

**The prevalence and the knowledge level of urinary incontinence among
women with history of at least one childbirth living in Yerevan, Armenia**

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Table of Contents

List of abbreviations	iii
Acknowledgments	iv
Abstract	v
1. INTRODUCTION	1
1.1 Childbirth and urinary incontinence	1
1.2 Help-seeking behavior and UI	2
1.3 The knowledge level of UI	3
1.4 Situation in Armenia and rationale of the study	4
1.5 Research questions	4
2. METHODS	4
2.1 Study design	4
2.2 Study settings and population	5
2.2.1 Exclusion criteria	5
2.3 Sample size	5
2.4 Sampling strategy and data collection	6
2.5 Study variables and instrument	7
2.6 Data management and analysis	8
2.7 Ethical considerations	9
3. RESULTS	9
3.1 Demographic characteristics	10
3.1.1 The urinary distress and UI prevalence	10

3.1.2 UI knowledge proficiency	11
3.1.3 Univariate logistic regression between UI knowledge proficiency and the independent variables	12
3.1.4 Multivariable logistic regression between UI knowledge proficiency and the independent variables	12
3.1.5 Help-seeking behavior	13
4. DISCUSSION	13
4.1 The Strengths and imitations	15
4.2 Conclusion and recommendations	16
References	17
Tables	22
Table 1. Demographic characteristics	22
Table 2. The urinary distress and UI prevalence	24
Table 3. The urinary distress bother level	25
Table 4a. UI knowledge proficiency	26
Table 4b. UI knowledge proficiency	27
Table 5. Univariate logistic regression between UI knowledge proficiency and the independent variables	28
Table 6. Multivariable logistic regression between UI knowledge proficiency and the independent variables	30
Table 7. Help-seeking behavior	31
Appendices	32
Appendix 1. The research instrument	32
Appendix 2. Consent form	44
Appendix 3. STATA output for logistic regression	48

List of Abbreviations

AUA	American University of Armenia
EEC	Experimental English classes
IP	Internet provider
MUI	Mixed urinary incontinence
OR	Odds ratios
PFME	Pelvic floor muscle exercise
PIKQ	Prolapse and incontinence knowledge quiz
SD	Standard deviation
SUI	Stress urinary incontinence
UDI	Urinary distress inventory
UI	Urinary incontinence
UUI	Urgency urinary incontinence
VIF	Variance inflation factor

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Abstract

Background

Unintentional urination or urinary incontinence (UI) is considered a neglected public health problem. In women, pregnancy and childbirth are considered leading factors associated with the development of UI. Most studies have reported a UI prevalence rate ranging between 25% and 45.0%. However, women often fail to report their symptoms because of the perception of normality of problem, fear of surgical treatment, and embarrassment. UI knowledge proficiency is one of the critical determinants influencing the recognition and treatment of UI when it is in its early stages to prevent it from worsening. Given insufficient UI-related data in Armenia, this study aimed to estimate the prevalence of UI, knowledge proficiency of and help-seeking behavior for UI among women residing in Yerevan and with history of at least one childbirth.

Methods

The cross-sectional online survey was conducted among mothers of children enrolled in American University of Armenia experimental English classes (EEC) afterschool English program during April 2020. The instrument was based on the UI domain of prolapse and incontinence knowledge quiz (PIKQ), the urinary distress inventory, short-form (UDI-6). The survey also included sections on mothers' demographic characteristics, health conditions, pregnancy and childbirth, and on mothers' UI related help-seeking behavior. Descriptive, univariate and multivariable logistic regression analyses were conducted using Stata 13.0.

Results

A total of 166 participants completed surveys. The mean age of study participants was 39.0 years (SD = 4.6). The prevalence of UI was 48.5% and "high" UI knowledge proficiency was 20.0% among mothers of children enrolled in the AUA EEC afterschool English program. Findings from the univariate analysis revealed that work in a medical field, age of the mother at first childbirth, and the occurrence of urgency urinary incontinence (UUI) were significantly associated with the "high" UI knowledge proficiency. In the multivariable analysis, the odds of the "high" UI knowledge proficiency among mothers who ever worked in a medical field was 6.3 times the odds of the "high" UI knowledge proficiency among mothers who had never worked in a medical field after adjusting the occurrence of UUI ($p < 0.001$). The odds of the "high" UI knowledge proficiency among mothers who did not report UUI was 65% lower than those of mothers who reported UUI, when work in a medical field was present in the model (OR: 0.35; $p = 0.037$). About 59.6% of mothers did not seek help for any of urinary distress symptoms after last childbirth and 64.3% of them indicated that they did not approach physicians as "*symptoms were not bothering them too much*".

Conclusion

The study underlines that women with history of at least one childbirth have low knowledge proficiency in UI. Despite the fact that UI was a prevalent condition among study participants, women were unaware that childbirth was a known risk factor for UI. The findings underline the need for education on UI among women of childbearing age.

1. Introduction

1.1 Childbirth and Urinary Incontinence

Unintentional urination or urinary incontinence (UI) is considered a neglected public health problem.¹ Women tend to think that UI is a natural consequence of childbirth and aging,² when in fact, it is “a stigmatized, underreported, underdiagnosed, and undertreated condition”.³ Pelvic floor muscle, neural and connective tissue dysfunction are considered as potential causes of UI.⁴ Still, the pathological pathway for UI is unknown.⁵ Pregnancy and childbirth are considered leading factors associated with the development of UI.⁶⁻⁸ Childbearing leads to physiological changes in women's pelvic floor. It usually takes up to six months postpartum until the muscles and connective tissues of the pelvic floor revert to prepregnant condition.⁹ Therefore, a lag time of 6 months following childbirth should be allowed for symptoms to be attributed to UI.⁹ Manifestations of UI include urine leakage, frequent or/and painful urination, as well as continuous discomfort in the pelvic area.¹⁰

Stress urinary incontinence (SUI), urgency urinary incontinence (UUI) and mixed urinary incontinence (MUI) are known main types of UI.¹¹⁻¹³ “The complaint of any involuntary loss of urine on effort or physical exertion (e.g. sporting activities) or on sneezing or coughing” is called SUI.¹⁴ UUI is “the complaint of involuntary loss of urine associated with urgency”¹⁵ The combination of these two conditions is known as MUI.¹⁶ SUI is a frequently occurring condition among women below 55 years and UUI among older women.¹⁷

Most studies have reported a UI prevalence rate ranging between 25.0% and 45.0%.¹⁸ An adequate estimation of the UI prevalence is difficult to achieve due to different study methodologies, self-reported data, as well as varying UI definitions and population groups to investigate the problem.¹⁷ “The South Australian Health Omnibus survey”¹⁹ estimated that the

prevalence of UI among mothers with history of at least one childbirth was 37.4%.¹⁹ A cohort study conducted in Scotland, England and New Zealand showed that 24.0% of women experience persistent UI after 6 years postpartum period.²⁰ The same study indicated that women who had undergone a cesarean delivery had only 14.0% prevalence of persistent UI.²⁰ “The Norwegian Mother and Child Cohort Study”²¹ estimated that 31.0% women experience UI at 6 months postpartum.²¹ A cross-sectional study conducted in Western Amazon among 285 women following 6 months from delivery highlighted that the prevalence of UI, UUI and SUI among study participants were 34.4%, 21.1% and 20.7%, respectively.²² Another study conducted in France reported that the prevalence of SUI in the 4 years following delivery was 29.0 %.²³ In the US a retrospective cohort study conducted among 449 women following five to ten years from delivery reported that 16.0% of the participant had SUI.²⁴

Advanced maternal age, young age of the mother at first childbirth, multiparity, lower educational level, incontinence during pregnancy and vaginal delivery have been shown to be associated with postpartum UI.^{7,21,24-28} Lifestyle alteration (e.g., decreased amount of drinks consumption, fiber-rich diet, weight management), conservative treatment (bladder exercise, medication, vaginal pessary, pelvic floor muscle exercise (PFME)), and surgical treatment are the primary treatment modalities for UI.²⁹ PFME is also known as effective preventive methodology against UI development during prenatal and postpartum periods.³⁰

1.2 Help-Seeking Behavior and UI

UI negatively affects women’s quality of life and leads to decreased gratification of body image.¹⁰ Women experiencing UI may not seek medical attention, even though it affects their health status.²⁶ The prevalence of UI among US females over 40 years old was 41.0%; however, only 25.0 % of them had sought help.²⁶ In the UK, several studies have indicated that only

