Validation of the Hungarian version of the Prolapse and Incontinence Knowledge Questionnaire (PIKQ)☆

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ABSTRACT

Objective: The Prolapse and Incontinence Knowledge Questionnaire (PIKQ) is a self-administered, reliable and valid instrument which assess knowledge regarding urinary incontinence and pelvic organ prolapse. There is no validated Hungarian version of this questionnaire; therefore the aim of this study was to develop a reliable, valid and culturally sensitive Hungarian version of the PIKQ.

Study design: A cross-sectional study was conducted from March to October 2022 with a sample of 459 women. The PIKQ, which consists of the urinary incontinence and pelvic organ prolapse scales, was translated into Hungarian in accordance with international guidelines. The validity and reliability of the final version of the Hungarian PIKQ was evaluated using construct validity, comparison with known-groups, internal consistency and test-retest reliability.

Results: Regarding construct validity, all fit indices were found acceptable. Healthcare workers had significantly higher knowledge about urinary incontinence and pelvic organ prolapse (p < 0.001) compared to women who had not worked in a medical field. The Hungarian PIKQ had an adequate internal consistency with Cronbach alpha of 0.785 for the urinary incontinence scale and 0.826 for the pelvic organ prolapse scale. The correlation coeffcients between the test and retest was 0.931 for the urinary incontinence scale and 0.964 for the pelvic organ prolapse scale.

Conclusion: The Hungarian version of the PIKQ is a reliable and valid tool to measure the level of knowledge about urinary incontinence and pelvic organ prolapse among Hungarian speaking women.

1. Introduction

Female pelvic floor disorders (PFDs) such as urinary incontinence (UI) and pelvic organ prolapse (POP) are prevalent conditions which affect millions of women worldwide. [1] Prevalence estimates for UI in women can range from 25% to 45%, [2] while prevalence estimates for POP can vary from 1% to 65%. [3] The economic burden of PFDs is substantial. PFDs are estimated to have annual ambulatory expenses of $300 million (2006 dollars) or more. [4] According to multinational studies, the estimated annual cost-of-illness for urgency urinary incontinence ranged from €2.9 billion (five European countries in 2000, direct costs) to €7.0 billion (Canada and five European countries in 2005,

direct and indirect costs). [5] Even though pelvic floor disorders are seldom associated with severe morbidity, their symptoms can have a serious negative impact on the quality of life of many women who suffer from these conditions. [6] They can adversely affect women's interpersonal relationships and psychological well-being, leading to social isolation, negative self-perception, depression, anxiety and embarrassment. Women's daily, work and entertainment activities could also be impaired. [7–9] Women with lower urinary tract symptoms are more likely to experience higher work productivity loss than those without lower urinary tract symptoms. [10] Despite the severe impact of PFDs on quality of life, health care-seeking for PFDs among women is low. [11] 50–75% of women with urinary incontinence do not seek care. [12]

Delay in seeking care until the condition progressively worsens has higher financial costs. [5] In case of UI, the cost of surgical therapy was found to be four times higher than the expenditures of behavioral and pharmacological therapies combined. [13] According to the results of the largest continence care study in Hungary, 30% of the participants with UI did not seek help from a primary care provider and 66% of them did not visit a specialist. [14] Misconceptions and inadequate knowledge about PFDs is one of the most commonly reported reasons for not seeking care. [15–17] Enhancing knowledge of these conditions could lead to earlier treatments, improved symptoms and better quality of life. [18,19] In order to establish appropriate educational interventions for increased knowledge, it could be essential to assess the current information level about PFDs. [20] There are a limited number of validated questionnaires about PFDs in Hungarian [21] and none of them assesses knowledge. The Prolapse and Incontinence Knowledge Questionnaire (PIKQ) is a self-administered, reliable and valid instrument which assess knowledge regarding UI and POP. [22] It was developed in English and later adapted into Turkish, [23] Spanish, [24] Thai, [25] Hebrew [26] and Arabic. [27] There is no validated Hungarian version of this questionnaire; therefore the aim of this study was to translate the PIKQ into Hungarian and to develop a reliable, valid, and culturally sensitive Hungarian version of the PIKQ.

