the separation of musculus levator ani. The authors found that delivery with obstetric forceps was the most significant risk factor for the separation of musculus levator ani, statistically significant compared with physiological vaginal delivery and delivery using vacuum extraction of the fetus. The authors also found that vacuum extraction of the fetus is a weak risk factor for the separation of musculus levator ani. The risk factors identified can serve to inform patients and choose a delivery method. (Friedman et al. 2019) As a result of a systematic review by Frigerio, Mastrolia, Spelzini, Manodoro, Yohay, and Weintraub (2019) to determine the long-term effect of episiotomy on pelvic floor dysfunction, it was concluded that episiotomy does not adversely affect the development of POP and can even reduce

the severity and prevalence of prolapse without affecting the frequency of surgical interventions.

A meta-analysis by Yang and Sun (2019), which compared the effects of cesarean section and vaginal delivery on the function of the pelvic floor in puerperas, revealed that cesarean section delivery can reduce the incidence of urinary incontinence, prolapse, and damage to the pelvic muscles bottom. According to Weintraub, Glinter and Marcus-Braun (2020), Leijonhufvud, Lundholm, Cnattingius, Granath, Andolf, and Altman (2011) report that cesarean section serves as a protective factor against POP if a woman has not had additional vaginal delivery in the past.

Menopause is considered a key event associated with the onset or worsening of POP. Atrophy developed in conditions of estrogen deficiency after menopause is a problem for all pelvic structures and as a result POP can develop/progress. Symptoms and severity of POP increase significantly during the menopausal period. However, it is not possible to draw conclusions about the role of menopause alone in the development and/or progression of POP, since it is impossible to separate menopause from age and other concomitant conditions. (Tinelli, Malvasi, Rahimi, Negro, Vergara, Martignago, Pellegrino, & Cavallotti 2010)

Given the high social burden of pelvic floor disorders, it is extremely important to identify potentially modifiable risk factors in a timely manner. Aging and parity are most closely associated with POP, but these factors cannot be changed. (Vergeldt et al. 2015) Theoretically, parity and vaginal delivery can be changed (Vergeldt et al 2015), but it was found that obstetric providers (obstetrician-gynecologists, residents obstetrician-gynecologists, and midwives) rarely/never take into account future development of POP in their considerations in prenatal counseling and obstetric care (Dessie, Hacker, Dodge, & Elkadry 2015).

Obesity is a growing problem worldwide, including Kazakhstan (Fursov at al. 2017). Obesity is the only modifiable risk factor that can affect public health to reduce the burden of POP for public health and the economy. Overweight and obese women are more likely to have POP than normal women. This relationship is more characteristic of clinically pronounced POP. The most likely mechanism for the development of POP in obese women is an increase in intra-abdominal pressure and, consequently, an

increase in mechanical forces directed to the pelvic floor at rest, during coughing, or Valsalva maneuver, which causes weakening of the muscles of the pelvic floor and fascia. Weight loss is probably not associated with an improvement in the anatomical parameters of POP but may be associated with a decrease in prolapse symptoms. Weight loss should be considered the main option for preventing POP for obese women, as it has beneficial effects on many organ systems and reduces symptoms of pelvic floor disorders. The incidence of surgical complications in a population of women with POP and obesity does not increase. Obesity is also not a significant risk factor for POP relapse in the short term. However, increased intra-abdominal pressure may adversely affect long-term postoperative outcomes. Therefore, patients should be encouraged to maintain normal body weight for their health and to reduce the severity of POP symptoms. (Lee, Kerkhof, van Leijsen, & Heesakkers 2017)

It is known that there is a genetic predisposition to POP, regardless of other risk factors that can affect or exacerbate the development of POP. In women with a family history of prolapse, the family history of POP is 2.5 times higher than in the general population (Lince, van Kempen, Vierhout, & Kluivers 2012). According to Segev, Auslender, Feiner, Lissak, Lavie, and Abramov (2009), women with POP report having relatives with pelvic organ prolapsed, urinary incontinence, and/or abdominal or inguinal hernia. According to a study by Alcalay, Stav, and Eisenberg (2015), young women with POP have relatives with POP five times more likely than women who develop POP at an older age.

The relationship between POP and collagen quality has been shown in many studies, which also suggests a genetic predisposition. The strength of collagen, the main component of the connective tissue of the body, in particular the fascia and ligaments of the pelvic floor, is determined by genetic factors. The type of collagen and the body's ability to replace damaged collagen with strong and high-quality collagen are also determined by genetic factors. (Reid, You, & Luo 2011). According to some studies (Veit-Rubin, Cartwright, Singh, Digesu, Fernando, & Khullar 2016; Lammers, Lince, Spath, van Kempen, Hendriks, Vierhout, & Kluivers 2011), the incidence of collagen diseases, such as varicose veins and joint hypermobility, is increased in women with POP. A meta-analysis conducted by Veit-Rubin and his

colleagues (2016) determined that joint hypermobility is a clinically significant indicator characteristic of POP. Joint hypermobility usually occurs in childhood or at a young age and may be an early indicator of an increased risk of POP at a later age. An assessment of joint hypermobility can be used by clinicians along with other well-known POP risk factors to target women for primary prevention. (Veit-Rubin et al. 2016)

According to Awwad and colleagues (2012), clinically significant POP in women is characterized by the three most common symptoms: severity in the pelvic region (34.3%), urination disorders (32.7%), and a sensation of bulge in the vagina (29.1%). In women with complaints of severity in the pelvis or urination disorders, the probability of detecting POP during physical examination is 1.5 times higher, while the sensation of bulge in the vagina is associated with an increase in the probability of detecting prolapse by 2.2 times. The presence of all three symptoms together predicts the presence of clinically significant POP in 70% of cases. (Awwad et al. 2012)

The function of the bladder and urethra is often affected by the loss of support of the anterior wall of the vagina (urethrocele, cystocele) and apex. With the progression of anterior prolapse, most women report improvements in stress urinary incontinence and may actually experience progressive urinary dysfunction due to the obstruction of the exit of the bladder. In this case, women often report symptoms such as fluctuations in urination, a prolonged or intermittent flow of urination, the need to push the front prolapse with their hands up to help urinate, and a feeling of incomplete emptying of the bladder. Women with POP also have an increased risk of developing overactive bladder symptoms such as urgency, urination, frequency, and nocturia. (de Boer, Salvatore, Cardozo, Chapple, Kelleher, van Kerrebroeck, Kirby, Koelbl, Espuna-Pons, Milsom, Tubaro, Wagg, & Vierhout 2010)

Symptoms of defecation disorders are common in women with POP and can occur with any defect in the posterior region, including rectocele, enterocele, sigmoidocele or complete prolapse of the rectum. Complaints are constipation, incomplete evacuation, and difficult bowel movements. (Giannini, Russo, Cano, Chedraui, Goulis, Lambrinoudaki, Lopes, Mishra, Mueck, Rees, Senturk, Stevenson, Stute, Tuomikoski, & Simoncini 2018)

The prevalence of sexual dysfunction is about 30–50% in the general population, and in women with POP it increases to 50–83%. A decrease in sexual activity occurs due to concerns about the image of the vagina in women with pelvic prolapse, dyspareunia and urinary incontinence in women with urinary incontinence, as well as the fear of pollution during anal incontinence. (Verbeek, & Hayward 2019)

Assessing a patient with pelvic floor disorders requires an assessment of the anatomical defect, the full range of pelvic floor symptoms, and how these symptoms affect quality of life (Giannini et al. 2018). To assess the severity of POP (position of the pelvic floor at maximum straining - Valsalva test), various classifications have been proposed. The standardized terminology regarding pelvic disorders was described in 1996 by Bump and others. (Bump, Mattiasson, Bo, Brubaker, DeLancey, Klarskov, Shull, & Smith 1996) The Standardization Subcommittee of the International Continence Society created the Pelvic Organ Prolapse Quantification (POP-Q) system in 2002, which is a coding tool useful for both the clinician and the researcher. (Persu et al. 2018.) This system provides a reproducible description of the support of the anterior, posterior, and apical segments of the vagina using accurate measurements to a fixed reference point (hymen) and describes established criteria for various levels of support for the pelvic organs: from good support (POP-Q stage 0 or I) to almost complete lack of support (POP-Q stage IV) (Aguilar, White, & Rogers 2017).

At the present stage of development of medicine, the qualities of medical care and patient satisfaction have come to the fore. Correcting an anatomical defect (bulge) may not be enough (Hale & Fenner 2016). For the patient, the most important result of treatment, in addition to the anatomical recovery, is the elimination/relief of symptoms and an improvement in the quality of life. Reconstructive surgery is aimed not only at restoring the correct anatomy, but also at restoring functionality. The anatomical assessment does not provide information on the degree of symptom relief after surgery or worsening/onset of new symptoms. Therefore, psychometric tools for measuring quality of life are important in assessing women with pelvic floor disorders, assessing the severity of POP, its impact on quality of life, and treatment planning. (Kaminska, Futyma, Romanek-Piva, Streit-Cieckiewicz, & Rechberger 2019.)

Qualitative and quantitative assessment of the severity of clinical symptoms and the quality of life of women with pelvic floor disorders is carried out using specialized questionnaires (Aguilar et al. 2017). The most common specific questionnaires for pelvic dysfunction are PFDI-20 (Pelvic Floor Distress Inventory) and PFIQ-7 (Pelvic Floor Impact Questionnaire). PFDI and PFIQ were created in the USA in 2001 and are later presented in short forms as PFIQ-7 and PFDI-20. PFDI-20 and PFIQ-7 are valid, reliable, and responsive short forms of 2 quality-of-life questionnaires for women with pelvic floor disorders (Barber, Walters, & Bump 2005). Since pelvic floor disorders can affect various aspects of a woman's life, limiting the physical, social, and sexual aspects of her life, surveys using specialized questionnaires become an important source of information for health care providers to decide whether to treat a woman or what type of treatment will be most suitable in her case (Kaminska et al. 2019).

2.3 Treatment of pelvic floor disorders

POP treatment should be used for women who have clinically significant symptoms of POP and/or stress incontinence. When choosing a method of treatment for POP, it is necessary to consider the symptoms, concomitant diseases, and risk factors during surgery, as well as the preferences of the woman (Wu & Welk 2019). Surgical treatment of asymptomatic POP is not recommended (Giannini et al. 2018).