34.3% of women who experienced UI had sought help.¹⁷ One qualitative study conducted in England illustrated that 16.0 % of women had sought help for UI at 8 weeks, and 25.0% had sought help for UI at one year after childbirth.³¹ Reasons, why they failed to seek medical attention for their symptoms, included perception of normality of problem, fear of surgical treatment, and embarrassment.³¹⁻³³ “High” UI knowledge proficiency, longer duration of the disease, and UUI have been reported as the determinants shaping help-seeking behavior relative to UI.³⁴ Women with an elevated bother level of UI or advanced age were more likely to seek help for UI.³ Also, the studies revealed that frequent contacts with physicians were opportunities for the women to speak about their problems.³⁴

1.3 The Knowledge Level of UI

Knowledge proficiency is a critical determinant influencing UI recognition and treatment in the early stages of the condition.³⁵ Hence, improved UI knowledge proficiency is an easily modifiable determinant to prevent the exacerbation of the condition.³⁵ Only a few studies have been conducted to assess UI knowledge proficiency among mothers. A study conducted in the US indicated that the mean knowledge score of UI among pregnant and postpartum women was 6.3 out of 12 possible points (SD= 3.7).³⁶ Another study conducted in Singapore showed that the mean percent score of UI knowledge was 46.2% out of 100 (SD = 0.3) among pregnant women.³⁷ A study conducted among US women registered at primary healthcare facilities reported that the mean percent score of UI knowledge was 53.0% out of 100 (SD = 34).² Advanced age of the mother, higher level of education, a job in a medical field and multiparity were positively associated with the higher knowledge level of UI.³⁶⁻³⁷

1.4 Situation in Armenia and Rationale of the Study

Pregnancy and childbirth are significant risk factors for UI.⁶⁻⁸ According to the 2015-16 Armenia demographic and health survey, the total fertility rate was 1.7 children per woman.³⁸ Nationwide statistics related to UI was not available in Armenia. In 2019, the first study exploring pelvic floor disorders in Armenia had reported that SUI and UUI prevalence among women attending primary healthcare facilities were 59.7 % and 48.3 %, respectively.³⁹

Given insufficient UI-related data in Armenia, we aimed to estimate the prevalence of UI, knowledge proficiency of and help-seeking behavior for UI among women residing in Yerevan and with history of at least one childbirth. Findings from this study will inform the development of targeted interventions for the prevention and management of UI. It aimed at improving the quality of life of women with UI in Armenia

1.5 Research Questions

The research questions of this study were:

- What is the prevalence of UI among women with history of at least one childbirth?
- What is UI knowledge proficiency and key determinants affecting it among women with history of at least one childbirth?
- What is help-seeking behavior for UI among women with history of at least one childbirth?

2. Methods

2.1 Study Design

This was a cross-sectional study to explore UI knowledge proficiency, prevalence and UI-related help-seeking behavior among women residing in Yerevan and with history of at least one

childbirth. A cross-sectional study design required a short period and a lower budget relative to other study designs.

2.2 Study Settings and Population

The target population included women with history of at least one childbirth. The study population includes mothers of children enrolled in the American University of Armenia (AUA) EEC afterschool English program. This program offers English language learning possibilities for children from 6 to 16 years, and it offers services in cities such as Yerevan, Vagharshapat, Stepanavan, and Abovyan. The majority of children enrolled in the AUA EEC afterschool English program in Yerevan. Only mothers of children enrolled in the AUA EEC afterschool English program in Yerevan were included in this study. Further information about the program is available at eec.aua.am webpage.

2.2.1 Exclusion Criteria

Exclusion criteria included age younger than 18 years, nulliparity, poor knowledge of Armenian, and history of childbirth in the 7 months preceding the time of the survey. The 7 months postpartum period was explained by the following: a) UI symptoms are considered alarming after 6 months following childbirth,⁹ and b) the survey questions were exploring symptoms within the last month preceding the survey.

2.3 Sample Size

There was no available data related to women's UI knowledge proficiency in Armenia. Chen et al. reported "high" UI knowledge proficiency among 28.0% of US women registered at primary healthcare facilities.² This estimated proportion was used along with 7.0% margin of error,

80.0% power and 5.0% significance level to calculate the required sample size according to the one-sample proportion formula:

$$n = z^2 * p * (1 - p) / e^2$$

Where,

n is the required sample size

z = 1.96 for a confidence level (α) of 95%

p = proportion = 0.28

e = margin of error = 0.07

$$n = \frac{(1.96)^2 \times 0.28(1-0.28)}{(0.07)^2}$$

$$n = \frac{0.7745}{0.0049} = 158.054$$

$n \approx 159$

The required sample size was equal to 159.

2.4 Sampling Strategy and Data Collection

The data collection was done through an online survey given the epidemiological situation in Armenia due to the novel coronavirus outbreak. First, permission from the EEC afterschool English program director was obtained to conduct a study among mothers of children enrolled in the program. The internet-based survey was created via the SurveyGizmo survey platform. The EEC afterschool English program director shared the link to the survey through the existing e-mail list. A reminder was sent after one week asking the mothers to complete the survey. The

survey was conducted in April 2020, and the average duration to complete the questionnaire was six minutes.

2.5 Study Variables and Instrument

The main dependent variable (outcome) was UI knowledge proficiency among mothers of children enrolled in the AUA EEC afterschool English program. The outcome variable was binary. The knowledge proficiency was defined as ‘low’ when scoring less than 80% (knowledge score ≤ 9.0), and a ‘high’ for knowledge score ≥ 10.0 or more than 80%.³⁶

The UI knowledge score was evaluated using the UI domain of prolapse and incontinence knowledge quiz (PIKQ).³⁵ A valid and reliable instrument contained twelve questions. Each question provided three options for the answer, including “*agree*”, “*disagree*”, and “*don’t know*”. The total range of the scale was from 0 to 12. One point was given for a correct answer, and 0 point was given for wrong or “*don’t know*” answer. The mean score was calculated based on individual scores.³⁵

The independent variables included the presence of UI and the urinary distress symptoms, the mother’s age, educational attainment, employment status, work in a medical field, the youngest child’s age, delivery type, parity or the number of times that respondents have given birth, age at first childbirth, number of vaginal deliveries, prior last childbirth UI or urine leakage, prior last childbirth UI or urine leakage surgery, during last pregnancy UI or urine leakage and mothers’ UI related help-seeking behavior.

The prevalence of UI and the urinary distress symptoms were estimated using the urinary distress inventory, short-form (UDI-6).²¹ The six main questions evaluated the existence of urinary problems in the past month with the “*yes*” or “*no*” answer options. Six additional questions

were used to assess the impact of the problem on daily life. It provided four options for the answer, including “*not at all*”, “*a little bit*”, “*moderately*”, and “*greatly*”. Each answer option was granted 0, 1, 2, and 3 points, respectively.⁴⁰ The question on “*urine leakage related to urgency*” evaluated the existence of UUI. The question on “*urine leakage related to physical activity*” assessed the presence of SUI among mothers.²² The existence of UUI and/or of SUI and/or positive response to the question on small amounts of urine leakage was considered as having UI.²² The presence of both SUI and UUI was considered as having MUI.⁴¹ The instrument (Appendix 1) also included a sections on mothers’ demographic characteristics, health conditions, pregnancy and childbirth, as well as on mothers’ UI related help-seeking behavior.⁴²⁻⁴⁵ The research instrument was translated from English into Armenian and pretested.

2.6 Data Management and Analysis

The electronic dataset was exported from the SurveyGizmo survey platform. The SPSS Statistics 21.0 was used for exploratory data analysis. The dataset was observed for missing, implausible or extreme values. Imputation was performed for variable “*parity*”. Zero answers were substituted with the appropriate numbers based on data from variables such as “*vaginal deliveries*”, “*mother’s age*”, “*age at the first childbirth*” and “*last child’s age*”. The answer categories of some variables were collapsed to reach adequate frequencies in each category. If respondents had given birth three or more times, the answers categories were combined under “3+” category.³⁶ The answers categories such as “*middle school*”, “*high school*”, “*professional-technical*” and “*institute/university*” for educational attainment were categorized as “*non-postgraduate*”. Employment status was classified as “*unemployed*” if respondents selected one of these categories “*out of work and looking for work*”, “*homemaker*” or “*parental leave*”. Also, 3 or more vaginal deliveries were combined under the category “3+”.

