

PSYCHOMETRIC PROPERTIES OF THE POP-SS, A BRIEF PROLAPSE SYMPTOM SCORE

Hypothesis / aims of study

Pelvic organ prolapse (POP), a common female condition, is symptomatic descent, from the normal anatomical position, of the vaginal walls, apex or vault (1). Women with prolapse present with a variety of symptoms. At the start of a programme of research on prolapse in 2000 a brief validated prolapse symptom scale was sought, but no suitable scale was available. We therefore developed a simple set of questions covering the symptoms caused or exacerbated specifically by prolapse which could serve as the primary outcome measure for subsequent randomised controlled trials of various interventions for POP. The seven key questions (Table) formed the basis for a POP Symptom Scale: the POP-SS. We administered the POP-SS to women in a number of research studies, generating data on its acceptability and performance. We present here the findings regarding psychometric properties of the POP-SS, including internal consistency, construct validity and sensitivity to change.

Study design, materials and methods

The study involved the analysis of data from three prolapse studies, including both symptomatic and asymptomatic women, who completed the POP-SS. A total score (range 0 to 28) is calculated by summing the seven individual symptom responses to derive the POP-SS score. Participants from the studies were: Study 1) women being followed up 12 years after giving birth, who were invited to complete a prolapse questionnaire and have prolapse assessment; Study 2) new gynaecology outpatients presenting with prolapse symptoms, randomised to pelvic floor muscle training (PFMT) or control; Study 3) women having anterior and/or posterior prolapse surgery, randomised to mesh insert or no mesh. Data from the studies were analysed to assess internal consistency, construct validity and sensitivity to change of the POP-SS. The analysis methods used were Cronbach's alpha, significance of differences in POP-SS scores between studies, and significance of difference in POP-SS scores pre- to post-intervention respectively.

Results

Internal consistency

Cronbach's alpha values ranged from 0.723 to 0.828 across the studies. This indicated that the POP-SS seven items have good internal consistency.

Construct validity

Women having surgery (Study 3) had higher POP-SS scores than those having conservative management (Study 2) (mean difference 5.0, 95% confidence interval 3.1 to 6.9), who in turn had higher scores than the asymptomatic women (Study 1) (mean difference 5.9, 95% CI 4.4 to 7.4). The table highlights where differences in POP-SS scores between studies arose. In Study 1 a low percentage responded positively to having each of the seven symptoms. Percentages were consistently higher (in excess of 50% for each symptom) in the conservative treatment group (Study 2). In the surgical group (Study 3) the percentages were highest of all studies, across all symptom questions.

Sensitivity to change

Significant differences in POP-SS score were detected after surgery and PFMT. The improvement due to surgery was significantly greater than that associated with PFMT ($z = -3.006$, $p = 0.003$).

Table: Pelvic Organ Prolapse Symptom Scale; % of women responding positively to symptom questions in each study
How often during the last four weeks have you had the following symptoms (0=never, 1=occasionally, 2=sometimes, 3=most of the time, 4=all of the time):

		Study 1 N = 435	Study 2 N = 47	Study 3 N = 66
1	a feeling of something coming down from or in your vagina?	16.2%	78.7%	89.2%
2	an uncomfortable feeling or pain in your vagina which is worse when standing?	13.0%	67.4%	70.8%
3	a heaviness or dragging feeling in your lower abdomen / tummy?	27.0%	63.8%	81.5%
4	a heaviness or dragging feeling in your lower back?	23.7%	59.6%	66.2%
5	a need to strain (push) to empty your bladder?	24.1%	56.5%	72.3%
6	a feeling that your bladder has not emptied completely?	38.1%	63.8%	87.7%
7	a feeling that your bowel has not emptied completely?	46.4%	63.8%	76.9%
*8	which of the symptoms above (questions 1 to 7) causes you most bother?	Ques. 7 39.3%	N/A	Ques. 1 40.0%

* The symptom most often identified as causing most bother is shown, with the percentage of respondents who chose this symptom. This question was used only in Study 1 and Study 3.

Interpretation of results

It has been shown that the POP-SS is a measure with good internal consistency; it is valid as a measure of prolapse symptoms as scores differed predictably between groups of women known to differ in their prolapse symptoms; finally, it is sensitive to the change brought about by treatment for prolapse, specifically surgical repair and PFMT.

Concluding message

The POP-SS is a brief symptom scale, with good internal consistency, construct validity and sensitivity to change properties, which is acceptable to women and lends itself to both the research and the clinical environment.

References

(1) Incontinence: 3rd International Consultation on Incontinence. Third ed. Paris: Health Publications Ltd.; 2005.

Specify source of funding or grant	University of Otago Postgraduate Scholarship in Obstetrics and Gynaecology; Health Services Research Committee grant, Chief Scientist Office, Scottish Government
Is this a clinical trial?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Lower South Regional Ethics Committee, New Zealand; Southern General Hospital Ethics Committee; Grampian Research Ethics Committee
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes