

## CLINICAL PAPER

# International use of the Pelvic Organ Prolapse Symptom Score: results of an online survey

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### Abstract

An online survey was used to evaluate the international use of the Pelvic Organ Prolapse Symptom Score (POP-SS) tool. The survey was sent by e-mail to 149 individuals who had previously requested the POP-SS, and 35% responded. Ninety per cent confirmed that they used the POP-SS, of which 93% were physiotherapists and 51% were located in the UK. The remainder were split between: Australia, Ireland and the USA; and the continents of Africa, Asia, and North and South America. Eighty-nine per cent of respondents used the POP-SS to monitor patients' prolapse symptoms, 78% to share information with patients, 60% to share information with other clinicians and 40% to help make treatment decisions. Seventy-one per cent of the participants included the POP-SS in patient records, 44% in audit and evaluation processes, and 18% in local clinical guidelines for the management of prolapse. With respect to the benefits of using the POP-SS in routine clinical care, 73% of respondents reported that clinical practice had improved, while 42% stated that it had enhanced patient outcomes. Finally, 57% of the participants confirmed that they used the POP-SS in their research. These findings suggest that the POP-SS has global reach, and is commonly used in high-income countries to monitor patients' prolapse symptoms and share information with patients. However, it is also reaching a number of lower- and middle-income countries as prolapse services begin to expand in these parts of the world. Increased use of this brief validated symptom score tool would be beneficial.

*Keywords:* online survey, outcome measure, pelvic organ prolapse, Pelvic Organ Prolapse Symptom Score, symptoms.

### Introduction

Pelvic organ prolapse (POP) is a common condition that affects 50% of women over the age of 50 years worldwide (Haylen *et al.* 2010). It is characterized by the symptomatic descent of one or more of the anterior vaginal wall, posterior vaginal wall, uterus (cervix) or apex of the vagina from the normal anatomical position (Haylen *et al.* 2010). Prolapse is strongly associated with childbirth, ageing and the menopause (Abrams *et al.* 2017). Women with prolapse present with

a variety of vaginal, bladder, bowel, back, abdominal and sexual symptoms. It is important that we quantify such symptoms in research and clinical practice using standardized instruments with known psychometric properties. In 2000, at the outset of a programme of investigations into the conservative management of prolapse, the present authors identified the lack of a simple symptom scoring system that could be used as a continuous primary outcome measure in randomized controlled trials. To that end, they developed the Pelvic Organ Prolapse Symptom Score (POP-SS) tool, and have published evidence of its internal consistency, construct validity, test-retest reliability and sensitivity to change

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(Hagen *et al.* 2009, 2010). Subsequently, many clinicians and practitioners have requested permission to use the POP-SS, and it is now timely to determine the impact of this scoring system on outcomes such as improvements in research and clinical practice, and ultimately, changes in health through improvements in women's pelvic floor symptoms.

## Participants and methods

### Study design

An online survey of individuals who had requested the POP-SS was undertaken in order to assess the impact of its use.

### Recruitment

Ethical approval was obtained from the School of Health and Life Sciences at Glasgow Caledonian University to conduct an online anonymous survey using Microsoft Forms (Microsoft Corporation, Redmond, WA, USA). On 3 March 2020, the survey was sent by e-mail to 149 individuals from at least 24 countries who had previously requested a copy of the POP-SS directly from the first author (S.H.). The e-mail message contained information about the survey and a link to the survey itself. The link opened the first question of the survey, which then took respondents to the subsequent questions when answered. Participation in the survey was assumed to constitute consent. A follow-up e-mail reminder was sent on 3 April 2020.

### Materials

The 14 questions in the survey (Box 1) were developed by the present authors. These focused on establishing whether or not there had been any change in clinical practice, patient record systems, clinical care pathways, patient health and research activities as a result of the research undertaken to develop and validate the POP-SS, and its subsequent use. The survey was short and easy to complete so as to encourage responses, particularly from users for whom English was not their first language. The Microsoft Forms survey platform was chosen for its ease of use, and known acceptability to health service organizations.