2. Materials and methods

This cross-sectional study was conducted from March to October 2022. The study protocol was approved by National Scientific and Ethical Committee (lV/1596–3/2022/EKU) and registered by the US National Institute of Health (clinicaltrials.gov, Identifier NCT NCT05567900).

2.1. Participants

Participants were invited to participate in the study through social media type platforms such as specific groups on Facebook, WhatsApp and Telegram. We also forwarded an invitation via e-mail to different primary care clinics. The objectives of the study and the online survey link were included in the invitation. Before completing the self-administered questionnaire, informed consent was obtained. No names or other identifying information was collected from the study participants. Women over the age of 18 years with the ability to read and write Hungarian who volunteered to participate in the study were eligible for enrollment.

2.2. Study tool

The PIKQ is a self-administered questionnaire for assessing knowledge about PFDs. It contains two distinct scales: the first one, PIKQ-UI, measures knowledge about UI, whereas the second one, PIKQ-POP, focuses on POP knowledge. Each scale consists of 12 statements related to the etiology, diagnosis and treatment of UI and POP. For every statement, 3 possible responses are given: 'Agree', 'Disagree' or 'I don't now'. One point is earned for every correct answer, while the incorrect answer or the answer of 'I don't know' are given a score of 0. The total score of each scale is in the range of 0–12, with higher scores indicating greater knowledge about UI and POP. [22].

2.3. Translation and cultural adaptation

Before the translation process was conducted, the agreement from the author (Aparna D. Shah) to perform the cultural adaptation of the PIKQ into Hungarian was obtained. Translation of the PIKQ was carried out in accordance with international recommended guidelines. [28] Two Hungarian physiotherapists who were fluent in English independently translated the original PIKQ into Hungarian. The two translations were compared by the study team and a unified translation was

Table 1
Main characteristics of study participants (n = 459).

Characteristics	Mean (SD) or N (%)
Age, mean (SD), y	36.30 ± 12.39
BMI, mean (SD), kg/m^2	24.59 ± 4.89
Highest education level	
Eight grade or less	7 (1.53%)
High school	142 (30.94%)
College /University	310 (67.53%)
Marital status	
Married	267 (58.30%)
Not married	191 (41.70%)
Work in a medical field	
Yes	87 (18.95%)
No	372 (81.05%)
Parity	
Nulliparous	163 (36.06%)
Parous	289 (63.94%)
Any urinary incontinence	
Yes	227 (50%)
No	227 (50%)
Types of urinary incontinence	
Stress urinary incontinence	152 (70.37%)
Urge urinary incontinence	31 (14.35%)
Mixed urinary incontinence	33 (15.28%)
Urologist/urogynecologist visit in the past	
Yes	39 (8.59%)
No	415 (91.41%)
Urine incontinence treatment	
Yes	10 (2.22%)
No	441 (97.78%)
Pelvic organ prolapse	
Yes	32 (9.64%)
No	300 (90.36%)
Pelvic organ prolapse treatment	
Yes	4 (0.89%)
No	447 (99.11%)

developed (version 1). The back translation into English was carried out by a professional translator who was a native English speaker with no prior knowledge of the PIKQ. The study researchers compared the back-translation to the original version and agreed on a second Hungarian version. A face-to-face interview was conducted with 15 women to ensure the appropriateness and clarity of the items. The final Hungarian version of the PIKQ was produced after making minor adjustments based on the participants' feedback.