Conservative treatment for stress urinary incontinence and POP includes pelvic floor muscle training, and the use of vaginal pessaries. Reconstructive surgery is indicated for women with symptomatic POP for whom conservative treatments were not effective. Surgical treatment of stress urinary incontinence and POP involves restoration based on native tissues or nets with abdominal, laparoscopic, or vaginal access. (Wu & Welke 2019)

First-line intervention in POP is a conservative treatment that is an acceptable option for women with mild prolapse and mild symptoms. Lifestyle changes include: a change in diet, weight loss, decreased activity, which leads to pelvic floor tension, treatment of constipation, and smoking cessation. (Dumoulin, Hunter, Moore, Bradley, Burgio, Hagen, Imamura, Thakar, Williams, & Chambers 2014)

To date, the methods are well studied and have evidence base for the treatment of stress incontinence of training the pelvic floor muscles (Radziminska, Straczynska, Weber-Rajek, Styczynska, Strojek, & Piekorz 2018). However, in most cases, it is used for symptomatic forms of pelvic floor disorders and/or an existing POP, which does not allow achieving adequate treatment results. Pelvic floor muscle training is a structured and individualized exercise program that aims to improve pelvic floor muscle strength, endurance, relaxation, or a combination of these parameters. (Bo, Frawley, Haylen, et al. 2017) Pelvic floor muscle training increases the strength of the pelvic floor by repeated muscle contractions and enhances conscious muscle contraction before the alleged increase in intra-abdominal pressure, such as coughing (Dumoulin, Hay-Smith, Frawley, et al. 2015). Two studies (Hagen, Stark, Glazener, et al. 2014; Li, Gong, & Wang 2016) show that women with mild symptomatic POP who receive treatment with pelvic floor muscle training exhibit significant subjective symptom improvement and objective improvement in POP severity. A meta-analysis examining postpartum pelvic floor muscle training showed that pelvic floor muscle training probably improves urinary incontinence, especially symptoms of stress urinary incontinence, in women in the postpartum period. (Wu, McInnes, & Leong 2018)

According to Wu and Welk (2019), Robert, Schulz, Harvey (2013) defines the pessary as an intravaginal device to support the prolapsed vaginal wall. Pessaries can be used in women who want to conservatively treat stress urinary incontinence and/or POP, or in women awaiting surgical correction of stress urinary incontinence and/or POP. Vaginal pessaries can provide an improvement in symptoms of POPs in 49–90% of users (Fernando, Thakar, Sultan, Shah & Jones 2006, Clemons, Aquilar, Tillighast, Jackson & Myers 2004, according to Wu & Welk 2019). According to Wu and Welk (2019), Mao, Ai, Zhang (2018) report that a prospective cohort study conducted in China in 2018 on 142 women uses ancillary pessaries to treat symptomatic POPs, showing an improvement in pelvic DNA distress index (PFDI-20) and Pelvic Floor Examination Questionnaire (PFIQ-7), for example with improved sexual function.

The use of lasers (CO2 and erbium) in urogynecology has increased in recent years. Their use has been described for urinary incontinence, POP, and urogenital symptoms of menopause. The literature review by Bhide, Khullar, Swift, and Digesu

(2019) noted that the results of individual studies show that both lasers (CO2 and erbium) are effective in the treatment of urogynecological conditions. However, there is no qualitative data on the use of lasers in the form of multicenter, randomized, placebo-controlled trials. (Bhide, Khullar, Swift, & Digesu 2019)

At the present stage of the development of medicine, the main effective treatment for POP is surgical. According to various researchers, there are from 200 to 500 types of operations to eliminate POP. In the surgical correction of POP, it is important to identify the symptoms that apply to each specific anatomical department, as this contributes to the adoption of surgical decisions. A combination of anatomical defects and the individual risks of surgical complications affect surgical planning. Isolated reconstruction of the anterior, posterior wall of the vagina and apical prolapse is usually performed transvaginally. Abdominal surgery is more effective and safer for common or multicomponent POP. Surgical corrections include pelvic floor restoration using your own tissues or grafts (biological or synthetic). (Giannini et al. 2018)

2.4 The role of the nurse/midwife in the diagnosis of pelvic floor disorders

Pelvic floor disorders are a serious public health problem affecting the lives of millions of adult women. Although pelvic floor disorders are not life-threatening diseases, they carry a significant public health burden. Health care providers (doctors, nurses, residents) should regularly evaluate pelvic floor disorders and take a holistic but cost-effective approach. Surgery can offer an effective treatment for pelvic floor disorder, and many patients with symptoms of a pelvic floor disorder choose surgery. The increasing demand for surgical treatment and care in connection with pelvic floor disorders in the future will lead to an increase in the need for providers who are trained at the appropriate level in the field of female pelvic medicine and reconstructive surgery, the latest specialized field in obstetrics and gynecology. (Dieter et al. 2015)

According to Dessie and colleagues (2015), Hendrix, Clark, Nygaard, Aragaki, Barnabei, and McTiernan (2002), Morkved and Bo (2000), and Wu, Hundley, Fulton

and Myer (2009) report that despite the known positive correlation between parity and pelvic floor disorders, in particular urinary incontinence and POP, as well as available effective treatments, it was noted that health care providers do not discuss these issues with patients. In their study, Dessie (2015) found that most obstetrician-gynecologists never advised pregnant women during prenatal counseling about potential risks to the pelvic floor, such as dyspareunia and urinary and fecal incontinence. A third of obstetric care providers (obstetrician-gynecologists, resident obstetrician-gynecologists and midwives) reported that they had never discussed pelvic floor dysfunction as a factor when considering various delivery methods. The reasons for the lack of consultation on pelvic floor dysfunction were lack of time and the lack of sufficient knowledge regarding pelvic floor dysfunction. (Dessie et al. 2015)

Primary care physicians play an important role in patient access to appropriate health care. According to Wong, Kaneshiro, and Oyama (2019), family medicine doctors correctly identified the incidence of urinary incontinence, overactive bladder, and POP in only 34%, 38% and 9% of cases, respectively. The authors found that primary care physicians screen for stress urinary incontinence and overactive bladder "sometimes" in 36% and 45%, respectively, but "almost never" do screening for POP (43%). (Wong et al. 2019) According to the Department of Urogynecology, University of Hawaii, 78% of their patients with pelvic floor disorders were referred by gynecologists, 17% by primary care physicians, and 5% by themselves. This low referral rate from primary care physicians suggests a lack of knowledge about urogynecology as a specialization. (Wong et al. 2019)

A study conducted by Jang, Kwon, Kim, Lee, Lee, Kim, and Kim (2015) evaluated knowledge and practical behaviors regarding urinary incontinence among 756 healthcare providers in 11 long-term care hospitals in Korean metropolitan areas. The authors report that the overall urinary incontinence knowledge score was above average (81% correct rate), and a knowledge deficit was found for urinary incontinence risk factors. The level of knowledge of doctors was the highest, and then nurses followed, then other medical workers. However, no relationship was found between the average knowledge score and the length of service in the hospital. (Jang et al. 2015)

Women's knowledge of pelvic floor disorder is very limited and can be influenced by socioeconomic variables such as race and educational level. The costs of stress urinary incontinence and POP are financially and socially significant for those living with its consequences. Knowledge of the pelvic floor muscles is necessary for women to understand their own body. This knowledge contributes to the understanding of the guidelines and treatment methods offered by healthcare providers. (Fante et al. 2019) Lyatoshinskaya, Gumina, Popov, Koch, Hagmann, and Umek (2016) conducted a study evaluating the knowledge of patients with POP at tertiary prolapse centers in Vienna and Moscow. The authors found that the average patient knowledge of POP did not differ between patients in Vienna and patients in Moscow. However, a detailed analysis showed that patients in Moscow were more informed about the use of the grid for POP correction than patients in Vienna (80% versus 32% of the correct answers). Patients in Moscow showed stronger preferences in finding information before visiting a doctor. It was found that patients with POP in Vienna and Moscow prefer to receive information from specialized medical institutions.

Women evaluate the opinion of a doctor as one of the most important factors in making a decision. Therefore, doctors should avoid an authoritative form of interaction with patients. Doctors should provide the patient with all the necessary information to make a joint decision on the choice of treatment method. Providing additional information about new diagnostic tools and treatments for POP in the media and/or the Internet can greatly improve patient understanding of POP. (Lyatoshinskaya et al. 2016) The lack of knowledge about the pelvic floor in women indicates the need to create educational programs for health professionals on this topic. (Fante, Silva, Mateus-Vasconcelos, Ferreira, & Brito 2019) Communication and information are important in treating patients with pelvic floor disorders. Correct information is important in obtaining patient consent for the proposed therapy, increasing their participation in treatment, reducing anxiety, providing knowledge about the disease, and assessing patient satisfaction with the results. (Fante et al. 2019)

Management of pelvic floor disorders requires significant clinical skills. The problem of pelvic floor dysfunction in women is multimodal and multidisciplinary (gynecology, urology, coloproctology) and requires competence in the field of pelvic medicine and

surgery. The integration of hormonal, non-hormonal, and surgical strategies is important and should be adapted to changing circumstances on an individual basis. When surgery is required, optimal management requires providers of medical services (doctors, nurses) who are familiar with the advantages and disadvantages of all available medical treatments. Complex cases should be referred to specialized referral centers. POP management should be integrated into the practice of menopausal care providers. (Giannini et al. 2018)

Menopause health workers are in a key position to detect pelvic floor disorders and must either solve the problem on their own or refer women correctly. Managing POP is challenging and requires advanced skills, especially when surgery is required. POP should not be ignored, and women should be informed about the available treatment methods and actively participate with their healthcare provider in making managerial decisions. Clinical services should be able to offer state-of-the-art non-surgical and surgical options to meet the treatment needs of this growing problem and help women enjoy their later years. (Giannini et al. 2018)

Identifying women at risk remains a key element in the prevention and planning of health resource allocation strategies. Although childbirth is recognized as an important predictor of POP and stressful urinary incontinence, it is difficult to advise women and intervene during childbirth because of the inability to accurately calculate the patient's risk of developing pelvic floor disorders in the presence of several risk factors and the long period before the onset of pelvic floor disorder. (Jelovsek, Chagin, Gyhagen, Hagen, Wilson, Kattan, Elders, Barber, Areskoug, MacArthur & Milsom 2018) Jelovsek and colleagues (2018) have developed models that can provide an opportunity before delivery to determine the long-term risk (12 and 20 years after birth) of developing pelvic floor disorders and identify women who are at high risk. Such models can provide prevention strategies: pelvic floor muscle training, weight control, or elective caesarean section. Models are available at http://riskcalc.org/UR_CHOICE/.