### Procedure

Once all the questions had been completed, which took 10 min on average, the participants were directed to a debriefing page and thanked for their participation. The survey could be submitted even if all the questions had not been

**Box 1.** Survey questions: (POP-SS) Pelvic Organ Prolapse Symptom Score; (Y) yes; (N) no; (D/K) don't know; and (N/A) not applicable

- (1) Since August 2013, have you (or your colleagues) used the POP-SS?
- (2) What is your professional background?
- (3) What is the current post you hold?
- (4) In which country are you based?
- (5) In which city are you based?
- (6) In what way have you (or your colleagues) used the POP-SS? (*Tick all that apply:*) to monitor changes in patients' symptoms; to help make treatment decisions; to share information with patients to show change; to share information with clinical colleagues; in research projects; and/or other (*please specify*).
- (7) At a service level, is the POP-SS included in: audits/service evaluations; clinical guidelines; and/or patient records systems? (*Y, N, D/K or N/A for each.*)
- (8) In your opinion, has using the POP-SS improved clinical practice in your area? (*Y, N, D/K or N/A.*)
- (9) If you answered yes, please provide more details below about how using the POP-SS improved clinical practice in your area.
- (10) In your opinion, has using the POP-SS improved outcomes for patients in your area? (*Y, N, D/K or N/A.*)
- (11) If you answered yes, please provide more details about how using the POP-SS improved outcomes for patients in your area.
- (12) In your opinion, has using the POP-SS been beneficial for your research? (*Y, N, D/K or N/A.*)
- (13) If you answered yes, please provide details below about how using the POP-SS has been beneficial for your research.
- (14) Which version(s) of the POP-SS have you used? (*Tick all that apply:*) English; Amharic; Turkish; Chinese; and/or other (*please specify*).

completed. All information collected was treated in accordance with the principles of the EU General Data Protection Regulation. Analysis was carried out in the Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, WA, USA).

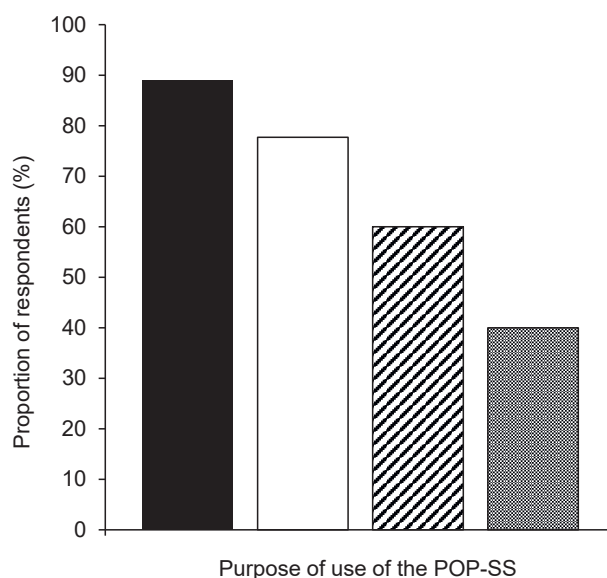
## Results

Of the 149 e-mails sent, seven were undeliverable. Fifty responses (35%) from a total of 12 countries were received to the remaining 142. The vast majority of respondents (90%, 45/50) confirmed that they or their colleagues had used the POP-SS. The remainder (10%, 5/50) were taken directly to the end of the survey after reporting that they had not done so. Of those who had used the POP-SS (hereafter referred to as “users”), the vast majority were physiotherapists (93%, 42/45), one was a nurse (2%, 1/45), one was a doctor (2%, 1/45) and one did not answer the question. Fifty-six per cent (25/45) described themselves as having a senior clinical or specialist role in female pelvic health, 2% (1/45) as a company director and 2% (1/45) as a practice owner; 40% (18/45) did not state their role. Geographically, 51% of users (23/45) were based in the UK, 13% in Ireland (6/45), 16% in Australia (7/45) and 7% in the USA (3/45); approximately 13% (6/45) were from other countries (Table 1).