2.4. Statistical analyses and psychometric evaluation

Data were analyzed with SPSS version 28 and SPSS AMOS version 29.0. The level of statistical significance was taken as p < 0.05. A descriptive analysis was performed to present the data (for scales mean and standard deviation; for categorical variables sample size and percentage). The predetermined minimal sample size was 300 participants, based on the findings of Comrey et al. [29] Construct validity of the PIKQ was carried out using confirmatory factor analysis. The following fit statistics were included in the analysis: standardized factor loadings (SFL) (SFLs above 0.3 were considered acceptable [30]), χ [2] and degree of freedom (df). Comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR) were also used. The following criteria for acceptable fit were used: CFI> 0.90, TLI> 0.90, REMSEA≤ 0.08 and SRMR ≤ 0.08. [31] The Mann-Whitney U test was conducted to compare PIKQ-UI and PIKQ-POP scores between women who had worked in a medical field and women who had not. The Mann-Whitney U test was also used to compare PIKQ-UI and PIKQ-POP scores across some characteristics related to POP and UI. Cronbach's alpha was used to assess internal consistency and reliability, with values above 0.70 considered good internal consistency. [32] The test-retest reliability of the total score of each scale was analyzed through

Table 2
Model fit statistics of the Hungarian PIKQ-UI and PIKQ-POP.

Fit statistics	PIKQ-UI	PIKQ-POP
χ^2	101.5	128.068
DF	52	53
P	< 0.001	< 0.001
χ^2/DF	1.952	2.416
CFI	0.955	0.935
TLI	0.943	0.92
REMSEA	0.046	0.056
SRMR	0.042	0.043

DF: degree of freedom, CFI: comparative fit index, TLI: Tucker-Lewis index, RMSEA: root mean square error of approximation, SRMR: standardized root mean square residual.

intraclass correlation coefficient (ICC), with values between 0.5 and 0.75 considered moderate reliability, between 0.75 and 0.9 indicating good reliability and greater than 0.9 considered excellent reliability. [33] For test-retest reliability, data were collected by face-to-face interviews with 30 women. Duration of the test-retest period was two weeks.

3. Results

Initially, a total of 467 women filled out the questionnaire. 8 respondents did not meet the inclusion criteria; therefore, 459 women were included in the analysis. The main characteristics of study participants are detailed in Table 1.

Parameters examining model fit are shown in Table 2. All fit indices for both scales (PIKQ-UI and PIKQ-POP) are acceptable.

The CFA results of the Hungarian PIKQ-UI and PIKQ-POP are presented in Fig. 1 and Fig. 2. All SFLs for UI items except i7 and i9 were > 0.3. In the PIKQ-POP scale, all items had SFL > 0.30, most were > 0.51.

For women who had worked in a medical field, the median PIKQ-UI and PIKQ-POP scores were 10 (min-max: 0–12) and 8 (min-max: 0–12). For other participants who had not worked in a medical field, the median PIKQ-UI and PIKQ-POP scores were 8 (min-max: 0–12) and 5 (min-max: 0–12). Healthcare workers had significantly higher PIKQ-UI (U=9614.00, p < 0.001) and PIKQ-POP scores (U=9705.50, p < 0.001).