Women with pelvic floor disorders primarily turn to primary care providers (doctors). Primary care providers should be more aware of the risk factors for pelvic floor disorders, their symptoms, and treatment options to solve the problem with their patients. If they do not have enough time or interest to become more informed,

primary care providers should be prepared to refer patients to specialists who are trained to diagnose and treat this problem. (Muller 2010)

Nurses can play an important role in advising women on their treatment options (McIntosh, 2005). Primary preventive interventions (risk education, counseling, and patient education) can be used to raise awareness and promote women's health. Lifestyle modifications (healthy eating, Kegel exercises, weight loss) provide overall health promotion and relieve symptoms of pelvic floor disorders (Seshan, AlKhasawneh, & Al Hashmi 2016).

According to Hunter and Wagg (2018), Paterson, Ostaszkiewicz, Suyasa, Skelly, and Bellefeuille (2016) report that nurses with special education have special theoretical and practical knowledge about dysfunction of the bladder, intestines, and pelvic floor. According to Hunter and Wagg (2018), Peplar and Wragg (2010) report that nurses are ideal for initial assessment and treatment of urinary incontinence. However, barriers exist for nurses to take these actions, such as lack of time. According to Hunter and Wagg (2018), Dingwall and McLafferty (2006) report barriers such as nursing that urinary incontinence is a normal, expected consequence of aging, a lack

In the Republic of Kazakhstan, the number of epidemiological studies on the knowledge of nurses and midwives about POP and stress incontinence in women is limited. In Kazakhstan, there has not been a single official study of the knowledge of medical providers (nurses, midwives, general practitioners and gynecologists) about diseases of the pelvic floor in women

3 Purpose, objectives and research questions

The purpose of this study is to evaluate the knowledge of nurses and midwives about pelvic floor disorders in women and develop recommendations for improving the proper medical care of patients with this problem.

The objectives are:

1. Assess the knowledge of nurses and midwives about pelvic floor disorders

2. Compare nurses and midwives' knowledge of pelvic floor disorders

3. Develop recommendations to improve proper health care for patients with pelvic floor disorders

4 Methodology

4.1 Quantitative research

Quantitative research is a broad general term for research, and it is based on a positivist position. Methods to collect evidence are used, and the evidence is then converted to numerical data. During exploration, numerical data can be statistically manipulated to confirm or disprove the original hypothesis or research question. The results obtained can be used to predict or identify trends. Formal, objective, and systematic processes are used to explain causal relationships between events or things (variables). The principle of stability and predictability of the world is at the heart of quantitative research. By controlling external influences, the quantitative researcher can strive to minimize bias that would otherwise explain the results. The researcher and the consumer of the research, for the ultimate goal, would be confident that any results are valid and reliable (Topping 2015, 163).

Empiricism implies that the examination or arrangement of issues, such as investigation, must be carried out through perception and verification. The appropriation of the scientific method moved the advancement of considering in thinking from earlier clarifications and enabled a way of looking at the characteristic world that was freed from mystery and superstition and clouded by religious explanations. (Shipman 1997)

In quantitative research, the focus of the study must be broken down into components that can be promptly characterized and quantifiable. This gives the analyst and the reader confidence that the results are based on systematic and reproducible measures. The precision and consistence of the used instruments is crucial to undertaking quantitative research and permits other researchers to duplicate the study and thus compare, affirm, and address existing discoveries. However, no matter how well planned or executed the research is, it can still be realiable but not valid (Topping 2015, 164).

According to Awwad and colleagues (2012), the possible changes in the incidence, prevalence, and natural history of POP in a given population depends on the presence of various risk factors and their associated condition. This implies that starting to quantify the prevalence of the disease and its risk factors in the target population will help develop optimal and cost-effective preventive and therapeutic strategies to help address this problem at the national level.

According to information from Barber and colleagues (2005), measuring the quality of life is essential in evaluating treatment and assessing the impact of POP disorders on women. Although more than 14 instruments have been developed and validated to assess the impact of urinary incontinence on women's quality of life, unfortunately no instruments have been published to date that only assess the impact of pelvic organ prolapse on quality of life. In 2001, Barber and colleagues published PFDI and PFIQ 2, reliable tools for women with all forms of pelvic floor disorder to determine their quality of life.

4.2 Data collection method

The questionnaire used in this study was developed by Mazloomdoost, Crisp, Kleeman, and Pauls (2017). In 2017, they used the questionnaire in a national survey to assess primary care providers' experience and management of pelvic floor disorders (Mazloomdoost et al. 2017). They revised the questionnaire from the previous version that had been previously administered among primary care doctors and added elements about current practices and perceptions of stress and urgency of urinary incontinence. Question about the knowledge of the POP-Q classification was added in my study. And permission to use the questionnaire form the authors was received.

An online survey was designed to study demographic data and the knowledge of nurses and midwives about urinary incontinence (UI), overactive bladder (OAB), and pelvic organ prolapse (POP) in women. Using a secure online server at Webropol, this online questionary was distributed to nurses and midwives.

The questionnaire consisted of 19 items (Appendix 2) and was designed to find out whether nurses/midwives are familiar with the UI, OAB, and POP conditions in their

patients. In the questionnaire, five items examined the demographic information about nurses and midwives (1–5), and 14 items assessed the knowledge of nurses and midwives about pelvic floor disorders (6–19). Then, participants were polled for their convenience in recognizing or diagnosing UI, OAB, and POP, with answer options: "very convenient", "fairly convenient", "neither comfortable nor inconvenient", "somewhat inconvenient", and "very inconvenient". This was followed by items regarding the frequency with which patients made complaints about these POP disorders as well as screening, treatment, and referral patterns. Finally, questions related to the ability to distinguish between types and levels of comfort during Stress and Urge urinary incontinence, the number of colleagues working together, and the familiarity with the POP specialists in their area.

4.3 Data collection and analysis

An electronic invitation was sent to the PHC Director in the Karasai district, the city of Kaskelen. This district has 22 villages with medical outpatient clinics; in one rural district, there are about 15 general practice nurses and about 2–3 midwives working in a rural dispensary. The email invitation described the research and provided a link to the survey. Questionaries were sent to approximately 100 medical personnel. The respondents' email addresses were obtained with the permission of the PHC Director, as well as available email addresses published on the Internet. Respondents (nurses/midwives) were informed that they provided informed consent to participate in the survey, and all responses are confidential, filling out the questionnaire is voluntary, and that no payment or incentive would be awarded for participating in the survey. The survey could only be accessed and completed once by each participant since Webropol allows a setting where only one response is allowed per browser.

Statistical analysis of the data was performed using IBM SPSS Statistics for Windows version 26 (IBM Corp., Armonk, NY). Descriptive statistics are presented using the mean and standard deviations for normally distributed data.

4.4 Ethical Aspects

The survey participants were informed about the goals and objectives of the study. Respondents were also informed about voluntary participation and the anonymous and confidential processing of research data. The identity of the respondents will not be disclosed at any stage of the presentation of results (Rosnow & Rosenthal 2011). Research data will be stored in a password-protected database. The identity of the respondents will not be disclosed at any stage of the presentation of the results (Rosnow & Rosenthal 2011).

4.5 Reliability and Validity

The strengths of this study include items regarding prolapse disorders and referral patterns, two topics with limited established information in the literature. The research was also able to provide information regarding consultants most often utilized by PCPs.

The translation of the questionnaire was carried out according to the instruction by WHO "Process of translation and adaptation of instruments" (WHO 2019). Following the translation of the questionnaire into Russian and Kazakh, the content of the actions was carefully studied, i.e. whether the instrument adequately covered the entire area related to the variable. The web-based nature of the survey helped preserve anonymity and prevented respondents from completing the survey more than once.

Limitations include those inherent to Internet surveys. It was not possible to elaborate on items as a result of the multiple choice format. The response rate is also uncertain as it was not tracked how many individuals received the emails and the survey link. Although the response rate could potentially be calculated based on the number of initial emails sent, it was not possible to determine whether they were delivered or opened correctly, which could lead to a distorted response rate. Further limitations include the possibility that no responder bias may also have led to an overstatement or understatement of familiarity with PFDs, as practitioners who rarely encounter or are unfamiliar with these disorders may have opted to not

complete the survey. Another limitation is that older nurses may not be able to use the Internet.

In general, an electronic survey was opened for viewing in Kazakh language by 285 (66%) respondents, of which 94 respondents (22%) began the electronic survey, and 52 respondents (12%) completed the survey and sent it via the Webropol system. The electronic survey was opened for viewing in Russian language by 371 (67%) of the respondents, of which 118 (21%) began the electronic survey, and 68 (12%) of the respondents completed the electronic survey and sent it via the Webpool system (see Table 1).

Table 1. The total population number of surveys

Follow up statistics	**Frequency**	**Percent**
Kazakh		
Started responding	94	22
Submitted responses: Public weblink	52	12
Survey opened by respondents	285	66
Total	**431**	**100**
Russian		
Started responding	118	21
Submitted responses: Public weblink	68	12
Survey opened by respondents	371	67
Total	**557**	**100**

5 Results

In total, 120 completed surveys were received in both languages. Of these, 52 (43%) were in the Kazakh language and 68 (57%) in the Russian language. (See Table 2).

Table 2. The number of electronic surveys performed for analysis

Follow up statistics	Frequency	Percent
Kazakh	52	43
Russian	68	57
Total	**120**	**100**

5.1 Social characteristics of nurses and midwives

The social characteristics of the respondents in this study are presented in Table 3. According to the analysis, the survey was performed mainly by women. An analysis of the age of the nurses and midwives showed that 75.8% (n = 91) of respondents were aged 18 to 50 years, and 24.2% (n = 29) were aged 51 years and above. This study showed that the number of practicing nurses was 84.2% of respondents (n = 101), midwives 10% (n = 12), and other specialists 5.8% (n = 7). According to this result, it was found that the survey involved mainly nurses. At the time of the study, 32.5% (n = 39) of respondents reported that they have experience from 1 year to 5 years, 25% (n = 30) have experience of 6–15 years, 19.2% (n = 23) have experience of 16–25 years, and 23.3% (n = 28) have experience over 25 years. Thus, it was found that 57.5% (n = 69) of respondents have experience of up to 15 years, and 42.5% (n = 51) of respondents have experience of more than 15 years. Based on this, we can say that employees with experience up to 15 years or more were more responsible approaching the introduction of the electronic survey.

Most respondents worked in state organizations 82.5% (n = 99), and 15% (n = 18) of respondents worked in private organizations. Those working at a university/college accounted for 2.5% (n = 3).