Stata 13.0 was used to analyze the dataset. Descriptive statistics such as means, standard deviations (SD), medians, and ranges were used to describe the continuous variables, and frequencies and percentages were used to report categorical variables. Univariate unadjusted logistic regression was performed between UI knowledge proficiency and each independent variable. The independent variables with statistically significant associations ($p < 0.05$) with the dependent variable were included in the multivariable analysis. Variance inflation factor (VIF) method was applied to detect the extent of multicollinearity in the multivariable logistic regression, and highly correlated variables were not included with each other in the final multivariable analysis. The statistical significance was established as $p < 0.05$.

2.7 Ethical Considerations

The study protocol was reviewed and approved by the chair of the institutional review board #1 of the AUA (protocol #: AUA-2020-006). No identifiable information about mothers and their child/children was collected during the survey to ensure participants' anonymity. The informed consent (Appendix 2) was obtained from the participants before each survey.

3. Results

Overall, 219 mothers opened the survey link, but 12 (5.5%) marked that they “*don't agree*” to participate in the survey, and 24 (11.0%) mothers provided participation agreement, but did not answer any survey question. In addition, 12 (5.5%) mothers did not complete UI knowledge proficiency and the urinary distress instruments and were excluded from final data analysis.

Internet Provider (IP) addresses were used to eliminate duplications among participants. Either the completed questionnaire or the latest submission was included in the data analysis. Hence, 4 (1.8%) duplication surveys and 1 (0.5%) ineligible mother (having a child younger than 7 months) were discarded. The exiting e-mail list of the AUA EEC afterschool English program

was about 1000. Besides, including mostly e-mail addresses of mothers, the list included e-mail addresses of fathers, grandparents, and upper-level students who register themselves.

Unfortunately, it was impossible to separate mothers' emails from the rest. Hence, an accurate response rate was undeterminable. All in all, 166 completed surveys were incorporated into the final analysis. The statistical analysis was conducted with or without imputation, and no significant differences were detected.

3.1 Demographic Characteristics

Table 1 illustrates the demographic characteristics of the study participants. The mean age of mothers was 39.0 years ($SD = 4.6$). The majority of respondents graduated from institute/university (50.3%) or received the postgraduate degrees (46.1%). Thus, 96.4% of them had higher education and were currently employed (78.5%). About a quarter of the mothers (25.0%) have worked in the medical field. The mean age of participants at the birth of their first child was 25.4 years ($SD = 3.7$). A large percentage of women (80.1%) were multipara and undergone a cesarean delivery during their last childbirth (68.3%). The mean age of their youngest child was 9.0 years ($SD = 4.2$).

3.1.1 The Urinary Distress and UI Prevalence

Table 2 and Table 3 illustrate the descriptive statistics of urinary distress and UI. Only a few mothers reported that they suffered from UI or urine leakage (4.2%) or undergone surgery due to UI or urine leakage (1.2%) prior to birth of the last child. Only 8.5% of participants experienced UI or urine leakage during the last pregnancy. About one-fifth (20.6%) of women usually experienced frequent urination, and 40.6% of them reported that it does not bother them. The prevalence of UUI among study participants was 21.2%, and 20.6% mentioned that it did not

bother them. The prevalence of SUI was 30.0%, and 10.2% of them experienced no level of bother. The prevalence of UI and MUI was 48.5% and 8.5%, respectively. Furthermore, 18.6% of women usually experienced small amounts of urine leakage, and 13.3% did not report any level of bother. Very few participants (1.2%) experienced difficulty emptying the bladder or urinating. About 12.9 % of mothers noted pain or discomfort in the lower abdominal, pelvic, or genital area, and 6.2% of them mentioned that it bothers them “not *at all*”.

3.1.2 The UI Knowledge Proficiency

Table 4a and 4b show the study participants’ UI knowledge proficiency. The mean knowledge score of mothers was 7.5 out of 12 (SD = 2.4). Nearly three-quarters of mothers (73.3%) knew that UI is more frequent among older women, and only 44.7% of study participants agreed that women are more likely than men to suffer from UI. The majority of mothers (91.3%) correctly agreed that “*many things can cause urine leakage*”, and 90.1% of mothers agreed that the majority of people with urine leakage might be healed with some therapy. In contrast, just 37.3% knew that some drugs might cause urinary leakage, and only 30.0% disagreed with the statement that “*once people start to leak urine, they are never able to control their urine again*”. Half of the participants (50.0%) believed that specific exercises might assist in managing urine leakage. Only 49.1% of them disagreed that surgery is the only solution for the condition. About 52.8 % of participants were unaware that multiple childbirths may lead to urine leakage. Overall, only 20.0 % of mothers demonstrated “high” UI knowledge proficiency (knowledge score ≥ 10.0).

3.1.3 Univariate Logistic Regression between UI Knowledge Proficiency and the Independent Variables.

Table 5 illustrates the unadjusted univariate logistic regression analyses for the relationship between UI knowledge proficiency and the independent variables. Work in a medical field, age of the mothers at first childbirth and the occurrence of UUI were significantly associated with the “high” UI knowledge proficiency. In contrast, the existence of UI was not significantly associated with UI knowledge proficiency. The odds of the “high” UI knowledge proficiency among mothers who ever worked in a medical field was 5.8 times higher compared to those who had never worked in a medical field ($p < 0.001$). The univariate analysis also revealed that the odds of the “high” UI knowledge proficiency among mothers who did not report UUI was 60% lower than the odds of the “high” UI knowledge proficiency among mothers who reported UUI (OR: 0.4; $p = 0.049$). Each additional year increase in the age of the first childbirth increased the odds of “high” UI knowledge proficiency by 10 % (OR: 1.1; $p = 0.02$).

3.1.4 Multivariable Logistic Regression between UI Knowledge Proficiency and the Independent Variables

Table 6 and Appendix 3 show the results of the adjusted multivariable logistic regression between UI knowledge proficiency and the independent variables. The odds of the “high” UI knowledge proficiency among mothers who ever worked in a medical field was 6.3 times the odds of the “high” UI knowledge proficiency among mothers who had never worked medical field after adjusting the occurrence of UUI ($p < 0.001$). The multivariable analysis also revealed that the odds of the “high” UI knowledge proficiency among mothers who did not report UUI was 65% lower than mothers who reported UUI when work in a medical field was present in the model (OR: 0.35; $p = 0.037$). VIF method illustrated that severity of the multicollinearity for “UUI” and “age at first childbirth” was exceeded the tolerable level 10.0, and the variable “age at first childbirth” was excluded from the logistic regression model. (Appendix 3).

3.1.5 Help-Seeking Behavior

Table 7 illustrates the mother's UI-related help-seeking behavior. About one fifth (21.7%) of study participants sought help for at least one of the symptoms such as frequent urination, urine leakage, difficulty emptying the bladder or urinating as well as pain or discomfort in lower abdominal, pelvic, or genital area after last childbirth. The majority of them (97.0%) noted that they had approached a physician for help. About 59.6% of mothers did not seek help for any of the aforementioned symptoms after the last childbirth. About 64.3% of them indicated that they did not approach a physician as "*symptoms were not bothering them too much*", 10.7% mentioned that they tried to find treatment for themselves, and only 7.1% noted distrust in physicians. All of the participants who did not experience the symptoms mentioned above (21.7%) indicated that they would have approached a physician if they had these symptoms.