Women with a history of UI did not have significantly higher PIKQ-UI (U=25385.00, p = 0.784) and PIKQ-POP (U=24896.50, p = 0.533) scores compared to women without a history of UI, however, women who had sought care for UI had significantly higher PIKQ-UI scores (U=6564.50, p = 0.049). PIKQ-POP scores were significantly higher in women with a history of POP (U=3780.00, p = 0.047) and in women
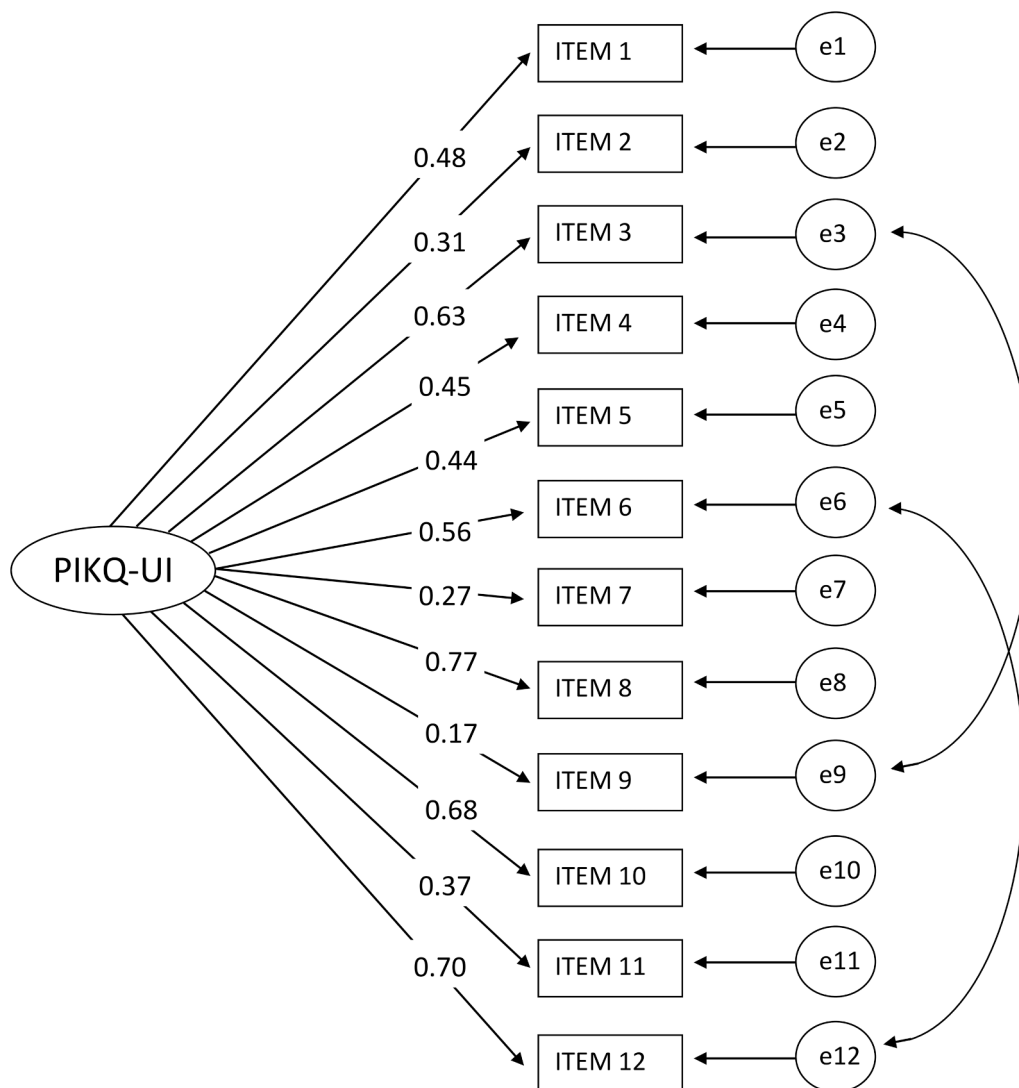