Responses relating to the reason for using the POP-SS (Fig. 1 and Table 2) indicated that 89% (40/45) did so in order to monitor patients' symptoms of POP, 78% (35/45) to share information with patients, 60% (27/45) to share information with clinicians and 40% (18/45) to help make decisions about treatment. Users from Australia, England and the USA all reported that they had used the POP-SS for all the purposes listed. In the majority of countries, including lower- and middle-income ones such as Brazil and Nepal, respondents used the POP-SS to monitor patients' symptoms, share information with patients to demonstrate change and share information with clinicians. Only a minority of countries used the tool to help make decisions about treatment.

**Table 1.** Countries where Pelvic Organ Prolapse Symptom Score (POP-SS) users were based

Country	Percentage of POP-SS users per country (n/N)
UK:	
England	42% (19/45)
Wales	4% (2/45)
Scotland	4% (2/45)
Australia	16% (7/45)
Ireland	13% (6/45)
USA	7% (3/45)
Brazil	2% (1/45)
Canada	2% (1/45)
Ethiopia	2% (1/45)
India	2% (1/45)
Nepal	2% (1/45)
Turkey	2% (1/45)



**Figure 1.** Percentage of respondents reporting the purpose of the use of the Pelvic Organ Prolapse Symptom Score (POP-SS): (■) to monitor patient symptoms; (□) to share information with patients; (▨) to share information with clinicians; and (▩) to help make treatment decisions.

Users were asked whether the POP-SS was employed at a service level. Just over 70% (32/45) included the POP-SS in patient records, while 44% (20/45) incorporated it in audit and evaluation processes. Furthermore, 18% (8/45) reported that it was included in their local clinical guidelines for the management of POP (Fig. 2 and Table 3). Users from Australia, England and the USA all reported that they had used the POP-SS for all the service-level purposes that were listed. The respondents from Ethiopia and Brazil reported only using the POP-SS in patient records and service evaluations/audits, respectively.

When users were asked whether the POP-SS had led to improvements in clinical practice, 73% (33/45) reported that, in their opinion, clinical practice had been improved through its use (Fig. 3 and Table 4). A senior physiotherapist from Nepal commented that:

“[I]t helped in assessing the symptoms of POP[,] and helps in monitoring the change in symptoms after intervention.”

A physiotherapist from Brazil reported that:

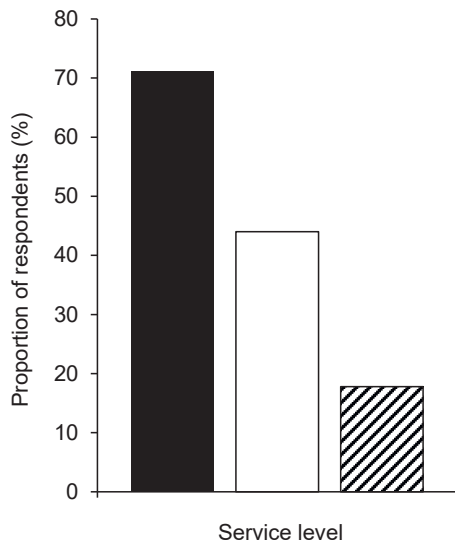
“I like that it [has] bowel and bladder [symptoms], they are more usually seen in my clinical practice.”

A senior physiotherapist from Australia said that:

“[The POP-SS is an] effective and measurable evaluation of improvements in symptoms.”