4. Discussion

This research was the first study investigating UI prevalence and knowledge proficiency among Armenian women with history of at least one childbirth. The study results demonstrated that about half (48.5 %) of the participants experienced unintentional urination within the last month preceding the survey. It is disheartening given that the study participants were young (mean=39.0 years). The results of the previous studies on UI prevalence are varying. The systematic review conducted by Minassian et al. highlighted that the UI prevalence was between 4.8% and 58.4%.⁵⁴ The study conducted in Beijing revealed that UI prevalence among multiparas was 42.7%, and SUI was 25.6%.⁵⁵ This study indicated that UUI and SUI prevalence among mothers whose children were enrolled in AUA EEC afterschool English program in Yerevan were 21.2% and 30.0%, respectively. Although these findings contrast with UUI (48.3%) and SUI (59.7%) prevalence from the previous study conducted in Armenia, it is worth

mentioning that 70.0% of their study population was 40 years old or older and literature suggested that advanced age has been shown to be associated with the occurrence of UI.^{7,24-25,39} The Chinese population-based survey demonstrated that the prevalence of UI was 22.1%, SUI was 12.9% and UUI was 1.7%.⁵⁶ About 29.0% of French women experienced SUI 4 years postdelivery.⁵⁷ The South Australian Health Omnibus survey estimated that the prevalence of UI among mothers who gave birth at least once was 37.4%.¹⁹ Various studies have indicated that UUI, compared to SUI, has a worse influence on the quality of life.⁵¹⁻⁵³ However, our findings revealed that SUI was more bothersome than UUI, and a similar result was reported in the survey conducted by Badalian et al. in Armenia.³⁹ Our study revealed that the occurrence of UUI was significantly associated with the “high” UI knowledge proficiency. Hence, we can presume that women with UUI symptoms more likely to investigate the problem. Also, the occurrence of UI was not significantly associated with UI knowledge proficiency. It complied with a reported result by McKay et al. and fulfilled their statement that belief that UI is a natural consequence of childbirth and aging hinder women from exploring the problem.³⁶

The study also revealed that most women (80.0%) lacked UI knowledge proficiency. Similar findings were reported by other research studies exploring UI proficiency among women based on the UI domain of PIKQ. Mandimika et al. outlined that 71.2% of community-dwelling women at New Haven County, Connecticut, USA, lacked UI knowledge proficiency.⁴⁶ Shah et al. estimated that 62.1% white women attending gynecologist office for annual checkups in Boston demonstrated lack the UI knowledge proficiency.⁴⁷ McKay et al. highlighted that 74.2% of pregnant or postpartum women were lacking UI proficiency in New Haven and Fairfield Counties, Connecticut, USA, and Chen et al. reported UI knowledge non-proficiency among 72.0% of women from primary healthcare facilities.^{36, 2}

Several studies suggested that low level of education was associated with a lack of UI knowledge proficiency, and medical background could increase the UI knowledge level.^{2,36,48-49} Work experience in the medical field was significantly associated with “high” UI knowledge proficiency both in univariate and multivariable analyses. One quarter (25.0%) of study participants worked in the medical field. According to the 2015-16 Armenia demographic and health survey, 40.4% of females living in Yerevan had a higher education.³⁸ In contrast, our study results indicated that about 96.4% of mothers earned higher education levels. Given the higher proportion of participants with higher education and work experience in a medical field, the estimated prevalence of the “low” UI knowledge proficiency in this study population might underestimate the real prevalence of “low” UI knowledge proficiency in the population at large. Poor knowledge about UI among women may preclude them to seek help for UI.^{37,50} The study demonstrated that a low level of the bother of urinary distress symptoms affects women’s help-seeking behavior. This finding was in line with a statement by Morrill et al. that women with an elevated bother level were more likely to seek help for UI.³

4.1 The Strengths and imitations

This study has several strengths and limitations. Previously validated and tested instruments were used while designing the study questionnaire, which could be considered one of the strengths of this study. The cross-sectional study design and online survey optimized the time and resources for the study. Another strength of the study was that the required sample size was attained.

However, non-random sampling might have led to selection bias and magnified the observed prevalence of UI. Another limitation was that mothers’ help-seeking behavior was reported based on the mother’s experience after their last childbirth. Still the survey questions were

exploring the UI prevalence within the last month preceding the survey. Consequently, the comparison of mothers' UI related help-seeking behavior and UI could be undermined. The study's generalizability is limited, as the study conducted only among mothers whose children enrolled in the AUA EEC afterschool English program in Yerevan and participants from different programs in Yerevan and marzes were not recruited.

4.2 Conclusion and Recommendations

The study underlines that women with history of at least one childbirth have low knowledge proficiency in UI. Even though UI was prevalent among study participants, women were still unaware that childbirth is a known risk factor for UI.

This study recommends to conduct a similar study among randomly selected representative sample of women to estimate the burden of UI in Armenia more precisely. It suggests the need for education on UI among reproductive age women. Patient educational programs and public awareness campaigns should be implemented to improve the UI knowledge proficiency in Armenia. Moreover, counseling about UI risk factors and preventive strategies should be incorporated into the routine preconception and prenatal care visits.

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Table 1: Demographic characteristics of study participants (N=166)

<i>Variable</i>	<i>Values</i>
Mother's age (years)	
N	165
Mean	39.0
Median	39.0
SD	4.6
Min – Max	27.0-51.0
Mother's educational attainment, % (n)	
Middle school	1.2 (2)
High school	0
Professional technical	2.4 (4)
Institute/university	50.3 (83)
Postgraduate (Master's, PhD)	46.1 (76)
Mother's educational attainment, combined % (n)	
Non-postgraduate	53.9 (89)
Postgraduate	46.1 (76)
Mother's employment status % (n)	
Employed	78.5 (128)
Out of work and looking for work	4.3 (7)
Homemaker	16.0 (26)
Parental leave	1.2 (2)
Mother's employment status, combined % (n)	
Employed	78.5 (128)
Unemployed	21.5 (35)
Work in a medical field % (n)	
Yes	25.0 (41)
No	75.0 (123)
Last child's age (years)	
N	164
Mean	9.0
Median	9.0
SD	4.2
Min – Max	1.0-16.0
Last childbirth's delivery type % (n)	
Caesarian section	68.3 (112)
Vaginal birth	31.7 (52)

<i>Variable</i>		<i>Values</i>
Mother's age at first childbirth (years)	N	
	Mean	164
	Median	25.4
	SD	25.0
	Min – Max	3.7
		18.0-37.0
Parity % (n)	1	19.9 (32)
	2	58.4 (94)
	3	18.6 (30)
	4	2.5 (4)
	5	0.6 (1)
Parity, combined % (n)	1	19.9 (32)
	2	58.4 (94)
	3+	21.7 (35)
Number of vaginal deliveries % (n)	0	20.9 (34)
	1	20.3 (33)
	2	43.5 (71)
	3	14.1 (23)
	4	1.2 (2)
Number of vaginal deliveries, combined % (n)	0	20.9 (34)
	1	20.3 (33)
	2	43.5 (71)
	3+	15.3 (25)

Table 2: The urinary distress and UI prevalence

<i>Variable</i>	<i>No</i> <i>% (n)</i>	<i>Yes</i> <i>% (n)</i>	<i>Don't know</i> <i>% (n)</i>
Frequent urination	79.4 (131)	20.6 (34)	n/a*
Urgency urinary incontinence (UUI)	78.8 (130)	21.2 (35)	n/a*
Stress urinary incontinence (SUI)	70.0 (114)	30.0 (49)	n/a*
Small amounts of urine leakage	81.4 (131)	18.6 (30)	n/a*
Difficulty emptying the bladder or difficulty urinating	98.8 (161)	1.2 (2)	n/a*
Pain or discomfort in the lower abdominal, pelvic, or genital area	87.1 (142)	12.9 (21)	n/a*
Urinary incontinence (UI)	51.5 (85)	48.5 (80)	n/a*
Mixed urinary incontinence (MUI)	91.5(151)	8.5(14)	n/a*
Prior last childbirth UI or urine leakage	95.2 (158)	4.2 (7)	0.6 (1)
Prior last childbirth UI or urine leakage surgery	98.8 (162)	1.2 (2)	0
During last pregnancy UI or urine leakage	89.1 (147)	8.5 (14)	2.4 (4)

*"Don't know" answer option was not available for these questions

Table 3: The urinary distress bother level

<i>Variable</i>	<i>Not at all % (n)</i>	<i>A little bit % (n)</i>	<i>Moderately % (n)</i>	<i>Greatly % (n)</i>
Frequent urination	40.6 (13)	37.5 (12)	18.8 (6)	3.1 (1)
Urgency urinary incontinence (UUI)	20.6 (7)	47.0 (16)	26.5 (9)	5.9 (2)
Stress urinary incontinence (SUI)	10.2 (5)	49.0 (24)	30.6 (15)	10.2 (5)
Small amounts of urine leakage	13.3 (4)	50.0 (15)	30.0 (9)	6.7 (2)
Difficulty emptying the bladder or difficulty urinating	0	50.0 (1)	0	50.0 (1)
Pain or discomfort in the lower abdominal, pelvic, or genital area	6.2 (1)	62.6 (10)	25.0 (4)	6.2 (1)