Table 3. Social characteristics of respondents (n=120)

Social characteristics		Frequency	Percent
Gender			
	male	1	0,8
	female	119	99,2
Age			
	18–30	33	27,5
	31–40	28	23,3
	41–50	30	25,0
	51–60	27	22,5
	Over 60	2	1,7
Specialty			
	General practice nurse	101	84,2
	Midwife	12	10,0
	Other	7	5,8
Work experience			
	1–5 years	39	32,5
	6–15 years	30	25
	16–25 years	23	19,2
	>25 years	28	23,3
Nature of organization			
	University or college / academic	3	2,5
	Private organization	18	15,0
	Government organization	99	82,5
The number of female patients you are advising daily:			
	Less than 10	54	45,0
	11–20	49	40,8
	21–30	12	10,0
	31–40	4	3,3
	Over 40	1	,8
	Total	**120**	**100,0**

The study shows that the number of patients consulted daily by nurses and midwives was 45% (n = 54) in the group that saw less than 10 patients, and 40.8% (n = 49) 11 to 20 patients per day. Based on this result, it was found that if we summarize both parameters above, then for most nurses and midwives, approximately 20 patients were consulted daily by 85.8% (n = 103), and about half (40.8%) saw 11–20 patients per day (see Figure 1).

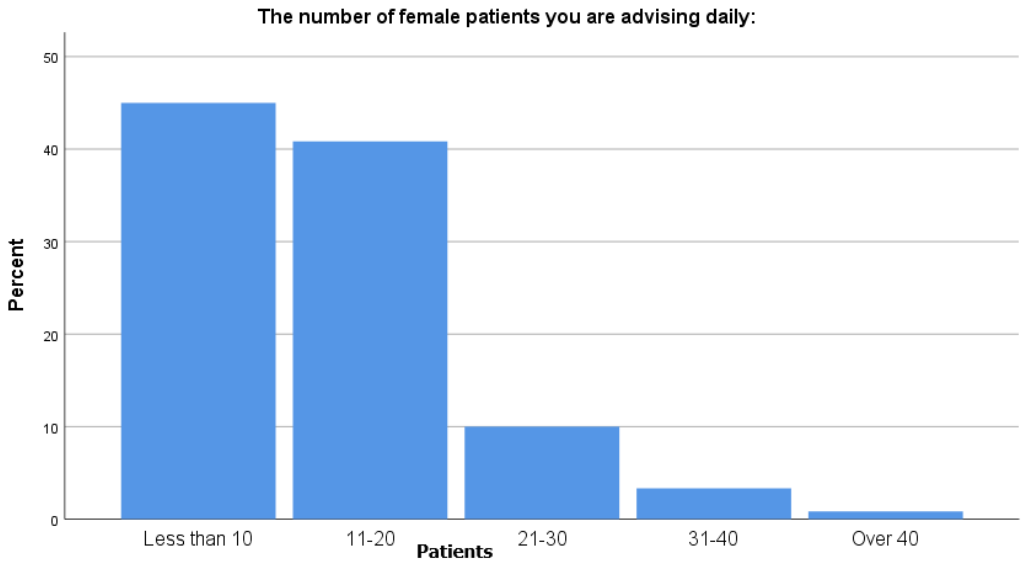

Figure 1. Percentage of patients nurses and midwives are advising daily (n = 120)

5.2 Knowledge of Female Pelvic Floor Disorders

Familiarity with the subspecialties of POPs of nurses and midwives was the highest for Reconstructive Surgery which resulted in 2,7667 (SD = 1,45944), then for Urogynecology 2,4333 (SD = 1,42448), and the lowest for Female Pelvic Medicine 2,1917 (SD = 1,27876). (See Table 4.) This means that, in general, the respondents surveyed were more familiar with Female Pelvic Medicine than Reconstructive Surgery.

Figure 2 shows the percentage of nurses and midwives who were familiar with the subspecialties in POP. The answers with the “Very familiar” and “Somewhat familiar” options were 34.2% and 40.8% for Female Pelvic Medicine and 31.7% and 34.2% for urogynecology, respectively. For Reconstructive Surgery, the result was 20% and 37.5%, respectively. (See Figure 2).

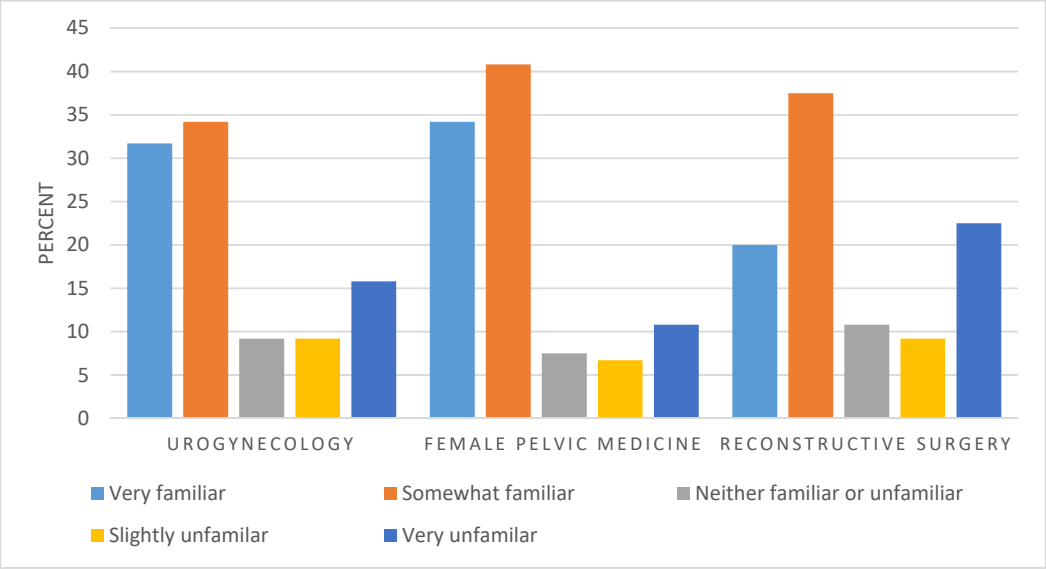

Figure 2. Percentage of nurses and midwives' knowledge about POP subspecialties (n = 120)

The percentage of women in the general population with pelvic floor disorders, according to the respondents, for urinary incontinence was SD = 1,24682, then pelvic organ prolapse SD = 1,31227 and, after that, overactive bladder SD = 1, 22506. (See Table 5 in Appendix 3.)

Figure 3 shows the percentage of women who have the following conditions: urinary incontinence, overactive bladder, and pelvic organ prolapse. As reflected in the histogram, the answers with the options "<10%" and "11–30%" amounted to 37,5% and 22,5%, and 41,7% and 29,2%, respectively for urinary incontinence and overactive bladder. For pelvic organ prolapse, the numbers were 40,8% and 20,8%. (See Figure 3).

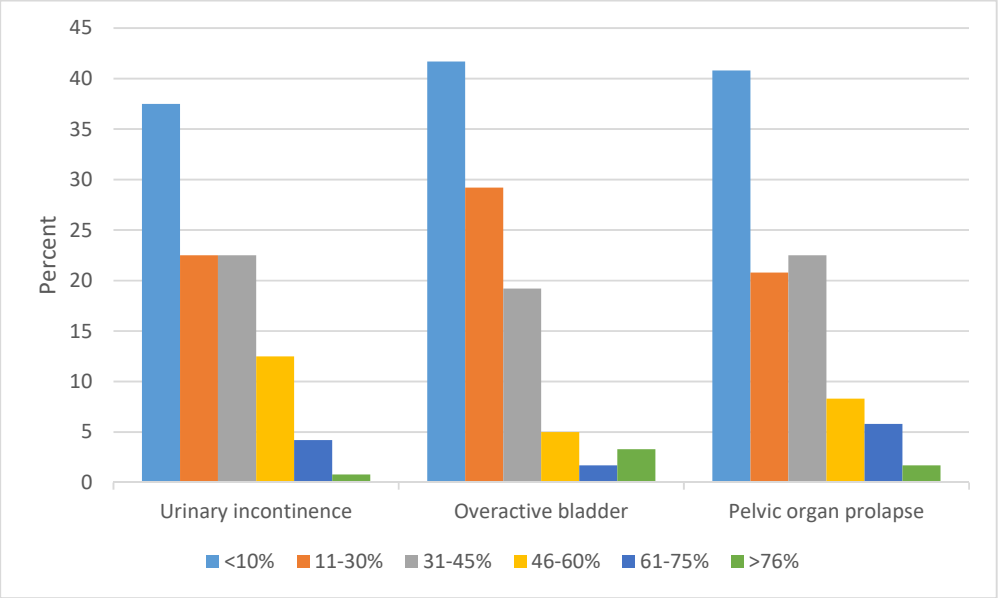

Figure 3. Percentage of nurses and midwives' knowledge about POP prevalence in the general population (n = 120)

The level of comfort in the diagnosis of POP was analyzed on a 5-point Likert scale (Very comfortable and Very uncomfortable) (see Table 6 in Appendix). The highest average values were for urinary incontinence 3,1833 (SD = 1,47234), then pelvic prolapse 3,0333 (SD = 1,35444), and the lowest for overactive bladder 2,9417 (SD = 1,33599). This means that respondents believe that their level of comfort with urinary incontinence and prolapse of the pelvic organs is very low, and comfort with overactive bladder turned out to be quite a bit higher.

Figure 4 shows the percentage of how uncomfortable nurses and midwifes feel when recognizing these conditions. Almost half (45 %) of the nurses feel very or somewhat uncomfortable (15,8% and 29.2 %, respectively) when diagnosing or recognizing urinary incontinence. Less than half (41.7%) of the nurses feel very and somewhat uncomfortable (22.5% and 19.2%, respectively) when diagnosing or recognizing pelvic organ prolapse. (See Figure 4).

