

Validation of the Spanish-language version of the Prolapse Quality of Life Questionnaire in Chilean women

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Received: 26 February 2014 / Accepted: 13 July 2014 / Published online: 16 September 2014
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Abstract

Introduction and hypothesis The Prolapse Quality of Life (P-QOL) questionnaire is a specific health-related quality of life (HRQL) instrument to assess the impact of POP on women. It has been validated in English-speaking women and to date has been translated into several other languages. However, currently there is no Spanish translation of the P-QOL questionnaire. The aim of this study was to translate the P-QOL questionnaire into Spanish and to assess its feasibility, validity, and reliability.

Methods Following a forward- and back-translation of the original English P-QOL questionnaire into Spanish language, the translated questionnaire was reviewed by a group of patients as well as an expert panel to assess its

comprehensibility. In this cross-sectional study women with POP symptoms were recruited from a tertiary referral teaching hospital. Women were defined as symptomatic if they report feeling a lump/bulge/pressure in the vagina. The Spanish translated P-QOL questionnaire was self-administered to all women. Reliability, content, and construct validity were evaluated using the Cronbach's alpha coefficient, ANOVA, and Spearman's correlation tests.

Results One hundred and twenty-eight women were studied. There were no missing items. The Cronbach's alpha ranged from 0.626 to 0.866 across domains, demonstrating the good reliability of the Spanish P-QOL. The severity of symptoms was related to the worst quality of life, but the severity of POP was not related to poorer QoL.

Electronic supplementary material The online version of this article (doi:10.1007/s00192-014-2484-9) contains supplementary material, which is available to authorized users.

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Conclusions The Spanish translated version of the P-QOL is a reliable, consistent and valid instrument to assess symptom severity and QoL impact in Chilean women with POP.

Keywords Quality of life · Pelvic organ prolapse · Questionnaire · Validity · Reliability

Introduction

Pelvic organ prolapse (POP) prevalence is estimated in 2.04 per 1,000 women annually [1]. The risk of developing POP increases with age and parity [2–4], and the lifetime probability of undergoing prolapse repair is about 11 % [4]. POP symptoms and quality of life (QoL) are key factors in treatment decision [5–7]. It has been shown that POP may cause personal, physical and role limitations in daily activities [8, 9]. Depression, poor self-image and an impairment to participate in social activities have been also reported in women with POP [8]. Bladder, bowel, and sexual symptoms are often associated and a higher frequency of these symptoms correlates with a worsened QoL [8, 10]. The global impact of POP on QoL has been established as moderate, regardless of the prolapse stage [11].

Several questionnaires are used to measure QoL in women with pelvic floor dysfunction [12–15]. In a recent review, Al-Badr [14] identified four instruments specifically designed or adapted to evaluate quality of life in women with pelvic organ prolapse: the Pelvic Floor Distress Inventory (PFDI), the Pelvic Floor Impact Questionnaire (PFIQ) [16], the Prolapse Quality of Life (P-QOL) [6], and the electronic Personal Assessment Questionnaire Pelvic Floor (ePAQ-PF) [17]. These instruments focus mainly on bowel and urogenital symptoms and their related burden (Table 1), with the exception of the P-QOL, which is focused rather on general health, with nine dimensions or domains measuring everything from physical limitation to emotions. It is also the shortest questionnaire, with 20 items.

The P-QOL was developed in 2005 specifically for women with POP regardless of the stage of their disease. It has already been cross-culturally adapted and validated in several languages [18–25]. Although approximately 406 million people worldwide speak Spanish, the P-QOL has not yet been validated in the Spanish language. The aim of our study was to develop a Spanish version of the P-QOL that proves conceptual equivalence with the original version, and also to assess its reliability and validity among Chilean women.

Materials and methods

P-QOL

The P-QOL was designed to assess the severity of POP symptoms and their impact on a woman's QoL. It covers the following nine domains: general health (1 item), prolapse impact (1 item), role (2 items), physical (2 items) and social limitations (3 items), personal relationships (2 items), emotions (3 items), sleep/energy (2 items), and severity measurement (4 items). The answers were categorized using a four-point Likert scale: “none/not at all,” “slightly/a little,” “moderately,” and “a lot.” A score was calculated for each domain ranging from 0 to 100. A higher score indicates a greater impairment of quality of life [6].

In addition to the QoL items, the P-QOL also includes 18 symptom questions: 11 urogenital (bladder, sexual) and 7 bowel. Response options are on a five-point Likert scale, which includes the same four options as used for QoL items plus a “not applicable” option if the women do not have the symptom [6]. These symptom questions do not compose any dimension or score.

Adaptation of the P-QOL into Spanish

A standard method [26] for the adaptation process was used, following recommendations of the P-QOL developer. First, the Spanish translation of the original English version of the P-QOL was carried out separately by two nurse-midwives, with a high level of fluency in English. Second, a Spanish version was approved by the two nurse-midwives after assessing the differences compared with the initial translation. Third, two other bilingual English-Spanish nurses translated the consensus Spanish version of the P-QOL questionnaire back into English. The original and back-translated versions were then checked for discrepancies by the researchers and referred to the original developer of the P-QOL for review. Since no changes were introduced by the original author, this version was considered the first Spanish version.

Finally, this first Spanish version was reviewed by a multidisciplinary panel of ten Chilean experts in this field (urogynecologists, nurses, midwives, and psychologists), who evaluated the suitability of the item content, applying the Content Validity Index [27]. According to the panel's recommendation, the term “your prolapse” was replaced with “the prolapse.” The mean of the Content Validity Index for the whole instrument was 0.9. Only two items obtained an index lower than 0.7, the standard proposed.

The second Spanish version of P-QOL was then interview-administered to 10 women with symptomatic POP (aged 45–70 years). All versions administered to the patients were printed in large letters (16 points) to help women with poor vision, as was done in the original version. The aim of the

Table 1 Summarized characteristics of the evaluated pelvic organ prolapse (POP)-specific quality of life instruments

Instrument	Reference	Purpose of development	Response option; score range	Number of items	Number of domains	Domains measured (number of items)			
						POP	Bowel	Urinary/urogenital	Other
PFDI	Barber et al. [16]	To assess symptom distress in women with pelvic floor dysfunction	4-point Likert; 0–400	46	3	Pelvic Organ Prolapse Distress Inventory (16)	Colorectal-Anal Distress Inventory (17)	Urinary Distress Inventory (28)	–
PFQ	Barber et al. [16]	To assess life impact in women with pelvic floor disorders	4-point Likert; 0–400	93	3	Pelvic Organ Prolapse Impact Questionnaire (31)	Colorectal-Anal Impact Questionnaire (31)	Urinary Impact Questionnaire (31)	–
P-QOL	Digesu et al. [6]	To assess the severity of symptoms of prolapse and their impact on the quality of life	4-point Likert; 0–100	38	9	Prolapse impact (1); severity measures (4)	–	–	General health perception (1); rol limitation (2); physical limitation (2); social limitation (3); personal relationship (2); emotions (3); sleep/energy (2)
e-PAQ-PF	Radley et al. [17]	To assess impact on quality of life	4-point Likert; 0–100	118	4	Vaginal (22)	Bowel (33)	Urinary (35)	Sexual (28)

PFDI Pelvic Floor Distress Inventory, *PFQ* Pelvic Floor Impact Questionnaire, *P-QOL* Prolapse Quality of Life, *e-PAQ-PF* electronic Personal Assessment Questionnaire Pelvic Floor

interview was to assess the understanding of questions and response options. Women were encouraged to express any difficulties experienced when completing the questionnaire.

Study design and participants

This was a cross-sectional observational study carried out at the urogynecology unit of a Chilean University hospital between June and December 2011. Only women aged 18 years old and older, who consented to participate in the study, and who had been sexually active during the 6 months before enrolment were included. Women with neurological diseases and/or those who had undergone previous surgery for POP or stress urinary incontinence were excluded. The protocol was approved by the Institutional Review Board of the hospital and the Nursing School of the Pontificia Universidad Católica de Chile. All participants gave their written informed consent.

Clinical characteristics were obtained from medical records, including: comorbidities, onset of symptoms, parity, mode of delivery, maximum newborn weight, and stage of the disease according to the Pelvic Organ Prolapse Quantification (POP-Q) system [28]. Women were asked to self-complete socio-demographic characteristics and the Spanish version of the P-QOL in private.

We classified the severity of symptoms according to the responses to the 18 urogenital and bowel questions. “Mild” describes a woman who answered “none” or “slightly” to all questions; “moderate” describes a woman who answered “moderately” to at least one question; and “severe” describes a woman who answered “a lot” to at least one question.

Statistical analyses

Socio-demographic and clinical characteristics of the sample were measured using descriptive tests. The distribution of scores for the P-QOL questionnaire was evaluated by calculating the following: mean (standard deviation [SD]); proportion of patients with a missing item; observed range; and the proportion of patients with the worst and the best possible scores (floor and ceiling effect). The reliability was evaluated by Cronbach’s alpha coefficient, which assessed internal consistency. Adequate alpha values should be ≥ 0.70 , and values ≥ 0.80 were considered to be excellent [26].

Since construct validity is the extent to which scores demonstrate expected logical relations with other variables, the following two approaches were applied: first, to assess known group patterns based on the severity of urogenital and bowel symptoms, the mean scores of the P-QOL domains and 95 % confidence intervals (95 % CI) for each severity group were depicted on two separate bar charts; and second, another bar chart was also constructed with mean P-QOL scores and 95 % CI for POP-Q stages. Mean differences in the P-QOL among these groups were tested by analysis of variance (ANOVA)

and the magnitude of the difference between extreme groups was measured by an effect size coefficient (difference in mean scores between groups/pooled SD: content validity). Finally, to follow the assessment procedure of the original questionnaire and other countries’ adaptations as closely as possible, the Spearman’s correlation coefficients between POP-Q stage and P-QOL scores were calculated (construct validity) and compared with previously published results. Data were analyzed using SPSS 19.0 software and reliability using SAS 9.2 software.

Results

One hundred and twenty-eight patients met the inclusion criteria and were included in the study. Mean age was 53.1 years (SD=9.8). POP symptoms onset had a median of 24 months. Socio-demographic and clinical characteristics are shown in Table 2.

The distribution characteristics and reliability of the P-QOL scores are shown in Table 3. There were no missing

Table 2 Socio-demographic and clinical characteristics ($n=128$)

Characteristic	$N=128$
Age in years, \pm SD	53.1 \pm 9.8
Educational level (%)	
Elementary or without studies	78 (60.9)
Secondary	41 (32)
University	9 (0.7)
Occupation (%)	
Housewife	67 (52.3)
Employed	55 (42.9)
Unemployed	5 (3.9)
Other	1 (0.7)
Partner (%)	
Yes	117 (91.4)
No	11 (8.5)
Years of cohabitation, \pm SD	25.41 \pm 13
Parity, median (IQR)	3 (2)
Type of delivery, frequency (%) $n=188$	
Vaginal	72 (61.7)
Forceps	41 (22.3)
Cesarean section	30 (15.9)
Maximum newborn weight, \pm SD	3.749 \pm 463 g
Prolapse stage (%)	
0	1 (0.8)
I	6 (4.7)
II	65 (50.8)
III	49 (38.3)
IV	7 (5.5)

Table 3 Distribution and reliability of the Spanish P-QOL (*n*=128)

Scales	Number of items	Mean	SD	Observed range	Floor (%) ^a	Ceiling (%) ^a	Cronbach's alpha
General Health Perceptions (GHP)	1	53.5	(22.3)	0–100	7.8	2.3	–
Prolapse Impact (PI)	1	75.5	(28.5)	0–100	51.6	1.6	–
Role Limitations (RL)	2	55.3	(38.0)	0–100	29.7	19.5	0.844
Physical Limitations (PL)	2	55.5	(37.1)	0–100	23.4	20.3	0.781
Social Limitations (SL)	3	32.6	(33.6)	0–100	7.0	35.9	0.839
Personal Relationships (PR)	2	51.2	(37.0)	0–100	24.4	20.3	0.844
Emotions (E)	3	56.9	(34.3)	0–100	24.2	7.8	0.866
Sleep/Energy (S/E)	2	51.4	(32.6)	0–100	17.2	11.7	0.728
Severity Measures (SM)	4	47.1	(25.9)	0–100	3.9	3.1	0.626