Table 4a: UI knowledge proficiency

<i>Statement</i>	<i>Agree % (n)</i>	<i>Disagree % (n)</i>	<i>Don't know % (n)</i>
1. Urinary incontinence (loss of urine or leaky bladder) is more common in young women than in old women.	4.4 (7)	73.3 (118) *	22.4 (36)
2. Women are more likely than men to leak urine.	44.7 (72) *	14.9 (24)	40.4 (65)
3. Other than pads and diapers, not much can be done to treat leakage of urine.	1.9 (3)	86.9(140) *	11.2 (18)
4. It is NOT important to diagnose the type of urine leakage before trying to treat it.	11.2(18)	70.8 (114) *	18.0 (29)
5. Many things can cause urine leakage.	91.3 (146) *	n/a	8.7 (14)
6. Certain exercises can be done to help to control urine leakage.	50.0 (80) *	11.3 (18)	38.7 (62)
7. Some medications may cause urinary leakage	37.3 (60) *	9.3 (15)	53.4 (86)
8. Once people start to leak urine, they are never able to control their urine again.	21.3 (34)	30.0 (48) *	48.7 (78)
9. Doctors can do special types of bladder testing to diagnose urine leakage	77.6 (125) *	0.6 (1)	21.8 (35)
10. Surgery is the only treatment for urinary leakage.	5.0 (8)	49.1 (79) *	45.9 (74)
11. Giving birth many times may lead to urine leakage.	47.2 (76) *	12.4 (20)	40.4 (65)
12. Most people who leak urine can be cured or improved with some kind of treatment.	90.1 (145) *	2.5 (4)	7.4 (12)

*The correct answers are bold.

Table 4b: UI knowledge proficiency

Total knowledge score	Mean	7.5
	Median	7.00
	SD	2.4
	Min – Max	0.0-12.0
UI knowledge proficiency % (n)	High (knowledge score \leq 9.0)	80.0 (128)
	Low (knowledge score \geq 10.0)	20.0 (32)

Table 5: Univariate logistic regression between UI knowledge proficiency and the independent variables

<i>Variable</i>	<i>Odds ratio</i>	<i>95% (CI)</i>	<i>p-value</i>
Mother's age (years)	1.0	(1.0; 1.2)	0.107
Employment status			
Unemployed	1.0		
Employed	1.6	(0.6; 4.6)	0.361
Mother's educational attainment			
No postgraduate	1.0		
Postgraduate	1.2	(0.6;1.7)	0.604
Work in a medical field			
No	1.0		
Yes	5.8	(2.5; 13.5)	<0.001
Last child's age (years)	1.0	(0.9; 1.1)	0.629
Last childbirth's type of delivery			
Caesarian	1.0		
Vaginal	1.5	(0.7; 3.4)	0.287
Mother's age at first childbirth (years)	1.1	(1.0; 1.3)	0.020
Parity			
1	1.0		
2	0.9	(0.3; 2.3)	0.799
3+	0.8	(0.2; 2.6)	0.663
Number of vaginal deliveries			
0	1.0		
1	0.7	(0.2; 2.2)	0.566
2	0.6	(0.2; 1.5)	0.237
3+	0.6	(0.2; 2.2)	0.440
During last pregnancy urinary incontinence or urine leakage	1.0		
Yes	0.9	(0.2; 3.5)	0.899
No/Don't know			
Frequent urination			
Yes	1.0		
No	0.9	(0.4; 2.4)	0.861

<i>Variable</i>	<i>Odds ratio</i>	<i>95% (CI)</i>	<i>p-value</i>
Urine leakage related to urgency (UUI)			
Yes	1.0		
No	0.4	(0.2; 1.0)	0.049
Urine leakage related to physical activity (SUI)			
Yes	1.0		
No	1.2	(0.5; 3.0)	0.634
Urinary incontinence (UI)			
Yes	1.0		
No	0.7	(0.3; 1.4)	0.286
Mixed urinary incontinence (MUI)			
Yes	1.0		
No	0.9	(0.2; 3.5)	0.899
Small amounts of urine leakage			
Yes	1.0		
No	0.7	(0.3; 1.9)	0.538
Pain or discomfort in the lower abdominal, pelvic, or genital area			
Yes	1.0		
No	1.5	(0.4; 5.6)	0.511
Sough help			
Yes	1.0		
No/No Symptoms	0.7	(0.3; 1.6)	0.396

Table 6: Multivariable logistic regression between UI knowledge proficiency and the independent variables

<i>Variable</i>	<i>Odds ratio</i>	<i>95% (CI)</i>	<i>p-value</i>
Work in a medical field			
No	1.0		
Yes	6.3	(2.7; 15.3)	<0.001
Urine leakage related to urgency (UI)			
Yes	1.0		
No	0.35	(0.1; 0.9)	0.037

Table 7: Help-seeking behavior

<i>Variable</i>	<i>Values: % (n)</i>
Mothers sought help for	
Frequent urination	5.4 (9)
Urine leakage	4.8 (8)
Difficulty emptying bladder or urinating	2.4 (4)
Pain or discomfort in lower abdominal, pelvic, or genital area	13.9 (23)
At least one of these symptoms	21.7 (36)
Mothers approached:	
Physician	97.0 (32)
Herbalist	3.0 (1)
Why they did not approach a physician?	
Don't trust the physicians	100 (1)
Mothers did not seek help for these symptoms*	59.6 (99)
Why they did not approach a physician?	
Symptoms were not bothering them too much	64.3 (18)
They did not trust doctors	7.1 (2)
They did not know what specialist to approach	3.6 (1)
Treatment was expensive	3.6 (1)
They tried to find treatment for themselves	10.7 (3)
Other (they did not have a problem)	7.1 (2)
Other (not specified)	3.6 (1)
Mothers did not experience these symptoms*	21.7 (36)
Whom would they approach, if they had these symptoms?	
Physician	100 (79)
Overall mothers sought help for these symptoms*	
Yes	21.7 (36)
No/no symptoms	78.3 (130)

* Frequent urination, urine leakage, difficulty emptying bladder or urinating, pain or discomfort in lower abdominal, pelvic, or genital area

Appendix 1: The research instrument

Urinary incontinence questionnaire

Instructions for answering the survey

Dear respondent, read each question and answer options carefully. Please select the answer that best corresponds to you. There is a number of questions that need to be answered by words or the numbers. There is a space near these questions where you can write your answer. Please be attentive to the instructions in *Italics*. It will assist you throughout the survey.

Part 1 *This section includes questions regarding your demographic characteristics.*

1. Indicate you age. Year ___/

2. Indicate the highest level of education that you have completed.

- 1 Middle School
- 2 High school
- 3 Professional technical education
- 4 Institute/University
- 5 Postgraduate (master, PhD)

3. What is your current employment status?

- 1 Employed
- 2 Out of work and looking for work
- 3 Homemaker
- 4 Parental leave

4. Have you ever worked in a medical field?

- 1 Yes
- 2 No

Part 2 *This section includes questions regarding your pregnancy and childbirth.*

5. Date of your last child's birth: Month _____ / Year ___/

6. Indicate type of delivery during last child birth?

- 1 C-section
- 2 Vaginal birth

7. Indicate your age at your first childbirth _____ years old.

8. Indicate number of times that you have given birth (both vaginal delivery and c-section) to a fetus with a gestational age of 24 weeks or more, regardless of whether the child was born alive or was stillborn. _____ times

9. How many times have you had vaginal delivery? _____ times

Part 3 *This section includes questions regarding your health conditions.*

10. Prior to last childbirth, did you experience urinary incontinence or urine leakage?

- 1 Yes
- 2 No
- 3 Don't know

11. Prior to last childbirth, did you have surgery due to urinary incontinence or urine leakage?

- 1 Yes
- 2 No
- 3 Don't know

12. During last pregnancy did you experience urinary incontinence or urine leakage?

- 1 Yes
- 2 No
- 3 Don't know

Part 4 *This section includes questions regarding urinary incontinence.*

INSTRUCTION

*Please tell the answer that best describes your symptoms in the **last month**.*

- 13. Do you usually experience **frequent urination**? 1 Yes 2 No
- 14. If yes, how much does it bother you? 0 Not at All 1 A Little Bit 2 Moderately 3 Greatly
- 15. Do you usually experience **urine leakage related to urgency**? 1 Yes 2 No

16. If yes, how much does it bother you? 0 Not at All 1 A Little Bit 2 Moderately 3 Greatly
17. Do you usually experience **urine leakage related to physical activity (walking, running, laughing, sneezing, coughing)**? 1 Yes 2 No
18. If yes, how much does it bother you? 0 Not at All 1 A Little Bit 2 Moderately 3 Greatly
19. Do you usually experience **small amounts of urine leakage? (drops)** 1 Yes 2 No
20. If yes, how much does it bother you? 0 Not at All 1 A Little Bit 2 Moderately 3 Greatly
21. Do you usually experience **difficulty emptying your bladder or difficulty urinating?** 1 Yes 2 No
22. If yes, how much does it bother you? 0 Not at All 1 A Little Bit 2 Moderately 3 Greatly
23. Do you usually experience **pain or discomfort in your lower abdominal, pelvic, or genital area?** 1 Yes 2 No
24. If yes, how much does it bother you? 0 Not at All 1 A Little Bit 2 Moderately 3 Greatly

Part 5 This section includes questions regarding the knowledge of urinary incontinence.