Fig. 1. Structural model and standardized regression weights of factor loading of PIKQ-UI questionnaire with modified indices. Note: ITEM1–12 =PIKQ-UI questions 1–12.
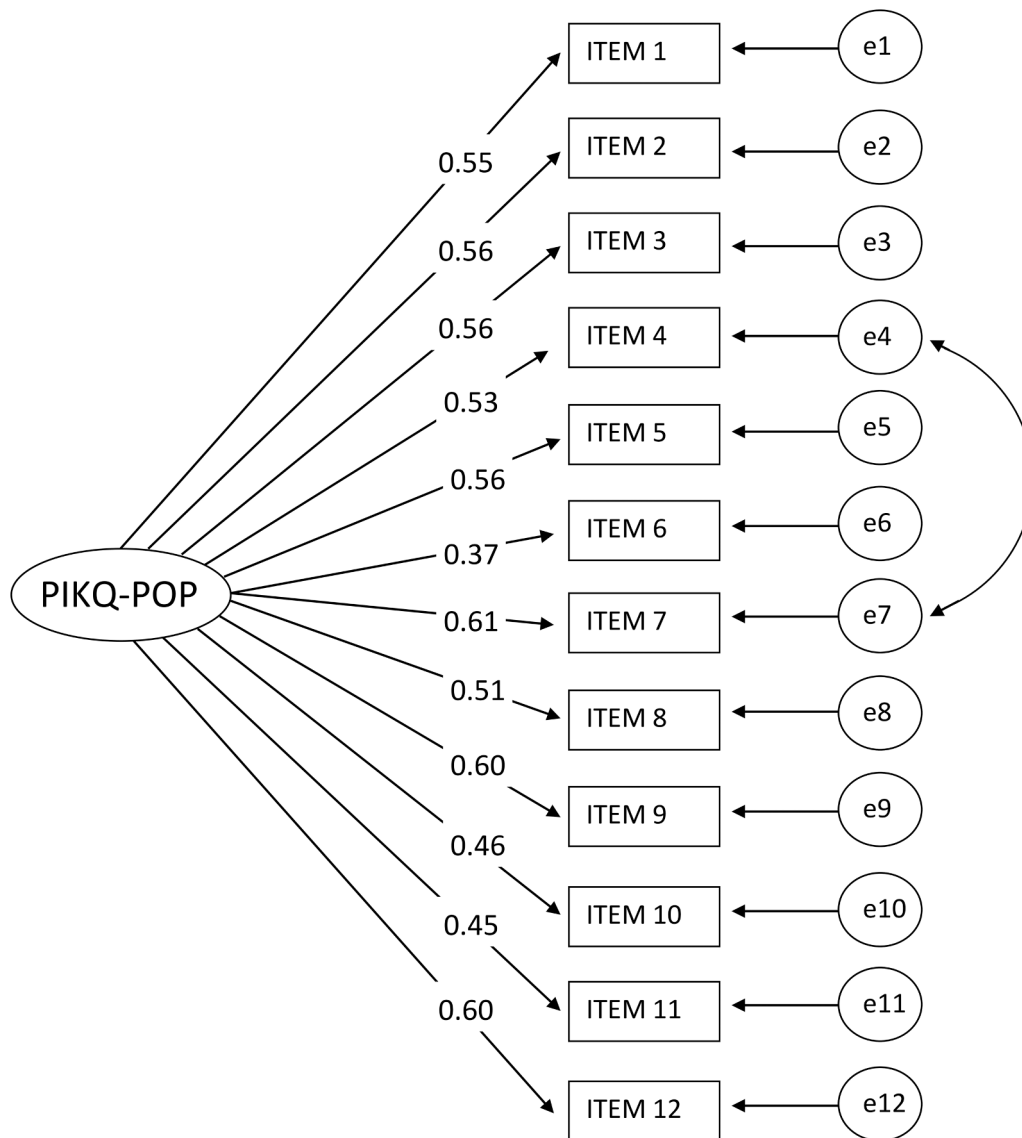
Fig. 2. Structural model and standardized regression weights of factor loading of PIKQ-POP questionnaire with modified indices. Note: ITEM1–12 =PIKQ-POP questions 1–12.

who had sought care for POP (U=2244.00, p = 0.006).

Both PIKQ-UI and PIKQ-POP had an adequate internal consistency. The Cronbach's alpha was 0.785 for the PIKQ-UI and 0.826 for the PIKQ-POP. ICC between test and retest was 0.931 (95% CI: 0.833–0.972; p < 0.001) for the PIKQ-UI and 0.964 (95% CI: 0.909–0.986; p < 0.001) for the PIKQ-POP.

4. Discussion

Determining the current information level women have about PFDs is essential in order to establish appropriate educational interventions. [20] Adequate knowledge may result in earlier treatments and improved quality of life. [34,35] The PIKQ is a simple, self- administered and validated instrument used to assess knowledge regarding UI and POP. [22] To our knowledge, this was the first study which aimed to develop a valid and culturally sensitive Hungarian version of the PIKQ. According to our findings, the translated PIKQ demonstrated good reliability and validity in Hungarian women.