SD standard deviation

^a Proportion of patients with best (*ceiling*) and worst (*floor*) quality of life

items. The ceiling effect percentage was low in almost all domains, but the floor effect percentage was higher than 20 % for 5 of the 9 domains: prolapse impact, role limitations, physical limitations, social limitations, personal relationship, and emotions. The reliability of the questionnaire achieved a Cronbach's alpha value greater than 0.7 in all domains except for the severity measures domain (0.63).

The association between P-QOL domain score and urogenital and bowel symptoms is shown in Figs. 1 and 2. Figure 1 shows the mean and 95 % CI for groups of “mild or moderate” and “severe” urogenital symptoms. Owing to the low number of women with mild urogenital symptoms (*n*=4), they were combined with those reporting moderate symptoms. The mean score for each P-QOL domain was significantly lower (better QoL) for women with mild/moderate urogenital symptoms than for those with severe symptoms. Effect size coefficients of the severity groups ranged from 0.57 to 1.09.

The construct validity is shown in Fig. 3. It shows mean scores of the P-QOL for each POP-Q stage. Mean interval between POP-Q and P-QOL response was 3 months. Stage 0 was combined with stage I because there was only one woman with this stage. Mean scores were above 50 in most of the

domains, regardless of the POP stage. Statistically significant differences among stages were found for four domains: prolapse impact, personal relationships, emotions, and severity measures.

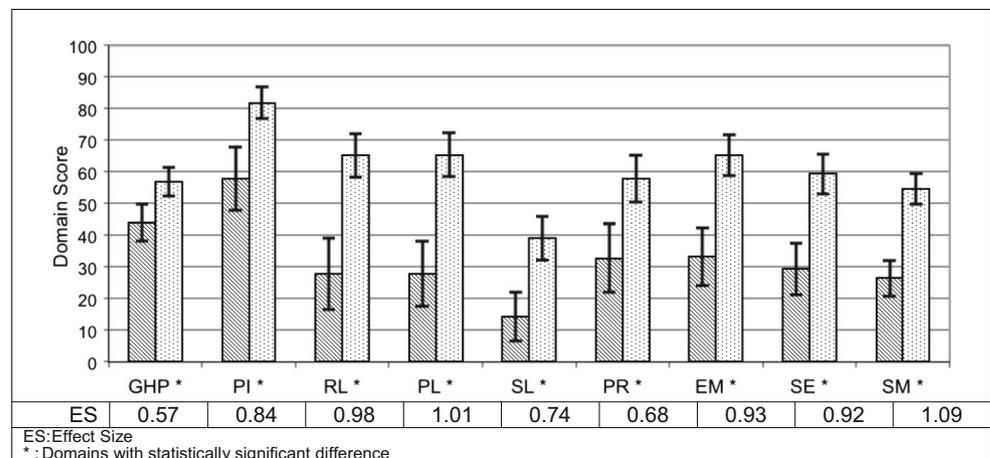
Spearman correlations (calculated with the whole sample) between POP-Q stages and P-QOL domain scores ranged from 0.01 to 0.19. The correlation coefficients reported by the original P-QOL and other countries' versions are also shown in Fig. 3.

Discussion

A valid, reliable, and culturally adapted questionnaire to measure QoL is mandatory for the assessment and management of women with POP symptoms in both clinical and research practice [7]. This study supports the use of the Spanish P-QOL to assess the impact of POP on QoL. It has proven to be well accepted, reliable, and valid.