Instructions: Below are some statements about urinary incontinence (loss of urine or leaky bladder). Please state if you agree or disagree with each statement, or if you do not know.

25. Urinary incontinence (loss of urine or leaky bladder) is more common in young women than in old women. 1 Agree 2 Disagree 3 Don't know
26. Women are more likely than men to leak urine. 1 Agree 2 Disagree 3 Don't know
27. Other than pads and diapers, not much can be done to treat leakage of urine 1 Agree 2 Disagree 3 Don't know
28. It is NOT important to diagnose the type of urine leakage before trying to treat it 1 Agree 2 Disagree 3 Don't know
29. Many things can cause urine leakage. 1 Agree 2 Disagree 3 Don't know

30. Certain exercises can be done to help to control urine leakage 1 Agree 2 Disagree 3 Don't know
31. Some medications may cause urinary leakage 1 Agree 2 Disagree 3 Don't know
32. Once people start to leak urine, they are never able to control their urine again. 1 Agree 2 Disagree 3 Don't know
33. Doctors can do special types of bladder testing to diagnose urine leakage 1 Agree 2 Disagree 3 Don't know
34. Surgery is the only treatment for urinary leakage. 1 Agree 2 Disagree 3 Don't know
35. Giving birth many times may lead to urine leakage. 1 Agree 2 Disagree 3 Don't know
36. Most people who leak urine can be cured or improved with some kind of treatment. 1 Agree 2 Disagree 3 Don't know

Part 6 This section includes questions regarding your help-seeking behavior.

37. Have you ever sought help for one of the following symptoms after your last childbirth?

- 1 Yes, frequent urination
- 2 Yes, urine leakage
- 3 Yes, difficulty emptying your bladder or Difficulty urinating
- 4 Yes, pain or discomfort in your lower abdominal, pelvic, or genital area
- 5 No, I did not seek help
- 6 I do not have any of these symptoms.

38. If "Yes", whom did you approach?

- 1 Family members
- 2 Friends
- 3 Physicians,
- 4 Internet/ blogs
- 5 Other

Please specify_____

39. Why didn't you approach the physician?

- 1 Symptoms are not bothering me to much
- 2 It is normal to have such a symptom
- 3 I do not trust doctors

- 4 I don't know what specialist to approach
- 5 Treatment is expensive
- 6 I try to find treatment for myself (knowing how to deal with the diseases myself)
- 7 I feel embarrassment to talk about my problem
- 8 Other Please specify _____

Thank you for your participation!

40. If "No", why didn't you approach the physician?

- 1 Symptoms are not bothering me to much
- 2 It is normal to have such a symptom
- 3 I do not trust doctors
- 4 I don't know what specialist to approach
- 5 Treatment is expensive
- 6 I try to find treatment for myself (Knowing how to deal with the diseases myself)
- 7 I feel embarrassment to talk about my problem
- 8 Other Please specify _____

Thank you for your participation!

41. If "I do not have any of these symptoms" whom would you approach, if you had above mentioned symptoms?

- 1 Family members
- 2 Friends
- 3 Physicians
- 4 Internet/ blogs
- 5 Other Please specify _____

42. Why you would not approach the physician?

- 1 Symptoms may not bother me to much
- 2 It is normal to have such a symptom
- 3 I do not trust doctors
- 4 I don't know what specialist to approach
- 5 Treatment is expensive
- 6 I will try to find treatment for myself (Knowing how to deal with the diseases myself)
- 7 I might feel embarrassment to talk about my problem
- 8 Other Please specify _____

Thank you for your participation!

ԱՆՄԻՉԱՊԱՀ ՈՒԹՅԱՆ ՎԵՐԱԲԵՐՑ ԱԼ ՀԱՐՑ ԱԹԵՐԹԻԿ

Հարցաթերթի կիևրացման ցուցումներ

Հարգելի՛ մասնակից, ուշադիր կարդացեք յուրաքանչյուր հարցը և դրա պատասխանները: Խնդրում ենք այն պատասխանը (ները) որոնք համապատասխանում են Ձեզ: Որոշ հարցերի նպետք է պատասխանել բառերով կամ թվերով: Խնդրում ենք Ձեր պատասխանը հարցերի կողքին գտնվող դատարկ հատվածում: Նաև, հետևելով շեղագիր ցուցումներին, կարող եք կրկնել հարցաթերթի կիևրացումը:

Մաս 1 Այս բաժնում ընդգրկված հարցերը վերաբերում են Ձեր ժողովրդագրական բնութագրերին:

1. Նշեք Ձեր տարիքը՝ _____ տարի _____/

2. Ո՞րն է ամենաբարձր կրթությունը, որ ստացել եք:

- 1 Միջնակարգ դպրոց
- 2 Ավագ դպրոց
- 3 Միջին մասնագիտական (ուսումնարան)
- 4 Ինստիտուտ/համալսարան
- 5 Հետդիպլոմային կրթություն (մագիստրատուրա, ասպիրանտուրա կամ դոկտորանտուրա)

3. Ո՞րն է Ձեր ներկայիս աշխատանքային կարգավիճակը:

- 1 Աշխատող
- 2 Գործազուրկ, փնտրում եմ աշխատանք
- 3 Տնային տնտեսուհի
- 4 Դեկրետային արձակուրդի մեջ

4. Երբ եք աշխատել լեք առողջապահության ոլորտում:

- 1 Այո
- 2 Ոչ

Մաս 2 Այս բաժնում ընդգրկված հարցերը վերաբերվում են Ձեր հղիությանը և ծննդաբերությանը:

5. Նշեք Ձեր վերջին երեխայի ծննդյան ամսաթիվը: ամիս _____/ տարի _____/
6. Նշեք ծննդաբերության տեսակը վերջին երեխայի ծննդյան ժամանակ:

- 1 Բնական ճանապարհով ծննդաբերություն
- 2 Կեսարյան հատում

7. Նշեք Ձեր տարիքն առաջին ծննդաբերության ժամանակ _____ տարեկան:

8. Նշեք քանի անգամ եք ծննդաբերել (և՛ բնական ճանապարհով և՛ կեսարյան հատումով), երբ հղիության ժամկետը եղել է 24 շաբաթ կամ ավելի, և կախյալ քանից՝ երեխան կենդանի է ծնվել, թե մահացած: _____ անգամ:

9. Քանի անգամ եք ունեցել բնական ճանապարհով ծննդաբերություն _____ անգամ:

Մաս 3 Այս բաժնում ընդգրկված հարցերը վերաբերվում են Ձեր ընդհանուր առողջական վիճակին:

10. Վերջին ծննդաբերությունից առաջ արդյունք ունեցել եք անմիզապահության կամ մեզի արտահոսքի հետ կապված խնդիրներ:

- 1 Այո
- 2 Ոչ
- 3 Չգիտեմ

11. Վերջին ծննդաբերությունից առաջ արդյունք ունեցել եք վիրահատություն անմիզապահության կամ մեզի արտահոսքի հետ կապված:

- 1 Այն
- 2 Ոչ
- 3 Չգիտեմ

12. Վերջին հղիությունը և թագքում արդյունքում ներկայացված անմիջապահությունը նկատմամբ հարտահանության հետևյալ անվանումներն ունենում են:

- 1 Այն
- 2 Ոչ
- 3 Չգիտեմ

Մաս 4 Այս բաժնում և ընդգրկված հարցերը վերաբերվում են նաև անմիջապահությունը:

Բացարձակություն: *Խնդրում է ներկայացվել այն պատասխանները, որոնք ըստ Ձեզ ամենից ավել են նկատարում Ձեր ախտանիշները վերջին մեկ ամսվա ընթացքում:*

- | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------|-------------------------------------------------|
| 13. Դուք սովորաբար ունենում եք հաճախակի անհարձակություններ: | 1 <input type="checkbox"/> Այն | 2 <input type="checkbox"/> Ոչ | | |
| 14. Եթե այն, ապա այս երևույթը Ձեզ հնչքանվում է անհանգստացնում: | 0 <input type="checkbox"/> Չի անհանգստացնում | 1 <input type="checkbox"/> Քիչ է անհանգստացնում | 2 <input type="checkbox"/> Անհանգստացնում է | 3 <input type="checkbox"/> Շատ է անհանգստացնում |
| 15. Դուք սովորաբար զգում եք անհարձակ մանկություն: | 1 <input type="checkbox"/> Այն | 2 <input type="checkbox"/> Ոչ | | |
| 16. Եթե այն, ապա այս երևույթը Ձեզ հնչքանվում է անհանգստացնում: | 0 <input type="checkbox"/> Չի անհանգստացնում | 1 <input type="checkbox"/> Քիչ է անհանգստացնում | 2 <input type="checkbox"/> Անհանգստացնում է | 3 <input type="checkbox"/> Շատ է անհանգստացնում |
| 17. Դուք սովորաբար զգում եք անմիջապահ հարտահանության ֆիզիկական գործունեությունը և հետ (քայլեր, վազել, ծիծաղել, փռշտալ, հագալ): | 1 <input type="checkbox"/> Այն | 2 <input type="checkbox"/> Ոչ | | |
| 18. Եթե այն, ապա այս երևույթը Ձեզ հնչքանվում է անհանգստացնում: | 0 <input type="checkbox"/> Չի անհանգստացնում | 1 <input type="checkbox"/> Քիչ է անհանգստացնում | 2 <input type="checkbox"/> Անհանգստացնում է | 3 <input type="checkbox"/> Շատ է անհանգստացնում |

անհանգստացնում:

19. Դուք սովորաբար զգում եք **փոքր քանակությամբ մեզի արտահանության փափուկ ներքին ձևով**:

1 Այն 2 Ոչ

20. Եթե այն, ապա այս երևույթը Ձեզ հնչքանակ անհանգստացնում:

0 Չի անհանգստացնում

1 Քիչ է անհանգստացնում

2 Անհանգստացնում է

3 Շատ է անհանգստացնում

21. Դուք սովորաբար զգում եք **դժվարությամբ նման միզարձակելիս**:

1 Այն 2 Ոչ

22. Եթե այն, ապա այս երևույթը Ձեզ հնչքանակ անհանգստացնում:

0 Չի անհանգստացնում

1 Քիչ է անհանգստացնում

2 Անհանգստացնում է

3 Շատ է անհանգստացնում

23. Դուք սովորաբար զգում եք **ցավ կամ լարվածություն նրբվայնի ստորին հատվածում, կնքի կամ սեռական օրգաններին շրջանում**:

1 Այն 2 Ոչ

24. Եթե այն, ապա այս երևույթը Ձեզ հնչքանակ անհանգստացնում:

0 Չի անհանգստացնում

1 Քիչ է անհանգստացնում

2 Անհանգստացնում է

3 Շատ է անհանգստացնում

Մաս 5 Այս բաժնում ընդգրկված հարցերը վերաբերում են նաև միզապահության վերաբերյալ Ձեր գիտելիքներին:

Բացատրություն: Ստորև բերված են մի քանի հարցադրումներ անմիզապահության վերաբերյալ: Խնդրում ենք, յուրաքանչյուր հարցադրման համար, նշել արդյո՞ք **համամիտեք**, **համամիտ չեք**, կամ **չգիտեք**:

25. Անմիզապահության նշանները ավելի հաճախ հանդիպում է

1 Համամիտ եմ

2 Համամիտ չեմ

3 Չգիտեմ

էրիտասարդ, քան տարեց
կանանց մոտ:

26. Մեզի արտահոսքը ավելի
հավանական է կանանց, քան
տղամարդկանց մոտ: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ
27. Մեզի արտահոսքը բուժելու
համար միջադիրներին
տակդիրներին
օգտագործումից ավելին
հնարավոր չէ անել: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ
28. Բուժումը կատարելու համար
կարևոր չէ ախտորոշել մեզի
արտահոսքի տեսակը: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ
29. Մեզի արտահոսքը կարող է
առաջանալ բազմաթիվ
պատճառներից: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ
30. Մեզի արտահոսքը կարող է
կարգավորվել որոշ
վարժարաններին
միջոցով: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ
31. Որոշ դեղամիջոցներ կարող
են հանգեցնել մեզի
արտահոսքի: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ
32. Երբ որևէ մեկի մոտ
զարգանում է մեզի
արտահոսք, ապանայլևս
երբեք չի կարողանում
վերահսկել իր
միզատու թյունը: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ
33. Բժիշկները կարող են
կատարել միզապարկի հատուկ
ստուգումներ՝ մեզի
արտահոսքը ախտորոշելու
համար: 1 Համամիտ
էմ 2 Համամիտ
չէմ 3 Չգիտեմ

34. Մեզի արտահանության միակ բնութան վերահստությունն է: 1 Համամիտ էմ 2 Համամիտ չեմ 3 Չգիտեմ

35. Բազմաթիվ ծննդաբերությունները կարող են հանգեցնել մեզի արտահանության: 1 Համամիտ էմ 2 Համամիտ չեմ 3 Չգիտեմ

36. Մարդիկ չվերբերունեն մեզի արտահանության, կարող են որոշակի բնութան շնորհիվ ապաքինվել կամ բարելավվել իրենց վիճակը: 1 Համամիտ էմ 2 Համամիտ չեմ 3 Չգիտեմ

Մաս 5 Այս բաժնում ընդգրկված հարցերը վերաբերվում են Ձեր բնութան շնորհիվ նվազեցնել վարքագծին:

37. Վերջին ծննդաբերությունից հետո, երբեք դիմել եք օգնություն հետևյալ ախտանիշներին համար:

- 1 Այո, հաճախանի օգնություն համար
- 2 Այո, մեզի արտահանության համար
- 3 Այո, դժվարություններով համար
- 4 Այո, որովայնի ստորին հատվածում, կնքի կամ սեռական օրգանների շրջանում ցավի կամ հանգստություն համար
- 5 Ոչ, չեմ դիմել
- 6 Ես չունեմ նշված ախտանիշները

38. Եթե “Այո”, ապա ո՞ւմ եք դիմել:

- 1 Ընտանիքի անդամներին
- 2 Ընկերներին
- 3 Բժիշկին
- 4 Համացանց (Internet) / բլոգ
- 5 Այլ _____ խնդրում ենք նշել _____

39. Ինչն ո՞ւր չեք դիմել բժշկին:

- 1 Ախտանշաններն ինձ շատ չեն անհանգստացնում
- 2 Նորմալ է նման ախտանիշներուն են ալը
- 3 Ես բժիշկներին չեմ հավատում
- 4 Ես չգիտեմ, թե ինչ մասնագետի դիմեմ
- 5 Բուժումը թանկ է
- 6 Ես փորձում եմ բուժում գտնել ինձ համար (եւ գիտեմ ինչպես վարվել հիվանդություն հետ)
- 7 Ես ամաչում եմ խոսել իմ խնդրի մասին
- 8 Այլ ինդրում ենք նշել _____

Շնորհակալություն մասնակցություն համար :

40. Եթե “Ոչ, չեմ դիմել”, ապա ինչն է չեք դիմել բժշկի :

- 1 Ախտանշաններն ինձ շատ չեն անհանգստացնում
- 2 Նորմալ է նման ախտանիշներուն են ալը
- 3 Ես բժիշկներին չեմ հավատում
- 4 Ես չգիտեմ, թե ինչ մասնագետի դիմեմ
- 5 Բուժումը թանկ է
- 6 Ես փորձում եմ բուժում գտնել ինձ համար (եւ գիտեմ ինչպես վարվել հիվանդություն հետ)
- 7 Ես ամաչում եմ խոսել իմ խնդրի մասին
- 8 Այլ ինդրում ենք նշել _____

