



Validation test of Indonesian pelvic floor distress inventory-20 (Indonesian PFDI-20)

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ABSTRACT

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The pelvic floor distress inventory-20 (PFDI-20) questionnaire is one of the questionnaires used to help find out complaints of pelvic floor dysfunction. The questionnaire is also frequently used in studies related to pelvic floor dysfunction. The validation test results of the questionnaire have not been obtained from Indonesian population. This study aimed to obtain an Indonesian PFDI-20 questionnaire that is in accordance with the original questionnaire and valid as well as reliable use for the Indonesian population. The validation test series were conducted through several stages: forward translation, back-translation, expert panel, pre-testing, and cognitive interviewing, final version and documentation. Data of 77 female respondents of reproductive age in the Yogyakarta Special Region were collected from January to March 2018. The statistical test result of questionnaire validity from the corrected item-total correlation of each question item has value more than 0.30 (0.385-0.781) indicating that the Indonesian PFDI-20 questionnaire was valid. Test reliability of the questionnaire using Cronbach's alpha with a high significant result of 0.911 (0.902-0.913) > r table was obtained. In conclusion, the Indonesian PFDI-20 questionnaire is valid and reliable, therefore it can be used in Indonesian population.

ABSTRAK

Kuesioner *pelvic floor distress inventory-20* (PFDI-20) adalah salah satu kuesioner untuk mengetahui keluhan disfungsi dasar panggul. Kuesioner ini juga sering digunakan dalam penelitian terkait disfungsi dasar panggul. Di Indonesia belum ada uji validasi kuesioner tersebut. Tujuan penelitian ini adalah memperoleh kuesioner PFDI-20 Indonesia yang sesuai dengan kuesioner asli dan valid serta reliabel untuk populasi Indonesia. Uji validasi dilakukan beberapa tahapan, yaitu *forward translation*, *back-translation*, *expert panel*, *pre-testing and cognitive interviewing*, *final version* dan *documentation*. Data 77 responden perempuan usia reproduksi di wilayah Daerah Istimewa Yogyakarta diambil sejak Januari sampai Maret 2018. Hasil uji statistik validitas kuesioner dilihat dari *corrected item-total correlation* masing-masing butir pertanyaan memiliki nilai >0,30 (0,385-0,781) yang menunjukkan bahwa kuesioner PFDI-20 Indonesia valid. Uji reliabilitas kuesioner menggunakan *Cronbach's alpha* diperoleh signifikan tinggi sebesar 0,911 (0,902-0,913) > r tabel. Dapat disimpulkan, kuesioner PFDI-20 Indonesia valid dan reliabel sehingga dapat digunakan untuk populasi Indonesia.

Keywords:
validation test;
pelvic floor distress
inventory-20;
Indonesia;
population;

INTRODUCTION

Pelvic floor dysfunction is a condition of impaired pelvic floor function, generally including pelvic organ prolapse, urinary incontinence, anal incontinence, sexual dysfunction, as well as perineal problems.¹ Approximately more than half of women who have given birth, have complaints of pelvic floor dysfunction. In Indonesia this figure has not been reported completely. Risk factors for pelvic floor dysfunction are multifactorial. Although not all factors can be explained, but some of the factors that are often delivered include pregnancy in old age, vaginal delivery, parity, which increases the number of births will increase the risk of pelvic floor dysfunction.²

Various complaints of pelvic floor dysfunction delivered by a woman in her lifetime. Health workers often need some sort of tool to find out how much the degree of severity of the complaint. Although it is not a diagnostic tool, the pelvic floor distress inventory-20 (PFDI-20) questionnaire can be used to help the examiner and the patient to understand the complaints of pelvic floor dysfunction experienced.³⁻⁵

Pelvic floor distress inventory (PFDI) and pelvic floor impact questionnaire (PFIQ) were published in 2001, as two valid and reliable instruments to assess the quality of life of women with all forms of pelvic floor dysfunction. PFDI-20 itself is a short form of PFDI, which shows very good correlation with long form PFDI, quite reliable and responsive to change. The questionnaire was chosen because it has 3 groups of questions in it that are clear and easy to understand, so it should be easy to use for clinical and research purposes.⁶