The absence of missing values suggests the easy completion and good acceptability of the Spanish P-QOL version among Chilean women, in particular, thinking that the

Fig. 1 Health-related quality of life impairment according to the severity of the urogenital symptoms (*n*=128). Each bar shows the P-QOL mean scores (95 % confidence interval) according to each group of symptoms. Bars with lines indicate mild to moderate symptoms and dots indicate severe symptoms. Below, the effect size (*ES*) to severity difference is shown. Asterisks indicate domains with statistically significant differences



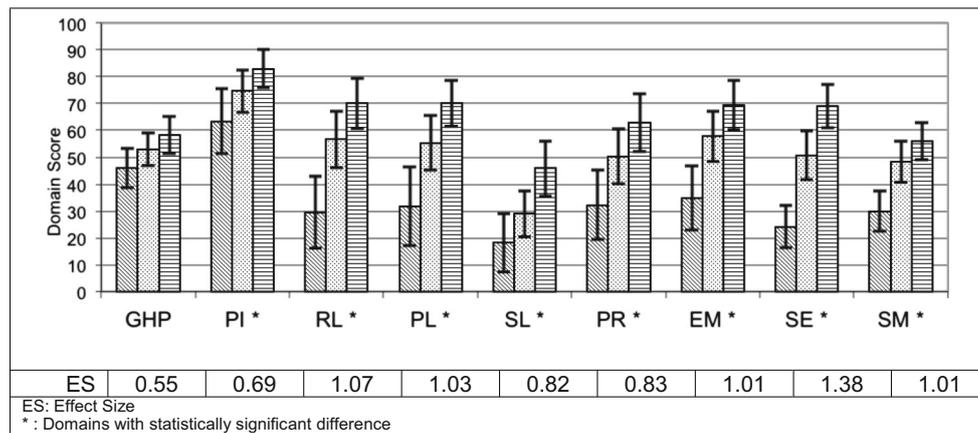


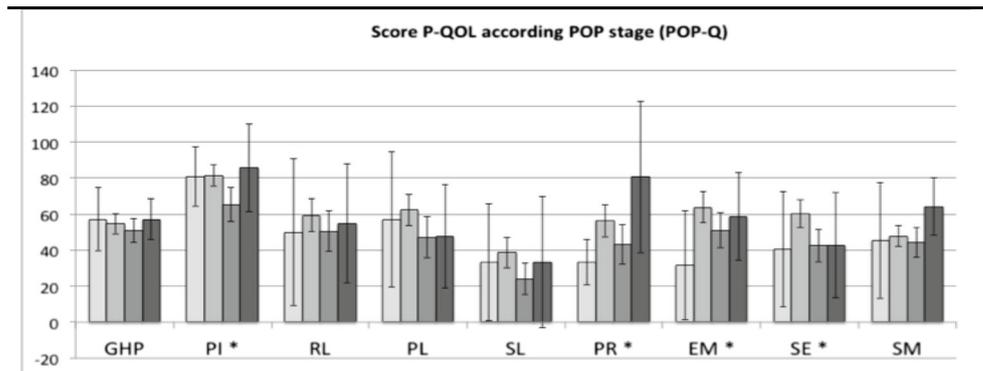
Fig. 2 Health-related quality of life impairment according to the severity of the bowel symptoms (n=128). Each bar shows the P-QOL mean scores (95 % confidence interval) according to each group of severity symptoms. Diagonal line represents mild symptoms, dotted bar represents moderate,

and horizontal line bar represents severe symptoms. Below, ES to severity difference is shown. Asterisks indicate domains with statistically significant differences

Hospital Sótero del Río, which is the biggest hospital of the south zone of Santiago de Chile, receives the low-income

population of the metropolitan area, with a basic to medium educational level, as patients. The good acceptability is also

Fig. 3 Distribution of P-QOL score and Spearman's coefficient according to the pelvic organ prolapse quantification (POP-Q) stage. Each bar shows the P-QOL mean scores (95 % confidence interval) according to each group of the POP-Q. Darker color indicates high POP stage (0–IV), r indicates Spearman's coefficient. Asterisks indicate domains with statistically significant differences. n indicates the sample used to calculate Spearman's correlation



Country	GHP (r)	IP (r)	RL (r)	PL (r)	SL (r)	PR (r)	E (r)	S/E (r)	SM (r)	n
Chile	-0.06	-0.16	-0.08	-0.07	-0.18	-0.16	-0.07	-0.19	0.01	128
Australia	0.17	0.08	0.23	0.12	0.12	-0.36	0.08	0.28	0.21	45
Holland	0.04	0.09	-0.07	-0.01	-0.01	0.11	-0.02	0.01	0.12	155
Original	0.11	0.52	0.53	0.56	0.48	0.57	0.49	0.39	0.59	155
Brazil	0.02	0.49	0.39	0.31	0.35	0.35	0.36	0.37	0.41	98
Turkey	0.55	0.44	0.55	0.52	0.53	0.5	0.46	0.53	0.62	145
Italy	0.31	0.71	0.63	0.6	0.58	0.58	0.61	0.54	0.63	126
Iran	0.45	0.48	0.37	0.29	0.18	0.04	0.05	0.32	0.48	124
Slovakia	0.25	0.44	0.58	0.58	0.62	0.45	0.45	0.44	0.45	50
Thailand	0.27	0.57	0.39	0.43	0.4	0	0.39	0.26	0.53	155

r: Spearman Coefficient
*: Domains with statistically significant difference
n: sample used to calculate of Spearman correlation

supported by the expert panel evaluation, which considered it highly relevant, with a content validity index mean of 0.9. The two items with an index below the standard proposed of 0.7 (“Does your prolapse affect your sleep?” and “Do you use tampons/pads/firm knickers to help your prolapse problem?”), both ranked 0.67, were left in the Spanish version P-QOL for consistency across translations.

The high internal consistency measured using the Cronbach’s alpha coefficients indicates good reliability. These coefficients ranged from 0.73 to 0.87, except for the severity measures domain, which achieved a coefficient of 0.63. These are very similar to the values over 0.8 reported for the original P-QOL questionnaire [6] and other countries’ versions [18, 25, 29]. The Brazilian [21] and Thai [24] versions were the only two reporting a lower Cronbach’s alpha coefficient for the severity measures domain (0.7), which was close to our result.

The pattern of P-QOL scores observed across severity groups suggests that the questionnaire is useful for assessing QoL in women with different symptom severity. The good discrimination capability among urogenital and bowel symptom severity groups supports its high construct validity. Effect sizes were large in almost all domains for groups defined by urogenital and bowel symptom severity. These results are in line with differences reported between asymptomatic and symptomatic women using the original P-QOL [6] and other countries’ versions [18, 21–25]. Similar to the Brazilian and Persian validations [21, 25], the general health perception domain showed poor differences among groups based on symptom severity, with moderate effect sizes (0.57 and 0.55). Since the general health perception is not specifically focused on POP, it could be related to other pathological conditions or life events.

Poor correlations between P-QOL domains and POP-Q stages found in our sample merit a comment because these correlations were stronger in the original P-QOL study [6], ranging from 0.11 to 0.59, as well as in most studies with other countries’ versions [19, 22, 25]. However, results from the Australian (range –0.36, 0.28), Dutch (range –0.07, 0.12), and Persian (range 0.04, 0.32) P-QOL were similar to ours. Previous studies showed contradictory findings regarding the relationship between POP stage and QoL using other questionnaires. Some authors report worse QoL in patients with more severe POP [23, 30], while others report the opposite [5, 11]. Further research analyzing factors that help to understand this relationship is needed.

The results of this study should be interpreted taking into account some limitations. First, all women in our sample were symptomatic for POP, which differs from other validations [21–25] that included asymptomatic women as a control group. We do not have an asymptomatic group because all women were referring to treatment decisions; however, we use symptom severity to compare mean differences on P-QOL.