Շնորհակալություն մասնակցություն համար :

41. Եթե “Ես չնույնեմ նշված ախտանիշները”, ապա ում կդիմեիք, եթե նույն այիք վերը նշված ախտանիշները :

- 1 Ընտանիքի անդամներին
- 2 Ընկերներին
- 3 Բժիշկի
- 4 Համացանց / ֆլնգ
- 5 Այլ ինդրում ենք նշել _____

42. Ինչն է էիք դիմի բժշկի :

- 1 Ախտանշաններն ինձ շատ չեն անհանգստացնում

- 2 Նորմալ է նման ախտանիշներուն ենալը
- 3 Ես բժիշկներին չեմ հավատում
- 4 Ես չգիտեմ, թե ինչ մասնագետի դիմեմ
- 5 Բուժումը թանկ է
- 6 Ես կփորձեի բուժում գտնել ինձ համար (եւ գիտեմ ինչ պէս վարվել հիվանդություն հետ)
- 7 Ես կամաքեի խոսել իմ խնդրի մասին
- 8 Այլ ինդրում ենք նշել _____

Շնորհակալություն մասնակցություն համար :

Appendix 2: Consent form

American University of Armenia

Institutional Review Board #1

Consent form

Title of Research Project: The prevalence and the knowledge level of urinary incontinence among women with history of at least one childbirth living in Yerevan, Armenia

Hello, my name is Anna Isahakyan. I am a student at the Turpanjian School of Public Health at the American University of Armenia. We are conducting a survey as part of my graduation thesis project to estimate the prevalence of urinary incontinence (UI), knowledge proficiency of and help-seeking behavior for UI among women with history of at least one childbirth.

We select AUA EEC afterschool English program by convince. The survey is conducted among the mothers of children enrolled in the AUA EEC Afterschool English Program and we invite you as a mother to participate in this study.

Your participation in this survey only involves completion of a questionnaire that should take no longer than 15 minutes. Your name, your child name or any contact information such as home address or phone numbers will not be asked. Nobody except our research team will have access to your data. Only the summary of the data from all questionnaires will be presented in the final report.

Your participation in this survey is voluntary. It is your right to agree or refuse to participate, without any adverse consequences. You may refuse to answer any question you feel uncomfortable with. There are no known risks to you and your child, as well as to his/her future attendance to the EEC Afterschool English Program if you participate in the survey. You will not receive any direct benefits by participating in this survey, but your honest answers will help us to better understand the situation regarding urinary incontinence, which later can help to improve health status of women.

If you have any questions regarding this survey you can contact the Principal Investigator Arusyak Harutyunyan by this phone number: (37494) 630077. If you feel you have not been treated fairly or think you have been hurt by joining the study you should contact Human Subject Protection

Administrator in the American University of Armenia Varduhi Hayrumyan by this phone number:
(37494) 173500. Do you agree to participate?

YES or NO.

Thank you.

Հայաստանի Ամերիկյան Համալսարան

Գիտահետազոտական Էթիկայի թիվ 1 Հանձնաժողով

Իրագեկ Համաձայնությունն

Գիտահետազոտական ծրագրի վերնագիր: Անմիջապահություն տարածվածությունը և գիտելիքները առնվազն մեկ ծննդաբերություն ունեցած կանանց շրջանում, ովքեր ապրում են Երևանում, Հայաստան:

Բարև Ձեզ: Իմ անունը Աննա Իսահակյան է: Ես Հայաստանի Ամերիկյան համալսարանի Թրփանճեան Հանրային առողջապահություն ֆակուլտետի մագիստրատուրայի ուսանող եմ: Իմ ավարտական աշխատանքի շրջանակներում մենք իրականացնում ենք հետազոտություն, որպեսզի հասկանանք անմիջապահություն տարածվածությունը, ինչպես նաև անմիջապահություն վերաբերյալ գիտելիքները և օգնություն փնտրող վարքագիծն առնվազն մեկ ծննդաբերություն ունեցած կանանց շրջանում:

Հարմարավետությունը սկզբունքով ընտրվել է անգլերենի արտադրողական ծրագրի: Հետազոտությունը իրականացվում է անգլերենի արտադրողական ծրագրում ընդգրկված երեխաների մայրիկների շրջանում և Ձեզ, որպես մայրիկ հրավիրում ենք մասնակցելու այս հետազոտությանը:

Ձեր մասնակցությունը այս հետազոտությանը ներառում է միայն հարցաթերթի լրացում, որը կտևի ոչ ավելի, քան 15 րոպե: Հարցաթերթի կում չկան անձնական քննությունի հարցեր, ինչպիսիք են Ձեր կամ Ձեր երեխայի անունը, հասցեն, հեռախոսահամարը և այլն: Հետազոտության խմբի անդամներից բացի ոչ մեկին հասանելի չեն լինի Ձեր տված պատասխանները: Միայն քննար

հարցաթերթի կնեքից ամփոփված ինֆորմացիան կնեքկայացվի վերջնական գեկույցում:

Ձեր մասնակցությունը այս հետազոտությունը կամավոր է: Դա Ձեր իրավունքն է համաձայնվել կամ հրաժարվել մասնակցելուց՝ առանց որևէ բացասական հետևանքների: Հարցաթերթի լրացնելիս Դուք կարող եք չպատասխանել այն հարցերին, որոնք Ձեզ դուր չեն գալիս: Ձեր մասնակցությունը հետազոտությունում որևէ ռիսկ չի ենթադրում Ձեր կամ Ձեր երեխայի համար և որևէ կերպ չի կարող անդրադարձնել Ձեր երեխայի հետագա անգլերենի արտադրողական ծրագիր հաճախելիություն վրա: Մասնակցելով հետազոտությանը չեք ստանա ոչ մի անմիջական շահ, ևակայն Ձեր անկեղծ պատասխանները կօգնեն մեզ ավելի լավ հասկանալ անմիջապահություն հետ կապված իրավիճակը, ինչը հետագայում կարող է օգնել բարելավել կանանց առողջական վիճակը:

Այս հետազոտության վերաբերյալ հարցեր ունենալու դեպքում կարող եք գանգահարել հետազոտության ղեկավար Արուսյակ Հարությունյանին հետևյալ հեռախոսահամարով՝ (37494) 630077: Եթե Դուք կարծում եք, որ հետազոտությանը նթացքում Ձեզ լավ չեն վերաբերվել և/կամ հետազոտությունը Ձեզ վնաս է հասցրել, կարող եք կապվել Հայաստանի ամերիկյան համալսարանի էթիկայի հանձնաժողովի համակարգող Վարդուհի Հայրումյանի հետ հետևյալ հեռախոսահամարով՝ (37494) 173500:

Դուք համաձայն եք մասնակցել այս հետազոտությանը:

Այն կամ Ոչ:

Շնորհակալություն:

Appendix 3: STATA output for logistic regression

1. Multiple logistic regression model

```

Logistic regression                Number of obs =      156
                                   LR chi2(3)      =      23.92
                                   Prob > chi2     =      0.0000
Log likelihood = -65.823913        Pseudo R2      =      0.1538

```

knscorenumlog	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
medfield	5.935727	2.687208	3.93	0.000	2.444107	14.41544
UUI	.3356129	.1675961	-2.19	0.029	.1261164	.8931118
agefirstbirth	1.108434	.0624718	1.83	0.068	.9925118	1.237895
_cons	.0627596	.1029849	-1.69	0.092	.0025171	1.564779

2.Variance inflation factor

```
. vif, uncentered
```

Variable	VIF	1/VIF
agefirstbirth	15.59	0.064153
UUI	15.23	0.065643
medfield	1.35	0.738059
Mean VIF	10.73	

3. Multiple logistic regression model

```

Logistic regression                Number of obs =      157
                                   LR chi2(2)      =      20.85
                                   Prob > chi2     =      0.0000
Log likelihood = -67.57954        Pseudo R2      =      0.1337

```

knscorenumlog	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
medfield	6.374714	2.849689	4.14	0.000	2.654287	15.30994
UUI	.356475	.1763613	-2.08	0.037	.1351787	.9400474
_cons	.7914634	.6826017	-0.27	0.786	.1459848	4.290956

4.Variance inflation factor

```
. vif, uncentered
```

Variable	VIF	1/VIF
medfield	1.32	0.757037
UUI	1.32	0.757037
Mean VIF	1.32	