In the present study, the internal construct validity was ensured since all fit indices were within an acceptable range. In the PIKQ-POP scale, all items had acceptable SFLs, whereas 10 out of 12 items in the PIKQ-UI

scale had acceptable SFLs. Celenay et al. [23] translated the PIKQ into Turkish and tested its validity with a sample size of 341 participants. Similarly to our results, 2 items in the Turkish version of PIKQ-UI had lower SFLs than 0.3, yet, these items were not the same as in our study.

Komon et al. [25] translated and validated a Thai version of the PIKQ. The psychometric properties of the translated questionnaire were tested among 150 women who worked as nurses and 168 women who attended a gynecology clinic. In their study, nurses were more likely to select the correct answer for all items for both the UI and POP scale. In the study of Celenay et al., [23] participants employed in a medical field had greater knowledge about UI and POP. Similarly to these results, we found that women who had worked in a medical field had higher PIKQ-UI and PIKQ-POP scores.

In our study, participants with a history of UI did not have higher PIKQ-UI scores; however, participants with a history of POP had greater knowledge about POP. Women who had sought care for UI or POP also had higher knowledge scores. Further research is needed to better understand the impact of UI and POP knowledge on care seeking behavior. According to the results of Celenay et al., [23] women did not have better knowledge scores even if they had UI or POP. They attributed these results to the fact that PFDs are often linked to embarrassment,

misconceptions and social stigma.

According to our results, the Hungarian version of the PIKQ had an adequate internal consistency. The Cronbach's alpha was 0.785 for the UI scale and 0.826 for the POP scale. The values in this study are higher than those of the Spanish study (0.72–0.64), [24] Thai study (0.72–0.64) [25] and Turkish study (0.67–0.75), [23] yet, lower than the scores presented in the original study (0.82–0.89). [22].

In the present study, intraclass correlation coefficients were excellent for the PIKQ-UI (0.93) and PIKQ-POP (0.96). These results are consistent with the Turkish version of the PIKQ-UI (0.90) and PIKQ-POP (0.91). [23] Similarly, the ICC was 0.94 for the original, English version of the PIKQ-UI. [22] However, the ICC for the original version of the PIKQ-POP (0.67) [22] was lower compared to the Hungarian and the Turkish version of the PIKQ-POP. [23].

The present study had some limitations. The majority of the participants had a university degree, which could have had an effect on their understanding of the wording and the questions. Additionally, we could not find any other Hungarian questionnaires which assess knowledge about PFDs; therefore, we could not compare our translation of the PIKQ to another instrument.

In conclusion, the Hungarian version of the PIKQ is a reliable and valid tool to measure the level of knowledge about UI and POP among Hungarian speaking women. It could be a useful instrument to evaluate Hungarian women's knowledge about PFDs in both clinical and research practice.

CRediT authorship contribution statement

Márta Hock: Conceptualization, Methodology, Project administration, Supervision, Writing – review & editing. **Eszter Ambrus:** Conceptualization, Data curation, Writing – review & editing. **Éva Szatmári:** Conceptualization, Data curation, Methodology, Project administration, Writing – original draft. **Alexandra Makai:** Conceptualization, Data curation, Formal analysis, Methodology, Software, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

References

[1] Islam RM, Oldroyd J, Rana J, Romero L, Karim MN. Prevalence of symptomatic pelvic floor disorders in community-dwelling women in low and middle-income countries: a systematic review and meta-analysis. Int Urogynecol J 2019;30(12). https://doi.org/10.1007/s00192-019-03992-z.

[2] Milsom I, Gyhagen M. The prevalence of urinary incontinence. Clima J Int Menopause Soc 2019;22(3):217–22. https://doi.org/10.1080/13697137.2018.1543263.

[3] Brown HW, Hegde A, Huebner M, et al. International urogynecology consultation chapter 1 committee 2: Epidemiology of pelvic organ prolapse: prevalence, incidence, natural history, and service needs. Int Urogynecol J 2022;33(2). https://doi.org/10.1007/s00192-021-05018-z.

[4] Sung VW, Washington B, Raker CA. Costs of ambulatory care related to female pelvic floor disorders in the United States. Am J Obstet Gynecol 2010;202(5). https://doi.org/10.1016/j.ajog.2010.01.015.