Secondly, POP-Q was not carried out by the research team at the same moment of the P-QOL completion. It was extracted from the medical records, but only in a few cases was there more than a 6-month interval between the P-QOL and the POP-Q (mean 3 months). This may partly explain the poor correlation between QoL domains and POP-Q. Finally, we need to remark that the cross-sectional design of the study did not allow reproducibility, responsiveness or reliability to be assessed in terms of test–retest. Future longitudinal studies of the Spanish version to test stability and sensitivity to change over time are needed.

In conclusion, these results provide considerable support to the appropriate metric properties of the Spanish P-QOL. It is easy to understand and self-administer by literate women. At the same time, comparison with the original English version shows that it is similarly reliable and valid, suggesting that the adaptation method followed might have yielded an equivalent version. Moreover, findings support the P-QOL as an appropriate and valuable tool for assessing QoL in Chilean patients within the whole severity range. The fact that it has been possible to adapt it for several countries reinforces the scope of P-QOL use in international studies.

Funding School of Nursing of Pontificia Universidad Católica de Chile.

Conflict of interest None.

References

- Mant J, Painter R, Vessey M (1997) Epidemiology of genital prolapse: observations from the oxford family planning association study. *Br J Obstet Gynaecol* 104(5):579–585
- Chen G (2007) Pelvic floor dysfunction in aging women. *Taiwan J Obstet Gynecol* 46(4):374–378
- Swift SE, Pound T, Dias J (2001) Case – control study of etiologic factors in the development of severe pelvic organ prolapse. *Int Urogynecol J* 12:187–192
- Jelovsek JE, Maher C, Barber MD (2007) Pelvic organ prolapse. *Lancet* 369(9566):1027–1038
- Swift S (2002) Current opinion on the classification and definition of genital tract prolapse. *Curr Opin Obstet Gynecol* 14(5):503–507
- Digesu GA, Khullar V, Cardozo L, Robinson D, Salvatore S (2005) P-QOL: a validated questionnaire to assess the symptoms and quality of life of women with urogenital prolapse. *Int Urogynecol J Pelvic Floor Dysfunct* 16(3):176–181. doi:10.1007/s00192-004-1225-x
- Barber M, Brubaker L, Nygaard I, Wheeler T, Schaffer J, Chen Z et al (2010) Defining success after surgery for pelvic organ prolapse. *Obs Gynecol* 114(3):600–609. doi:10.1097/AOG.0b013e3181b2b1ae.Defining
- Srikrishna S, Robinson D, Cardozo L, Cartwright R (2008) Experiences and expectations of women with urogenital prolapse: a quantitative and qualitative exploration. *BJOG* 115(11):1362–8. doi:10.1111/j.1471-0528.2008.01842.x