The PFDI-20 has been translated in various languages, followed by validation test. Several publications have presented the results of the validation test, and stated that PFDI-20 is a questionnaire

instrument to assess women's legitimate and reliable pelvic floor dysfunction.^{5,6}

Various complaints of pelvic floor dysfunction are found in women in various phases of life, both reproductive and post-reproductive ages. This condition results in impaired pelvic floor functions including the functioning of the urinary tract, the lower gastrointestinal tract, and the reproductive organs themselves. Diagnosis usually refers to uterine prolapse as part of pelvic organ prolapse, urinary incontinence, anal incontinence, or female sexual dysfunction.¹In the context of its diagnosis and management, recognizing risk factors becomes a very important thing. Various risk factors do not seem to be clearly explained by the mechanism, but some other factors are very often delivered among others; pregnancy and childbirth in old age, vaginal delivery, increased parity, all of which increase the risk of pelvic floor dysfunction.⁷⁻¹⁰

Vaginal delivery is a risk factor for pelvic organ prolapse. Urinary incontinence occurs three times more in primipara than nullipara at the same age. Vaginal delivery has twice as many risks of urinary incontinence as urinary incontinence.¹¹⁻¹³ Sphincter ani trauma in vaginal delivery (third-degree IV perineal rupture) is a risk factor for anal incontinence after delivery.^{2,14} An increase in body mass index is associated with incidence, prevalence, and progressivity of pelvic organ prolapse.⁷

The PFDI-20 questionnaire consisted of 20 questions divided into 3 groups, the pelvic organ prolapse distress inventory (POPDI-6) questionnaire group consisted of 6 questions, the colorectal-anal distress inventory (CRADI-8) group consisted of 8 questions, and the urinary distress inventory (UDI-6) consists of 6 questions. The answer choices consist of 'yes' and 'no'. In the yes option, it is described how disturbing complaints of pelvic floor dysfunction. The option of 'no' is 0, whereas the degree of disturbance in

the 'yes' answer is multiplication of 25 (range 25-100 from not disturbing at all until very disturbing).⁶

The objective of the study was to obtain a valid and reliable Indonesian PFDI-20 questionnaire that can be used by all health workers in Indonesia.

MATERIALS AND METHODS

Translation process of PFDI-20 questionnaire

This study was conducted after approval obtained from The Medical dan Ethics Committee, The Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta (Ref. KE/FK/1206/EC/2017). The research design used was a series of validation tests conducted through several stages, namely forward translation, back translation, expert panel, and pre-testing and cognitive interviewing.

Forward translation

The PFDI-20 questionnaire was translated into Bahasa by two highly skilled translators, familiar with various queries in the questionnaire, and had good language-related skills in the questionnaire (English) but had a mother tongue in the language of the validation test (Bahasa). Forward translation was done by 2 obstetric gynecology specialists and citizens of Indonesian who had been accustomed using the questionnaire. Both experts are familiar with the various terms in the questionnaire, have good language-related skills in the questionnaire (English), have a mother tongue in accordance with the language that would be used as validation test which was Bahasa.

Back translation

The questionnaire was translated back into English by two independent translators, who had a mother tongue in English, and had no knowledge of

the questionnaire. Back translation is done on some questions that have been chosen by an expert based on keywords or sensitive to cross-cultural translation problems and when additional questions are deemed necessary, WHO approval must be requested. The translation results are compared back to the original English questionnaire, to ensure no missing or missing parts throughout the translation process. The questionnaire was translated back into English by two independent translators, who had a mother tongue in English, and had no knowledge of the questionnaire. Back translation was conducted by 2 foreign students (from Australia and Germany who have mastered Bahasa well). Both students read the entire translation of the questionnaire and translated back to English. The translation results were compared back with the original questionnaire in English. Both respondents provided back translations that were in accordance with the original questionnaire, no passage missing or missing during the translation process.