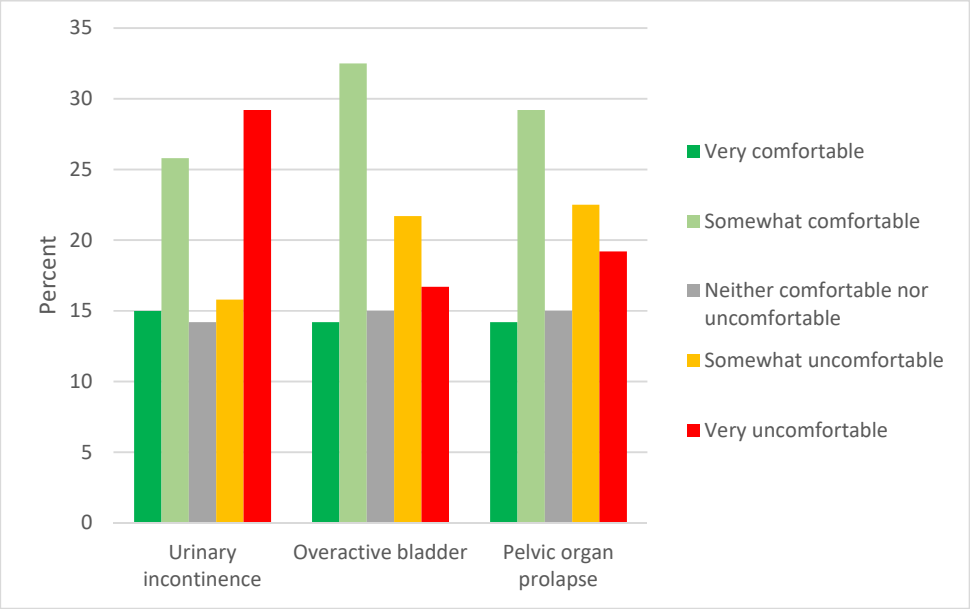

Figure 4. Percentage of nurses and midwives' comfort level with diagnosis/recognition of POP (n = 120)

Based on the available data from nurses and midwives, the reported bothersome symptoms were analyzed, and the following results were accordingly obtained (see Table 7). The highest average values were for Urinary incontinence 1,8333 (SD = 1,16916), then Overactive bladder 1,8000 (SD = 1,15664), and the lowest for Pelvic organ prolapse 1,7250 (SD = 1,09208).

Figure 5 shows the percentage of reported bothersome symptoms from patients as per survey results from nurses and midwives regarding these conditions. More than half (58.3%) of nurses believe that less than 10% of patients report bothersome symptoms with pelvic organ prolapse. The same situation is observed with overactive bladder and urinary incontinence, 55% and 53.3%, respectively. (See Figure 5).

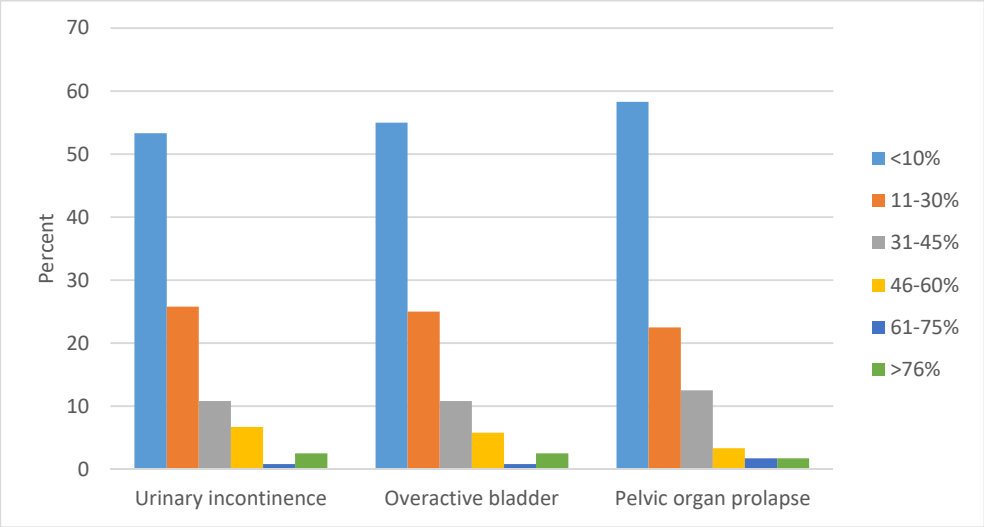

Figure 5. Percentage of patients reporting bothersome symptoms (n = 120)

The data on the frequency of asking patients with symptoms was analyzed on a 4-point Likert scale (1-All of the time, 2-Very often, 3-Some of the time, 4-Very little or hardly ever) (see Table 8). The highest average values for an overactive bladder were SD = 0,96144, after pelvic organ prolapse SD = 0,98675, and the lowest for urinary incontinence SD = 0,96837.

Figure 6 shows the percentage of the frequency with which patients were asked for the symptoms of these conditions. More than half (51,7 %) of the nurses asked very often or all of the time (26,7% and 25,0 %, respectively) for urinary incontinence. Less than half (44,2%) of the nurses asked very often or all of the time (22,5% and 21,7%, respectively) for pelvic organ prolapse. (See Figure 6).

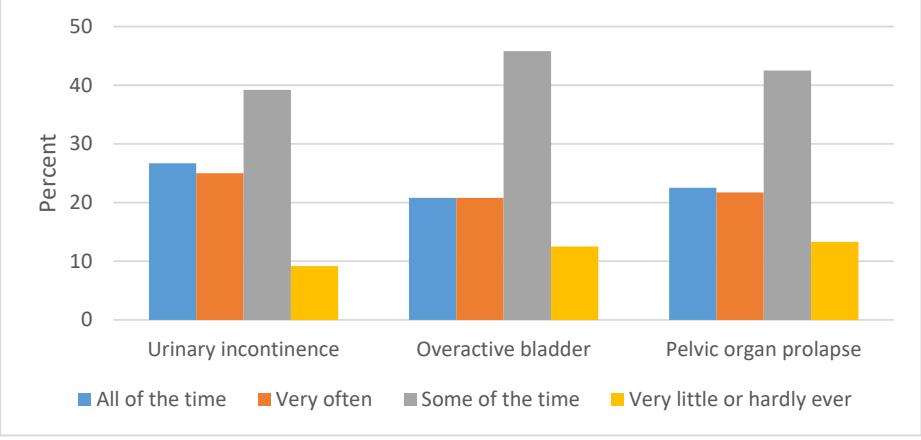

Figure 6. Percentage of how often nurses and midwives ask their patients about POP symptoms (n = 120)

The data on the percentage of action if the patient complained of POP symptoms was analyzed on a 5-point Likert scale (Treat the patient and I am see patients with this complaint) (see Table 8). The highest average values for pelvic prolapse were 2,8583 (SD = 0,83310), after an overactive bladder 2,8833 (SD = 0,91838), and the lowest for urinary incontinence 2,7750 (SD = 0,80401).

Figure 7 shows the percentage of actions with patients complaining of a symptom of POP. More than half (71,7%) of nurses would refer the patient to a specialist immediately in case of pelvic organ prolapse. The same situation is observed with overactive bladder and urinary incontinence, 67,5% and 70,8%, respectively. (See Figure 7).

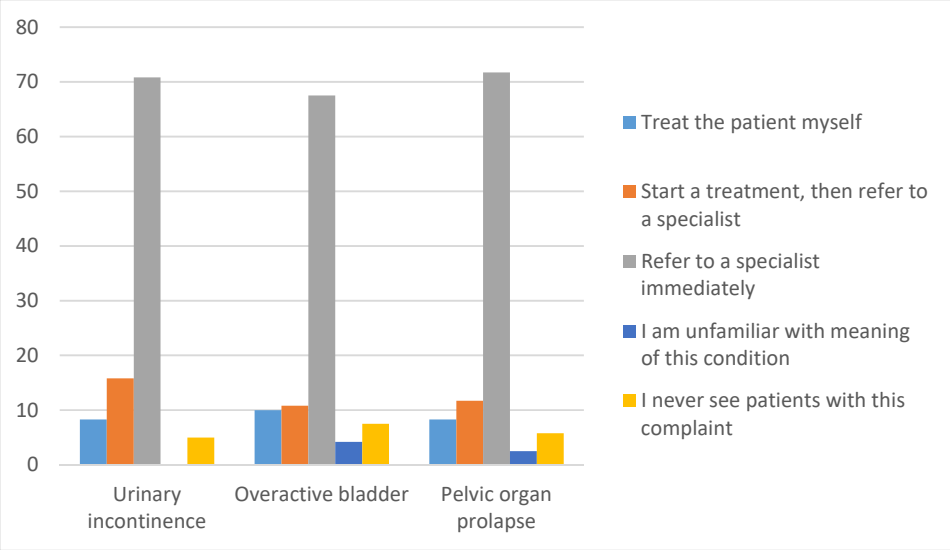

Figure 7. Percentage of the actions taken by nurses and midwives with patients who have complained of POP symptom (n = 120)

The data of women referred to a specialist for POP disorders, which will be selected first, was analyzed on a 4-point Likert scale (Gynecology and I would not know to whom to refer) (see Table 10). The highest average values was for pelvic organ prolapse SD = 0,57242, followed by urinary incontinence SD = 0,54226, and the lowest for overactive bladder SD = 0,82158.

Figure 8 shows the percentage of referral to a specialist for a woman with POP disorders who would be nurses' and midwives' first choice for these conditions. More than half (54,2%) of nurses would first refer to a gynecologist for pelvic organ prolapse. More than half (70,8% and 70,0%, respectively) of nurses would first

refer to an urologist for urinary incontinence and overactive bladder. (See Figure 8).

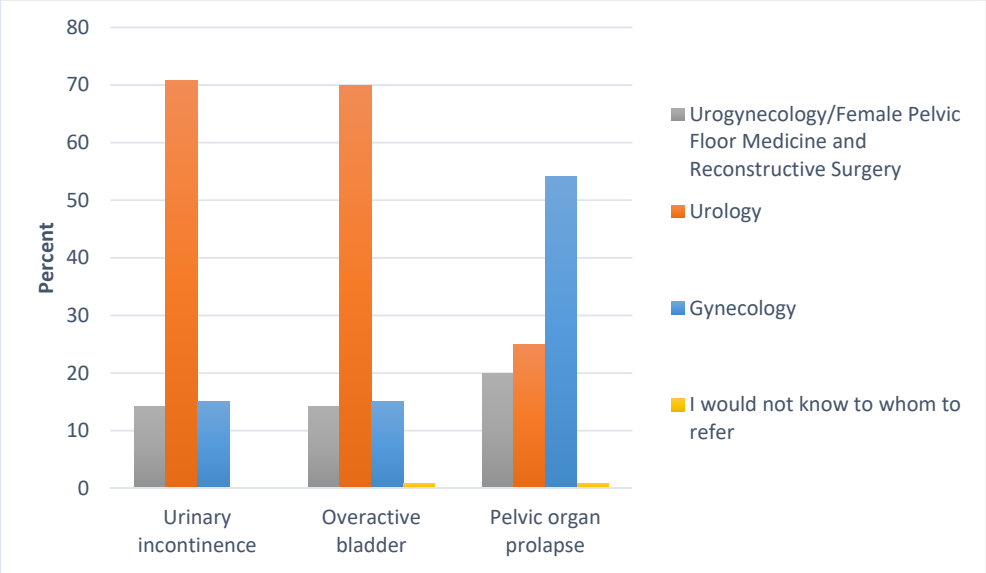

Figure 8. Percentage of-nurses and midwives' first choice for referral (n = 120)

The data on the knowledge of the POP-Q classification, surveying patients about incontinence during routine preventive examinations, determining the difference and level of comfort in the diagnosis between stress and urge urinary incontinence, the number of colleagues working with respondents, and nurses' and midwives' knowledge of POP specialists was analyzed on a 4-point Likert scale (Familiar and Not familiar) (see Table 11).

Figure 9 shows the percentage of knowledge about POP-Q (Pelvic Organ Prolapse Quantification) among nurses and midwives. More than half (79,2 %) of the nurses answered not or somewhat unfamiliar (50,0% and 29,2%, respectively) with POP-Q classification. These data allowed us to conclude that the majority of respondents are unfamiliar with the POP-Q classification, while the number of respondents familiar or familiar enough is only about 20%. (See Figure 9).

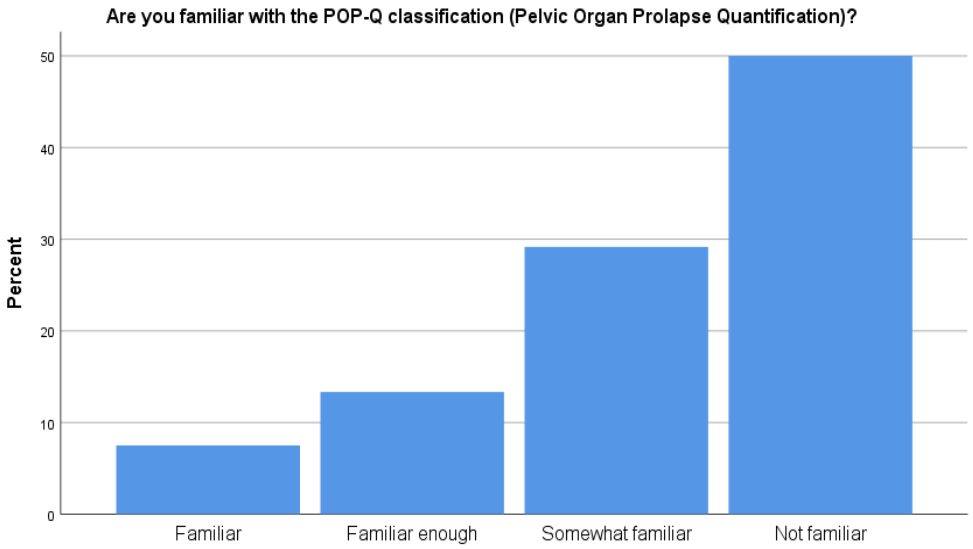

Figure 9. Percentage of-nurses and midwives' knowledge about the POP-Q classification (n = 120)

Figure 10 shows the percentage of a patient survey of incontinence during routine preventive examinations among nurses and midwives. More than half (79,2 %) of the nurses answered strongly agree or agree (27,5% and 50,0%, respectively) regarding asking patients about incontinence. (See Figure 10).

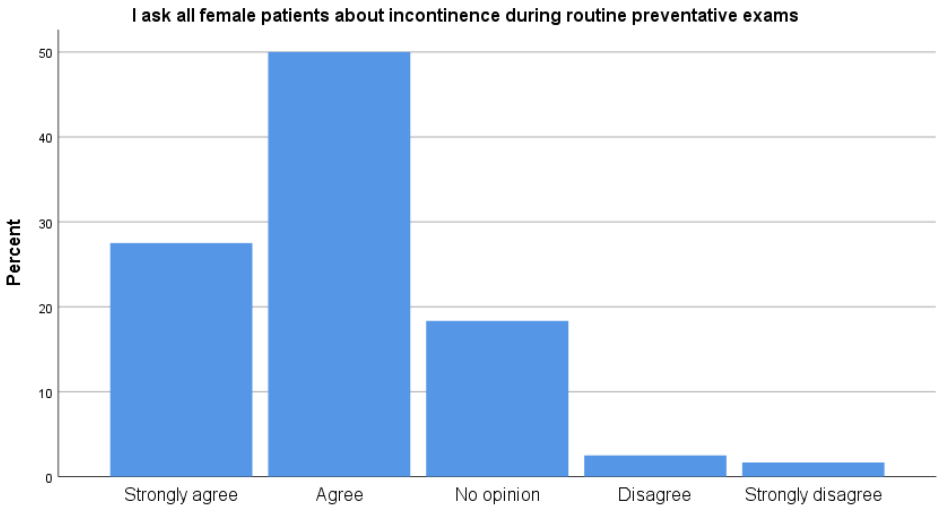

Figure 10. Percentage of nurses and midwives agreement with the statement regarding routinely asking about incontinence (n = 120)

Figure 11 shows the percentages for the knowledge of the difference between stress and urge urinary incontinence among nurses and midwives. Half (50,0 %) of the nurses answered strongly agree or agree (16,7% and 33,3%, respectively) regarding

determining the difference between stress and urge urinary incontinence. (See Figure 11).

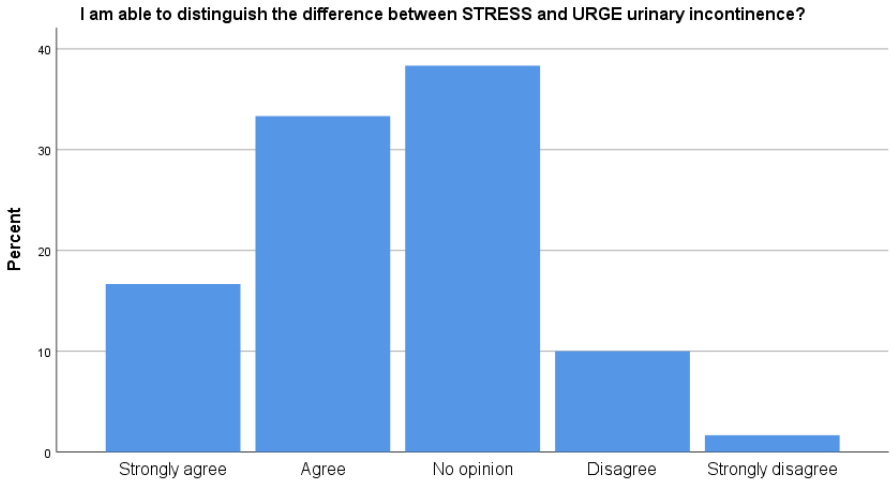

Figure 11. Percentage of nurses and midwives agreement with the statement about their ability to distinguish stress and urge incontinence (n = 120)

Figure 12 shows the percentage of discomfort in the diagnosis of stress and urge urinary incontinence. Less than half (43,3 %) of the nurses answered strongly agree or agree (8,3% and 35,0%, respectively) when diagnosing stress and urge urinary incontinence. More than half of the total number of respondents will likely need the help of more experienced colleagues or another POP medical specialist (see Figure 12).

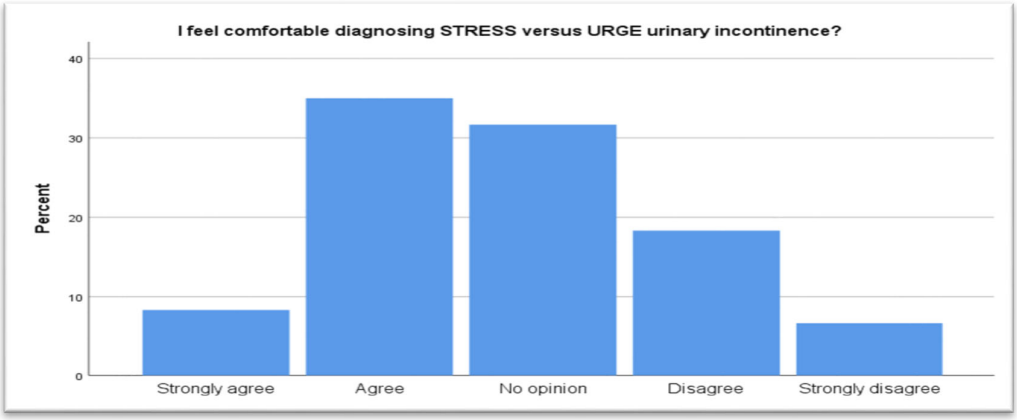

Figure 12. Percentage of nurses and midwives' comfortability to diagnose stress versus urge incontinence (n = 120)

Figure 13 shows the percentage of colleagues working with respondents. Half (50.0 %) of the nurses worked with more than 10 people or other (20,8% and 29,2%, respectively). These data showed that half of the total number of respondents work in large teams. Half of the total number of respondents work in rural outpatient clinics with a small number of staff. (See Figure 13).

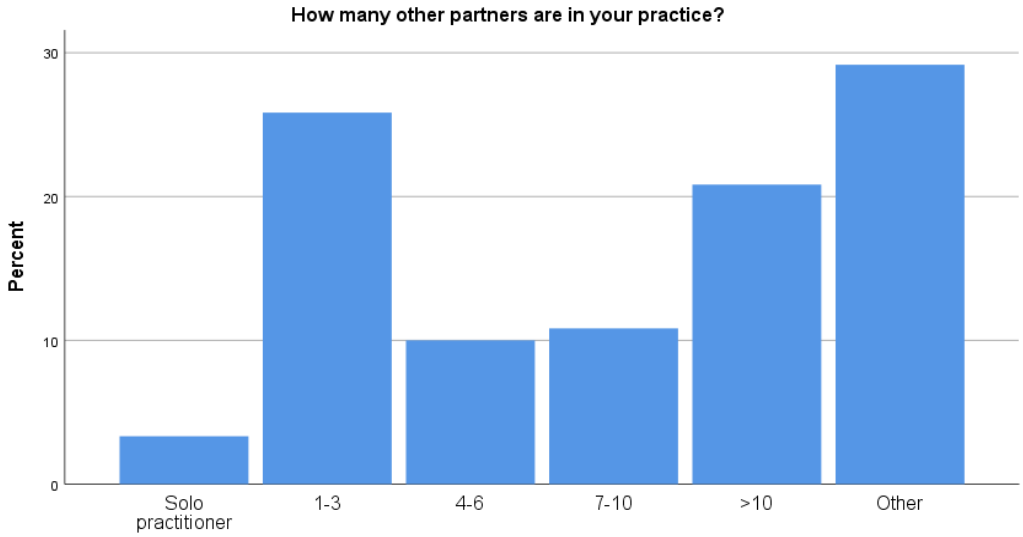

Figure 13. Percentage of nurses and midwives' number of partners in practice (n=120)

Figure 14 shows the percentage of knowledge of the urogynecology/specialist in female pelvic organ medicine and reconstructive surgery in the respondents' area of work. As can be seen on the histogram, the answers with the "Yes" and "No" options amounted to 37,5% and 62,5%, respectively. These data showed that more than half of the total number of respondents were unfamiliar with POP specialists. (See Figure 14).

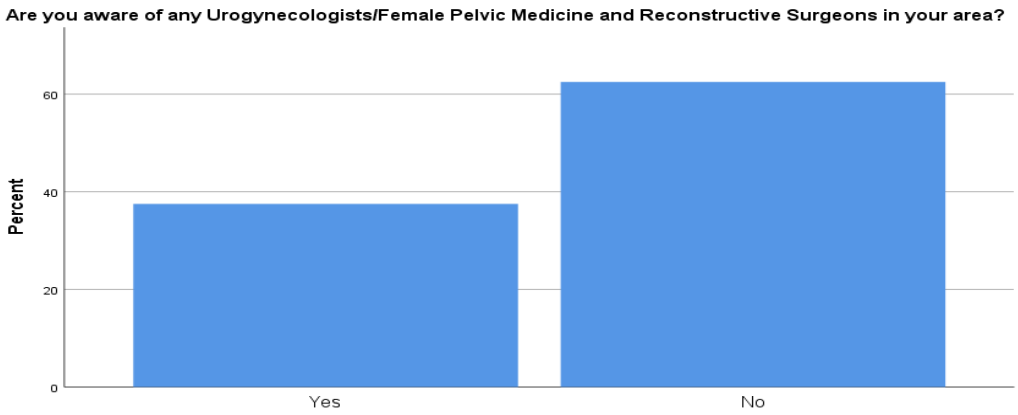

Figure 14. Percentage of nurses and midwives' knowledge about POP specialists in their area (n = 120)

6 Discussion

The purpose of this study was to assess the knowledge of nurses and midwives of pelvic organ prolapse in the Republic of Kazakhstan. To achieve this, a quantitative method was chosen. After receiving the permission from authors, the questionnaire, created by Mazloomdoost and colleagues (2017), was translated into Kazakh and Russian and adjusted for Kazakhstan nurses and midwives practicing essential care for the populace. This study uncovered clear information about nurses' and midwives' knowledge with a quantitative method. The study was conducted only with nurses and midwives of state hospitals; therefore, the results may not be representative of non-governmental hospitals.

The first finding is that the nurses and midwives estimate the prevalence of pelvic disorders among women in the general population to be less than 10%; with UI 37.5%, with OAB 41.7%, and with POP 40.8% of the respondents believed prevalence to be less than 10% in the general population. According to Dieter and colleagues' (2018) study, approximately one quarter of all women suffer from at least one or more pelvic floor disorders, and urinary incontinence represents the most common disorder with an estimated prevalence of 15–17%, whereas fecal incontinence affects, approximately, 9% of adult women. In this study, nurses and midwives underestimated the prevalence of pelvic floor disorders. According to results, it is

possible that nurses and midwives do not have enough knowledge of the conditions and their prevalence to detect these conditions in patients.

The second finding is that more than half (58.3%) of nurses and midwives do not ask about disturbing symptoms in women. Previously, Müller (2010) has found out that women are largely unaware of the physical symptoms and incidence of POPs, are unaware of the risk factors associated with POPs, and found it difficult to discuss about the symptoms with care providers. It is difficult to find a specialist due to the lack of knowledge on how to treat or surgically treat POPs (Müller 2015). Women first look to their doctors to become their primary pelvic health educators (Müller 2015). The results of the present research detected that in Kazakhstan, these symptoms are not taken into account by the respondents. In addition, women are ashamed to speak openly about their problems with a specialist, and they may remain silent about it. (Good & Solomon 2019)

The third finding is that only half (50%) of the nurses and midwives had enough knowledge to determine the difference between stress and urge urinary incontinence. It is man only half of respondents had enough knowledge. These results are in agreement with Mazloomdoost and colleagues' (2017) findings on PHC doctors. Therefore, they suggested that the awareness could be improved and the suffering of patients reduced by organizing outreach and educational programs related to the prevalence of POP, aimed at medical personnel. They argued that medical staff could, for their own benefit, develop an algorithm that they can follow to sort women with pelvic floor symptoms accordingly. (Mazloomdoost et al. 2017.) It will be necessary to consider the possibilities for additional training and/or conducting courses to improve the qualifications of nurses and midwives on the prolapse of female organs.

The fourth finding is that the bulk (79.2%) of nurses and midwives do not know of the POP-Q classification. This classification is not yet used in Kazakhstan. Unfortunately, it is difficult to compare this result to previous studies due to lack of studies on the topic.

The fifth finding is that more than half (62.5%) of nurses and midwives do not know pelvic disorder specialists in their area. Nurses and midwives in Kazakhstan are not

able to recommend a pelvic disorder specialist and are not allowed to do so. All recommendations should come from the attending physician. It will be necessary to consider the possibility of informing nurses and midwives on specialists in the treatment of POP diseases in their area in order to improve the quality of local medical care, including rural outpatient clinics. This study supports evidence from previous observations (e.g. Mazloomdoost et al., 2017) which points to ranges possibly valuable for progressing care for patients with POPs. An astounding number of therapeutic staff in the study of Mazloomdoost and colleagues (2017) was new with urogynecology and did not know these processes; they sent all patients with urinary indications to urology. Although typically improper, it is conceivable that these specialists are not mindful of the choices. In areas where it may be troublesome to urge a urological discussion, knowing that urogynecologists treat these conditions can promote patients' access to therapeutic care. (Mazloomdoost et al. 2017.)

Only less than half (41.7%) of the respondents said that they were comfortable with the diagnosis or recognition of symptoms of POPs. This means that more than half of the respondents will not be able to recognize them in women. Less than half (43.3%) of nurses and midwives can diagnose or recognize POP disorders. Nurses and midwives will have difficulty in determining the diagnosis, since most respondents are not familiar with the diagnosis/recognition of POPs and will not be able to recognize these disorders. However, the final diagnosis must be made by a specialist or doctor in the area.

This study was attended by nurses and midwives of a clinic in the Almaty region of the Karasai district, the city of Kaskelen, and 22 rural outpatient clinics in the Almaty region of the Karasai region. The first discovery was found in the demographic part of the questionnaire on the experience of nurses and midwives. Most nurses and midwives had an experience of up to 15 years and mainly worked in government organizations providing medical assistance to the population. Consideration should be given to complementing teaching standards in the evaluation process for the training of health professionals in the field of pelvic organ prolapse in women.

According to the results, it can be concluded that knowledge in the field of prolapse of the pelvic organs of women indicates an insufficient level of knowledge. Since the

level of knowledge among nurses and midwives is low, it is important and necessary to supplement the knowledge of nurses and midwives on this issue.

7 Conclusions and Recommendations

The purpose of this study was to evaluate the knowledge of nurses' and midwives' of pelvic organ prolapse. This study showed that a lack of knowledge about pelvic prolapse by nurses and midwives indicates the need for professional development courses by the employer.

It is necessary to consider the possibility of organizing and conducting courses for respondents at the state level with the involvement of specialists in this matter. It will be necessary to consider the possibilities for additional training, and/or conducting courses to improve the qualifications of nurses and midwives on the prolapse of female organs.

For this, it is necessary to intensify the exchange of experience of nurses' and midwives' in the medical centers of the Republic of Kazakhstan. I also propose to make the Republican Center for Health Development an adapted clinical guide on nursing, taking into account the problems and questions on the prolapse of the pelvic organs of women with the involvement of various specialists on this issue.

The leadership of healthcare organizations should ensure that nurses and midwives have access to evidence-based literature on gynecological practice, encourage nurses and midwives to use modern principles to critically evaluate and formulate problems, and be guided by specific recommendations that can be applied in practice in the process of career growth.

This allows us to bring medical care closer to the level of international standards using well-reasoned recommendations of nurses' and midwives' in Kazakhstan, that is, to provide high-quality, effective, and cost-effective medical care.

The concept of the modern model of nursing and midwifery is aimed at bringing the national healthcare system of the Republic of Kazakhstan in line with the European ones, demonstrating in this regard the fruitful implementation of their science-based

approach in the framework of nursing/midwifery, which is urgently needed to improve healthcare in Kazakhstan.

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APPENDIX

Appendix 1. Information Letter

Nurses ' knowledge of female pelvic floor disorders.

Dear nurse!

The purpose of this study is to study the knowledge and attitudes of nurses about female pelvic floor disorders.

Tasks:

1) Examine demographic information about nurses and midwives (questions 1-3)
2) Assess the knowledge of nurses and midwives about pelvic floor disorders (questions 4-12)
3) Compare knowledge of nursing and midwives about pelvic floor disorders
4) Develop recommendations to improve appropriate medical care for patients with pelvic floor disorders.

It is important to determine the level of knowledge of nurses in order to improve nursing care and make recommendations for improving the educational program. I would like to ask for your consent to study your knowledge and attitude to female pelvic floor disorders.

The questionnaire will be conducted anonymously. Participation is completely voluntary, and refusal will not affect your work.

As a researcher, I am committed to following existing guidelines for maintaining research and data protection legislation.

The results of the research will be described in the master's thesis and in an article that will be published in international scientific journals. The research material will be destroyed after the research is completed. If you start to answer questions, then you give your consent.

Sincerely Kalampyr Khalmanova Kairbekovna, candidate master’s of science, of Kazmuce, Almaty, Kazakhstan.

Tel.

Johanna Heikkilya, PhD, senior Advisor at JAMK University of Applied Sciences, Finland

Tel.

Dinara Ospanova, as.Professor, DmedSc, candidate of Kazmuce, Almaty, Kazakhstan.

Tel.