9. España Pons M, Puig CM (2006) Síntomas del tracto urinario inferior en la mujer y afectación de la calidad de vida. Resultados de la aplicación del King's health questionnaire. *Actas Urol Esp* 30(7):684–691
10. Digesu GA, Chaliha C, Salvatore S, Hutchings A, Khullar V (2005) The relationship of vaginal prolapse severity to symptoms and quality of life. *BJOG* 112(7):971–976. doi:10.1111/j.1471-0528.2005.00568.x
11. Fitzgerald MP, Janz NK, Wren PA, Wei JT, Weber AM, Ghetti C et al (2007) Prolapse severity, symptoms and impact on quality of life among women planning sacrocolpopexy. *Int J Gynaecol Obstet* 98(1):24–28. doi:10.1016/j.ijgo.2007.03.018
12. Barber MD (2007) Questionnaires for women with pelvic floor disorders. *Int Urogynecol J Pelvic Floor Dysfunct* 18(4):461–5. doi:10.1007/s00192-006-0252-1
13. Gotoh M (2007) Quality of life assessment for patients with urinary incontinence. *Nagoya J Med Sci* 69(3–4):123–131
14. Al-Badr A (2013) Quality of life questionnaires for the assessment of pelvic organ prolapse: use in clinical practice. *Low Urin Tract Symptoms* 5(3):121–128. doi:10.1111/luts.12006
15. Kelly CE (2003) Which questionnaires should be used in female urology practice? *Curr Urol Rep* 4(5):375–380
16. Barber MD, Kuchibhatla MN, Pieper CF, Bump RC (2001) Psychometric evaluation of 2 comprehensive condition-specific quality of life instruments for women with pelvic floor disorders. *Am J Obstet Gynecol* 185(6):1388–1395
17. Radley SC, Jones GL, Tanguy EA, Stevens VG, Nelson C, Mathers NJ (2006) Computer interviewing in urogynaecology: concept, development and psychometric testing of an electronic pelvic floor assessment questionnaire in primary and secondary care. *BJOG* 113(2):231–238. doi:10.1111/j.1471-0528.2005.00820.x
18. Digesu GA, Santamato S, Khullar V, Santillo V, Digesu A, Comio G et al (2003) Validation of an Italian version of the prolapse quality of life questionnaire. *Eur J Obstet Gynecol Reprod Biol* 106(2):184–192
19. Cam C, Sakalli M, Ay P, Aran T, Cam M, Karateke A (2007) Validation of the prolapse quality of life questionnaire (P-QOL) in a Turkish population. *Eur J Obstet Gynecol Reprod Biol* 135(1):132–135. doi:10.1016/j.ejogrb.2007.06.009
20. Lenz F, Stammer H, Brocker K, Rak M, Scherg H, Sohn C (2009) Validation of a German version of the P-QOL questionnaire. *Int Urogynecol J Pelvic Floor Dysfunct* 20(6):641–649. doi:10.1007/s00192-009-0809-x
21. De Oliveira M, Tamanini JT, Cavalcanti G (2009) Validation of the Prolapse Quality-of-Life questionnaire (P-QoL) in Portuguese version in Brazilian women. *Int Urogynecol J Pelvic Floor Dysfunct* 20(10):1191–1202. doi:10.1007/s00192-009-0934-6
22. Svihrova V, Digesu D, Svihra J, Hudeckova H, Kliment J, Swift S (2010) Validation of the Slovakian version of the P-QOL questionnaire. *Int Urogynecol J* 21(1):53–61
23. Claerhout F, Moons P, Ghesquiere S, Verguts J, De Rider D, Deprest J (2010) Validity, reliability and responsiveness of a Dutch version of the prolapse quality-of-life (P-QoL) questionnaire. *Int Urogynecol J* 21(5):569–578. doi:10.1007/s00192-009-1081-9
24. Manchana T, Bunyavejchevin S (2010) Validation of the Prolapse Quality of Life (P-QOL) questionnaire in Thai version. *Int Urogynecol J* 21(8):985–993. doi:10.1007/s00192-010-1107-3
25. Nojomi M, Digasu GA, Khullar V, Morovatdar N, Haghighi L, Alirezai M et al (2012) Validation of Persian version of the Prolapse Quality-of-Life questionnaire (P-QOL). *Int Urogynecol J* 23(2):229–233. doi:10.1007/s00192-011-1529-6
26. Aaronson N, Alonso J, Burnam A, Lohr KN, Patrick DL, Perrin E et al (2002) Assessing health status and quality-of-life instruments: attributes and review criteria. *Qual Life Res* 11(3):193–205
27. Polit DF, Beck CT (2006) The content validity index: are you sure you know what 's being reported? critique and recommendations. *Res Nurs Health* 29:489–497
28. Bump RC, Mattiasson A, Bø K, Brubaker LP, DeLancey JO, Klarskov P et al (1996) The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction. *Am J Obstet Gynecol* 175(1):10–17
29. Scarlato A, Souza CCC, Fonseca ESM, Sartori MGF, Girão MJBDC, Castro RA (2011) Validation, reliability, and responsiveness of Prolapse Quality of Life Questionnaire (P-QOL) in a Brazilian population. *Int Urogynecol J* 22(6):751–755. doi:10.1007/s00192-010-1354-3
30. Chauvin C, Chéreau E, Ballester M, Daraï E (2012) Potential relevance of pre-operative quality of life questionnaires to identify candidates for surgical treatment of genital prolapse: a pilot study. *BMC Urol* 12:9. doi:10.1186/1471-2490-12-9