[5] Milsom I, Coyne KS, Nicholson S, Kvasz M, Chen CI, Wein AJ. Global prevalence and economic burden of urgency urinary incontinence: a systematic review. Eur Urol 2014;65(1). https://doi.org/10.1016/j.eururo.2013.08.031.

[6] Good MM, Solomon ER. Pelvic floor disorders. Obstet Gynecol Clin North Am 2019;46(3):527–40. https://doi.org/10.1016/j.ogc.2019.04.010.

[7] Southall K, Tuazon JR, Djokhdem AH, van den Heuvel EA, Wittich W, Jutai JW. Assessing the stigma content of urinary incontinence intervention outcome measures. J Rehabil Assist Technol Eng 2017;4:1–13. https://doi.org/10.1177/2055668317738943.

[8] Imoto A, Sarker M, Akter R, Matsuyama A, Honda S. Health-related quality of life in parous women with pelvic organ prolapse and/or urinary incontinence in Bangladesh. Int Urogynecol J 2021;32(4). https://doi.org/10.1007/s00192-020-04410-5.

[9] Fontenele MQS, Moreira MA, de Moura ACR, de Figueiredo VB, Driusso P, Nascimento SL. Pelvic floor dysfunction distress is correlated with quality of life, but not with muscle function. Arch Gynecol Obstet 2021;303(1). https://doi.org/10.1007/s00404-020-05770-5.

[10] Lin KY, Siu KC, Lin KH. Impact of lower urinary tract symptoms on work productivity in female workers: a systematic review and meta-analysis. Neurourol Urodyn 2018;37(8). https://doi.org/10.1002/nau.23744.

[11] Abrams P, Andersson KE, Apostolidis A, et al. 6th International Consultation on Incontinence. Recommendations of the International Scientific Committee: Evaluation and treatment of urinary incontinence, pelvic organ prolapse and faecal incontinence. Neurourol Urodyn 2018;37(7). https://doi.org/10.1002/nau.23551.

[12] Minassian VA, Yan X, Lichtenfeld MJ, Sun H, Stewart WF. The iceberg of health care utilization in women with urinary incontinence. Int Urogynecol J 2012;23(8):1087–93. https://doi.org/10.1007/s00192-012-1743-x.

[13] Wilson L, Brown JS, Shind GP, Luca KO, Subak LL. Annual direct cost of urinary incontinence. Obstet Gynecol 2001;98(3):398–406. https://doi.org/10.1016/S0029-7844(01)01464-8.

[14] Szabó L, Szabó J, Vidor E. A drop of self-confidence program about urinary incontinence. Neurourol Urodyn 2021;40(4). https://doi.org/10.1002/nau.24621.

[15] McKay ER, Lundsberg LS, Miller DT, et al. Knowledge of pelvic floor disorders in obstetrics (Published online) Female Pelvic Med Reconstr Surg 2019:199.e1–199.e24. https://doi.org/10.1097/SPV.0000000000000604.

[16] Tinetti A, Weir N, Tangyotkajohn U, Jacques A, Thompson J, Briffa K. Help-seeking behaviour for pelvic floor dysfunction in women over 55: drivers and barriers. Int Urogynecol J 2018;29(11). https://doi.org/10.1007/s00192-018-3618-2.

[17] Berger MB, Patel DA, Miller JM, Delancey JO, Fenner DE. Racial differences in self-reported healthcare seeking and treatment for urinary incontinence in community-dwelling women from the EPI study. Neurourol Urodyn 2011;30(8). https://doi.org/10.1002/nau.21145.

[18] Fante JF, Silva TD, Mateus-Vasconcelos ECL, Ferreira CHJ, Brito LGO. Do women have adequate knowledge about pelvic floor dysfunctions? A systematic review. Rev Bras Ginecol e Obstet 2019;41(8). https://doi.org/10.1055/s-0039-1695002.

[19] Vasconcelos CTM, Firmiano MLV, Oriá MOB, Vasconcelos Neto JA, Saboia DM, Bezerra LRPS. Women's knowledge, attitude and practice related to urinary incontinence: systematic review. Int Urogynecol J 2019;30(2). https://doi.org/10.1007/s00192-018-3759-3.