Appendix 2. QUESTIONNAIRE “PELVIC FLOOR DISORDERS”

1. What is your gender?

- male
- female

2. What is your age?

- 18-30
- 31-40
- 41-50
- 51-60
- Over 60

3. What is your specialty?

- General practice nurse
- Midwife
- Other

4. How many years have you been in practice (since graduating from training)? *

- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- >25 years

5. What is the nature of the organization in which you work?

- University or college / academic

- Private organization
- Government organization

6. The number of female patients you are advising daily:

- Less than 10
- 11-20
- 21-30
- 31-40
- Over 40

7. Are you familiar with the subspecialty below?					
	Very familiar	Somewhat familiar	Neither familiar or unfamiliar	Slightly unfamiliar	Very unfamiliar
Urogynecology					
Female Pelvic Medicine					
Reconstructive Surgery					

8. What percentage of women in the general population do you believe have the following conditions?						
	<10%	11-30%	31-45%	46-60%	61-75%	>76%
Urinary incontinence						
Overactive bladder						
Pelvic organ prolapse						

9. Please indicate your comfort level with the DIAGNOSIS/RECOGNITION of the following conditions?					
	Very comfortable	Somewhat comfortable	Neither comfortable nor uncomfortable	Somewhat uncomfortable	Very uncomfortable
Urinary incontinence					
Overactive bladder					
Pelvic organ prolapse					

10. How often do your female patients report BOTHERSOME symptoms about the following conditions?						
	<10%	11-30%	31-45%	46-60%	61-75%	>76%
Urinary incontinence						
Overactive bladder						
Pelvic organ prolapse						

11. How often do you ASK your female patients about the following symptoms?				
	All of the time	Very often	Some of the time	Very little or hardly ever

Urinary incontinence				
Overactive bladder				
Pelvic organ prolapse				

12. If a female patient complained of the following symptoms, what would be your ACTION?					
	Treat the patient myself	Start a treatment, then refer to a specialist	Refer to a specialist immediately	I am unfamiliar with meaning of this condition	I never see patients with this complaint
Urinary incontinence					
Overactive bladder					
Pelvic organ prolapse					

13. If you wanted to refer a woman with the following conditions, which specialty would be your FIRST CHOICE for referral?					
	Gynecology	Urology	Urogynecology/Female Pelvic Floor Medicine and Reconstructive Surgery	I would not know to	Other

				whom to refer	
Urinary incontinence					
Overactive bladder					
Pelvic organ prolapse					

14. Are you familiar with the POP-Q classification (Pelvic Organ Prolapse Quantification)?

- Familiar
- Familiar enough
- Somewhat familiar
- Not familiar

15. I ask all female patients about incontinence during routine preventative exams

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree

16. I am able to distinguish the difference between STRESS and URGE urinary incontinence?

- Strongly agree
- Agree
- No opinion

- Disagree
- Strongly disagree

17. I feel comfortable diagnosing STRESS versus URGE urinary incontinence?

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree

18. How many other partners are in your practice?

- Solo practitioner
- 1-3
- 4-6
- 7-10
- >10
- Other

19. Are you aware of any Urogynecologists/Female Pelvic Medicine and Reconstructive Surgeons in your area?

- Yes
- No

Appendix 3. Part of questionnaire

Table 4. Nurses and midwives knowledge about subspecialty POP (n=120)

Q7	**Are you familiar with the subspecialty below?**			
Urogynecology				
	Frequency	**Percent**	**Mean**	**SD**
Very familiar	38	31,7		
Somewhat familiar	41	34,2		
Neither familiar or unfamiliar	11	9,2	2,4333	1,42448
Slightly unfamilar	11	9,2		
Very unfamilar	19	15,8		
Female Pelvic Medicine				
Very familiar	41	34,2		
Somewhat familiar	49	40,8		
Neither familiar or unfamiliar	9	7,5	2,1917	1,27876
Slightly unfamilar	8	6,7		
Very unfamilar	13	10,8		
Reconstructive Surgery				
Very familiar	24	20,0		
Somewhat familiar	45	37,5		
Neither familiar or unfamiliar	13	10,8	2,7667	1,45944
Slightly unfamilar	11	9,2		
Very unfamilar	27	22,5		
Total	**120**	**100,0**		

Table 5. Nurses and midwives knowledge about general population POP (n=120)

Q8	What percentage of women in the general population do you believe have the following conditions?			
Urinary incontinence				
	Frequency	**Percent**	**Mean**	**SD**
<10%	45	37,5	2,2583	1,24682
11-30%	27	22,5		
31-45%	27	22,5		
46-60%	15	12,5		
61-75%	5	4,2		
>76%	1	,8		
Overactive bladder				
<10%	50	41,7	2,0583	1,22506
11-30%	35	29,2		
31-45%	23	19,2		
46-60%	6	5,0		
61-75%	2	1,7		
>76%	4	3,3		
Pelvic organ prolapse				
<10%	49	40,8	2,2250	1,31227
11-30%	25	20,8		
31-45%	27	22,5		
46-60%	10	8,3		
61-75%	7	5,8		
>76%	2	1,7		
Total	**120**	**100,0**		

Table 6. Nurses and midwives comfort level with diagnosis/recognition POP (n=120)

Q9	Please indicate your comfort level with the DIAGNOSIS/RECOGNITION of the following conditions?			
Urinary incontinence				
	Frequency	Percent	Mean	SD
Very comfortable	18	15		
Somewhat comfortable	31	25,8		
Neither comfortable nor uncomfortable	17	14,2	3,1833	1,47234
Somewhat uncomfortable	19	15,8		
Very uncomfortable	35	29,2		
Overactive bladder				
Very comfortable	17	14,2		
Somewhat comfortable	39	32,5		
Neither comfortable nor uncomfortable	18	15,0	2,9417	1,33659
Somewhat uncomfortable	26	21,7		
Very uncomfortable	20	16,7		
Pelvic organ prolapse				
Very comfortable	17	14,2		
Somewhat comfortable	35	29,2		
Neither comfortable nor uncomfortable	18	15,0	3,0333	1,36544
Somewhat uncomfortable	27	22,5		
Very uncomfortable	23	19,2		
Total	**120**	**100,0**		

Table 6. Nurses and midwives knowledge about bothersome symptoms (n=120)

Q10	How often do your female patients report BOTHERSOME symptoms about the following conditions?			
Urinary incontinence				
	Frequency	**Percent**	**Mean**	**SD**
<10%	64	53,3	1,8333	1,16916
11-30%	31	25,8		
31-45%	13	10,8		
46-60%	8	6,7		
61-75%	1	,8		
>76%	3	2,5		
Overactive bladder				
<10%	66	55,0	1,8000	1,15664
11-30%	30	25,0		
31-45%	13	10,8		
46-60%	7	5,8		
61-75%	1	,8		
>76%	3	2,5		
Pelvic organ prolapse				
<10%	70	58,3	1,7250	1,09208
11-30%	27	22,5		
31-45%	15	12,5		
46-60%	4	3,3		
61-75%	2	1,7		
>76%	2	1,7		
Total	**120**	**100,0**		

Table 7. Nurses and midwives knowledge about ask symptoms POP (n=120)

Q11	How often do you ASK your female patients about the following symptoms?			
Urinary incontinence				
	Frequency	**Percent**	**Mean**	**SD**
All of the time	32	26,7	2,3083	0,96837
Very often	30	25,0		
Some of the time	47	39,2		
Very little or hardly ever	11	9,2		
Overactive bladder				
All of the time	25	20,8	2,5000	0,96144
Very often	25	20,8		
Some of the time	55	45,8		
Very little or hardly ever	15	12,5		
Pelvic organ prolapse				
All of the time	27	22,5	2,4667	0,98675
Very often	26	21,7		
Some of the time	51	42,5		
Very little or hardly ever	16	13,3		
Total	**120**	**100,0**		

Table 8. Nurses and midwives knowledge about actions POP (n=120)

Q12	If a female patient complained of the following symptoms, what would be your ACTION?			
Urinary incontinence				
	Frequency	**Percent**	**Mean**	**SD**
Treat the patient myself	10	8,3		
Start a treatment, then refer to a specialist	19	15,8		
Refer to a specialist immediately	85	70,8	2,7750	0,80401
I am unfamiliar with meaning of this condition	0	0		
I never see patients with this complaint	6	5,0		
Overactive bladder				
Treat the patient myself	12	10,0		
Start a treatment, then refer to a specialist	13	10,8		
Refer to a specialist immediately	81	67,5	2,8833	0,91838
I am unfamiliar with meaning of this condition	5	4,2		
I never see patients with this complaint	9	7,5		
Pelvic organ prolapse				
Treat the patient myself	10	8,3		
Start a treatment, then refer to a specialist	14	11,7		
Refer to a specialist immediately	86	71,7	2,8583	0,83310
I am unfamiliar with meaning of this condition	3	2,5		
I never see patients with this complaint	7	5,8		
Total	**120**	**100,0**		

Table 9. Nurses and midwives knowledge about first choise specialists n=120)

Q13	If you wanted to refer a woman with the following conditions, which specialty would be your FIRST CHOICE for referral?			
Urinary incontinence				
	Frequency	**Percent**	**Mean**	**SD**
Gynecology	18	15,0	1,9917	0,54226
Urology	85	70,8		
Urogynecology/Female Pelvic Floor Medicine and Reconstructive Surgery	17	14,2		
I would not know to whom to refer	0	0		
Overactive bladder				
Gynecology	18	15,0	2,0083	0,57242
Urology	84	70,0		
Urogynecology/Female Pelvic Floor Medicine and Reconstructive Surgery	17	14,2		
I would not know to whom to refer	1	0,8		
Pelvic organ prolapse				
Gynecology	65	54,2	1,6750	0,82158
Urology	30	25,0		
Urogynecology/Female Pelvic Floor Medicine and Reconstructive Surgery	24	20,0		
I would not know to whom to refer	1	0,8		
Total	**120**	**100,0**		

Table 10. Nurses and midwives knowledge about POP classification and other characteristics (n=120)

		Frequency	Percent
Q14	**Are you familiar with the POP-Q classification (Pelvic Organ Prolapse Quantification)?**		
	Familiar	9	7,5
	Familiar enough	16	13,3
	Somewhat familiar	35	29,2
	Not familiar	60	50,0
Q15	**I ask all female patients about incontinence during routine preventative exams**		
	Strongly agree	33	27,5
	Agree	60	50,0
	No opinion	22	18,3
	Disagree	3	2,5
	Strongly disagree	2	1,7
Q16	**I am able to distinguish the difference between STRESS and URGE urinary incontinence?**		
	Strongly agree	20	16,7
	Agree	40	33,3
	No opinion	46	38,3
	Disagree	12	10,0
	Strongly disagree	2	1,7
Q17	**I feel comfortable diagnosing STRESS versus URGE urinary incontinence?**		
	Strongly agree	10	8,3
	Agree	42	35,0
	No opinion	38	31,7
	Disagree	22	18,3
	Strongly disagree	8	6,7
Q18	**How many other partners are in your practice?**		
	Solo practitioner	4	3,3
	1-3	31	25,8
	4-6	12	10,0
	7-10	13	10,8
	>10	25	20,8
	Other	35	29,2
Q19	**Are you aware of any Urogynecologists/Female Pelvic Medicine and Reconstructive Surgeons in your area?**		
	Yes	45	37,5
	No	75	62,5
	Total	**120**	**100,0**