Expert panel

The meeting of experts who master the science of pelvic floor dysfunction aimed to identify and resolved various problems arising from the process of translation that had been passed. From the entire translation process that had been conducted and produced the PFDI-20 questionnaire in Indonesian, the expert panel was asked to make a statement about the translation result and give suggestions. The panel involved consisted of four obstetric and gynecologic specialist, urogynecology and reconstruction consultant. From the entire translation process that had been conducted up to generate the PFDI-20 questionnaire in Bahasa, the four experts claimed to be able to accept the whole process and not provided any change of questionnaire.

Pre-testing and cognitive interviewing

Pre-testing and cognitive interviewing was required for the purpose of pre-test of the questionnaire in the target population. Respondents provided advice on language and questionnaire form. From the suggestion given, a final PFDI-20 questionnaire was prepared in Bahasa. Against the questionnaires were agreed upon by the expert panel, then pre-testing and cognitive interviewing would be conducted as a pre-test if later the questionnaires would be used in the target population. Respondents included 10 individuals who could represent the group that would use the questionnaire, consisting of doctors, midwives, and housewives. The ten people were asked to read the entire translation of the questionnaire and provided advice, related to the use of language and questionnaire form. Eight people said the whole questionnaire was easy to understand, with three of them suggesting minority changes. The other two expressed the words used less simply, and gave examples of changes in the order of words desired. Correction of the sentence was conducted so that it could simplify the wording of the Indonesian PFDI-20 questionnaire and could be more easily understood by the respondents. The answer choices contained in the questionnaire consist of 'yes' and 'no'. In the 'yes' answer, it was described how disturbing complaints of pelvic floor dysfunction were. The choice of 'no' answers is 0, whereas the degree of disturbance in the 'yes' answer was multiplication of 25 (range 25-100 from not disturbing at all until very disturbing).

Statistical analysis

Statistical test for validity using product moment correlation technique, seen from corrected item-total correlation of each question point. The internal reliability of the questionnaire

was calculated using Cronbach's alpha coefficients. Test-retest reliability is evaluated by using intraclass correlation coefficients (ICC).¹⁵

RESULTS

Validation process of Indonesian PFDI-20 Questionnaire

The Indonesian PFDI-20 questionnaire validation test needs to be done to obtain a completely valid and reliable questionnaire that can be used in Indonesian women population. The study was conducted in Dr Sardjito General Hospital area, as well as in the working area of the hospital of educational network, in Yogyakarta Special Region in January until March 2018. The population was women of reproductive age up to menopause. The sample of the study (respondents) was part of the research population that meets the inclusion and exclusion criteria, and had given consent to participate in the study. The sample were taken using consecutive sampling method.

Inclusion criteria were aged 18-45 years, married, and had a minimum education level junior high, and were willing to participate in the study. Exclusion criteria were respondents with a history of severe diseases such as malignant disease, and still in certain treatment affecting women's sexual activity. Respondents were asked to answer all questions in the Indonesian PFDI-20 Questionnaire as well as to communicate when a word or question that might not be understood.

Test results of Indonesian PFDI-20 Questionnaire validation

This validation research study involved 77 respondents. The statistical test of the questionnaire validity using corrected item-total correlation of each question item has a value greater than 0.30 (0.385-0.781), which indicates valid PFDI-20 (TABLE 1). Cronbach's

coefficients were used to determine the total score and 3 domains in the questionnaire, with the result of $\alpha = 0.911$ (range 0.902-0.913) > r table (TABLE

1). These results indicate that Indonesian PFDI-20 has a high significance of reliability.

TABLE 1. Statistical data corrected item-total correlation and Cronbach's alpha for Indonesian PFDI-20