[20] Chen C, Cox JT, Yuan C, Thomaier L, Dutta S. Knowledge of pelvic floor disorders in women seeking primary care: a cross-sectional study. BMC Fam Pr 2019;20(1):1–10. https://doi.org/10.1186/s12875-019-0958-z.

[21] Hock M, Tiringer I, Ambrus E, Németh Z, Farkas B. Validation and translation of the Hungarian version of the Australian Pelvic Floor Questionnaire (APFQ-H). Int Urogynecol J 2022;0123456789. https://doi.org/10.1007/s00192-022-05322-2.

[22] Shah AD, Massagli MP, Kohli N, Rajan SS, Braaten KP, Hoyte L. A reliable, valid instrument to assess patient knowledge about urinary incontinence and pelvic organ prolapse. Int Urogynecol J 2008;19(9):1283–9. https://doi.org/10.1007/s00192-008-0631-x.

[23] Toprak Celenay S, Coban O, Sahbaz Pirincci C, et al. Turkish translation of the Prolapse and Incontinence Knowledge Questionnaire: validity and reliability. Int Urogynecol J 2019;30(12). https://doi.org/10.1007/s00192-019-03962-5.

[24] Muñiz KS, Cedeño K, Carson KA, et al. Validation of a Spanish Version of the Prolapse and Incontinence Knowledge Questionnaire. Female Pelvic Med Reconstr Surg 2017;27(11). https://doi.org/10.1097/SPV.0000000000001027.

[25] Komon W, Manonai J, Kijmanawat A, et al. Validation of the Thai version of the Prolapse and Incontinence Knowledge Questionnaire (PIKQ). Int Urogynecol J 2022;33(11). https://doi.org/10.1007/s00192-021-05020-5.

[26] Weiss A, Yohay NZ, Daya K, et al. Validation of the hebrew version of the prolapse and incontinence knowledge questionnaire (PIKQ) during pregnancy. Int Urogynecol J 2022;33(11). https://doi.org/10.1007/s00192-021-05038-9.

[27] Yohay NZ, Cohen R, Hasan M, et al. Condition-specific validation of the Arabic version of the Prolapse and Incontinence Knowledge Questionnaire (PIKQ) among parturient (Published online) Int Urogynecol J 2022. https://doi.org/10.1007/s00192-022-05417-w (Published online).

[28] Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. Spine (Philos Pa 1976) 2000;25(24). https://doi.org/10.1097/00007632-200012150-00014.

[29] Comrey A.L., Backer T.E., Glaser E.M.A. Sourcebook for Mental Health Measures. Oxford: Human Interaction Research Institue; 1973.

[30] Hair J.F., Tathma R.L., Anderson R.E., Balck W. Multivariate Data Analysis. Fifth Ed. Prentice-Hall; 1998.

[31] Hu LB, Bentler PM. Fit indices in covariance structure modeling: sensitivity to underparameterized model misspecification. Psychol Methods 1998;3(4):424–53. doi:doi:10.1037/1082-989X.3.4.424.

[32] Nunnally J., Bernstein I. Psychometric Theory, 3rd edn, 1994. McGraw-Hill, New York. 1994;3.

[33] Koo TK, Li MY. A guideline of selecting and reporting intraclass correlation coefficients for reliability research. J Chiropr Med 2016;15(2). https://doi.org/10.1016/j.jcm.2016.02.012.

[34] Hyakutake MT, Han V, Baerg L, et al. Pregnancy-associated pelvic floor health knowledge and reduction of symptoms: The PREPARED randomized controlled trial. J Obstet Gynaecol Can 2018;40(4):418–25. https://doi.org/10.1016/j.jogc.2017.10.022.

[35] Liu J, Tan SQ, Han HC. Knowledge of pelvic floor disorder in pregnancy. Int Urogynecol J 2019;30(6). https://doi.org/10.1007/s00192-019-03891-3.