	Average scale if indicator is deleted	Variation scale if indicator is deleted	Corrected item-total correlation	Cronbach's alpha if indicator is deleted
popdi1	206.82	53020.335	0.543	0.908
popdi2	210.71	52539.944	0.621	0.905
popdi3	229.87	55823.009	0.637	0.906
popdi4	228.25	54759.057	0.626	0.905
popdi5	229.22	56207.280	0.545	0.907
popdi6	232.14	56362.782	0.653	0.906
cradi1	215.26	55249.274	0.385	0.913
cradi2	221.43	54320.959	0.565	0.907
cradi3	227.92	56183.783	0.549	0.907
cradi4	224.35	56545.625	0.441	0.909
cradi5	221.10	54655.673	0.554	0.907
cradi6	220.78	55220.437	0.494	0.908
cradi7	222.40	54006.323	0.563	0.907
cradi8	228.90	55955.015	0.489	0.908
udi1	224.03	55451.341	0.480	0.909
udi2	222.40	53841.849	0.654	0.904
udi3	224.03	54349.368	0.574	0.906
udi4	228.57	55834.117	0.566	0.907
udi5	228.57	53712.406	0.781	0.902
udi6	219.48	53053.016	0.666	0.904

DISCUSSION

Pelvic floor dysfunction is one of the conditions that can occur in a woman's life phase. It often consists of pelvic organ prolapse, urinary incontinence, and gastrointestinal complaints up to anal incontinence. This condition can affect the daily activities of a woman to affect the overall quality of his life. Pelvic floor dysfunction can be evaluated by three categories; by looking at the complaints of each compartment and the degree of weight of complaints,

with an evaluation of overall quality of life, and by knowing whether there is or there is no sexual dysfunction.^{1,5}

The long form of the PFDI-20 questionnaire contains 46 complaints of pelvic floor dysfunction. On the way, for practicality and ease of use considerations, experts create a short form of the questionnaire. The questionnaire is known as the PFDI-20 questionnaire consisting of 20 questions (6 questions about pelvic organ prolapse complaints, 8 questions about colorectal channel complaints, and 6 questions

about urinary tract complaints). The PFDI-20 questionnaire has been widely used in various studies in various countries. Validity and reliability have also been frequently tested. The results of the study suggest that the PFDI-20 questionnaire has been shown to have good sensitivity and specificity in helping to know complaints of pelvic floor dysfunction.⁵

In the process of translating and validating the PFDI-20 questionnaire, experts had expressed approval of the entire contents of the questionnaire. In pre-testing and cognitive interviewing, from 10 individuals as respondents, 8 people stated the whole questionnaire was easy to understand, with 3 of them suggesting minority words change. The suggested change was that the word '*mulai*' was replaced with the word '*memulai*', and the word '*mengontrol*' was replaced with the word '*mengendalikan*'. The word '*vagina*' was suggested to be replaced with other words that can be more generally known. The word '*tidak mengganggu*' was replaced with the word '*tidak*' only, and the replacement of the word '*biasa*' in other words because it seemed a bit awkward. The other two expressed the words used less simply, and gave examples of changes in the order of words desired.

Improvements of the suggested words or sentences which is recommended is in the CRADI-8 domain question. The second sentence in the CRADI-8 group was '*Apakah anda merasa belum sepenuhnya dapat mengosongkan usus besar anda pada akhir buang air besar (buang air besar tidak tuntas)*' was recommended to be replaced by '*Apakah anda sering merasakan buang air besar tidak tuntas?*'. Sentence number 5 in CRADI-8 group was '*Apakah anda biasa buang angin tanpa dapat mengontrolnya*' was also recommended to be replaced by '*Apakah anda tidak bisa mengontrol buang angin?*'. Improvement of this sentence was considered to simplify the

composition of words in the Indonesian PFDI-20 questionnaire to be more easily understood by the respondents.

The choice of answers contained in the PFDI-20 questionnaire is composed of 'yes' and 'no'. In the 'yes' answer, it is described how disturbing complaints of pelvic floor dysfunction are. The choice of 'no' answers is 0, whereas the degree of disturbance in the 'yes' answer is multiplication of 25 (range 25-100 from not disturbing at all until very disturbing).

The statistical test of the questionnaire validity could be seen from the corrected item-total correlation of each question item, or by using factor analysis. A question item was valid if the value of r-count was greater than r-table value. Reliability test questionnaires were also conducted on each question by looking at the value of Cronbach's alpha.¹⁵

CONCLUSION

The questionnaire of Indonesian PFDI-20 is valid and reliable, therefore it can be used to help establish the diagnosis of female pelvic floor dysfunction complaints in Indonesian population.

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