**Table 2.** Purpose of the use of the Pelvic Organ Prolapse Symptom Score by country of the respondent

Purpose	Percentage answering yes (n/N)	
	Total	Total by country
To monitor patient symptoms	89% (40/45)	Australia [86% (6/7)] Brazil [100% (1/1)] Canada [100% (1/1)] England [100% (19/19)] Ireland [100% (6/6)] Nepal [100% (1/1)] Scotland [50% (2/2)] USA [100% (3/3)] Wales [100% (2/2)]
To share information with patients	78% (35/45)	Australia [86% (6/7)] Brazil [100% (1/1)] Canada [100% (1/1)] England [95% (1/1)] Ireland [67% (4/6)] Scotland [50% (2/2)] USA [67% (2/3)] Wales [100% (2/2)]
To share information with clinicians	60% (27/45)	Australia [71% (5/7)] Brazil [100% (1/1)] Canada [100% (1/1)] England [58% (11/19)] Ireland [83% (5/6)] Nepal [100% (1/1)] Scotland [100% (2/2)] USA [33% (1/3)]
To help make treatment decisions	40% (18/45)	Australia [57% (4/7)] Brazil [100% (1/1)] England [37% (7/7)] Ireland [67% (4/6)] USA [67% (2/3)]



**Figure 2.** Percentage of respondents reporting the inclusion of the Pelvic Organ Prolapse Symptom Score (POP-SS) at a service level: (■) included in record systems; (□) included in audits/service evaluations; and (▨) included in clinical guidelines.

Furthermore, it could also contribute to care pathway decision-making. This was corroborated by a physiotherapy manager from Ireland, who commented that:

“[The POP-SS] helps clinicians and patients make decisions about conservative treatment options and referral for surgical opinion.”

Finally, a senior physiotherapist and team leader from England reported that:

“[The POP-SS is] making the team think about the outcome measures and measure the success of physiotherapy.”

Users were asked whether the POP-SS had led to improved outcomes for patients. Almost half (42%, 19/45) said that, in their opinion, the POP-SS had done so (Fig. 3 and Table 4). Users from Australia, Brazil, Canada, the UK, Ireland and the USA reported improvements in both clinical practice and patient outcomes, while Wales and Nepal only reported improvements in clinical practice (Table 4). A senior physiotherapist from Australia commented that:

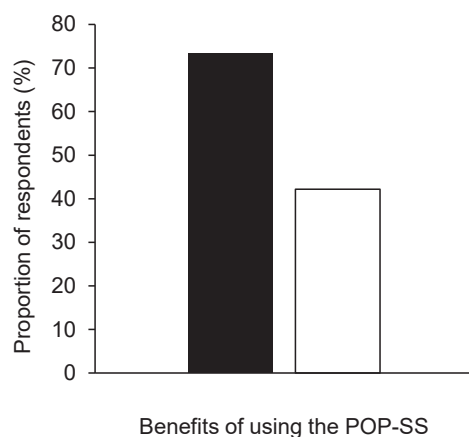
“[I]t helps to motivate patients by showing them the changes.”

A physiotherapist in Brazil noted that:

“I think they can [see] in other ways the change with the treatment.”

**Table 3.** Percentage using the Pelvic Organ Prolapse Symptom Score at a service level by country of the respondent

Service-level use	Percentage answering yes (n/N)	
	Total	Total by country
Included in record systems	71% (32/45)	Australia [71% (5/7)] England [90% (17/19)] Ethiopia [100% (1/1)] Ireland [83% (5/6)] Scotland [100% (2/2)] USA [67% (2/3)]
Included in audits/evaluations	44% (20/45)	Australia [29% (2/7)] Brazil [100% (1/1)] England [63% (12/19)] Scotland [50% (1/2)] USA [67% (2/3)] Wales [100% (2/2)]
Included in clinical guidelines	18% (8/45)	Australia [29% (2/7)] England [16% (3/19)] Ireland [33% (2/6)] USA [33% (1/3)]



**Figure 3.** Percentage of respondents reporting benefits derived from using the Pelvic Organ Prolapse Symptom Score (POP-SS): (■) clinical practice has improved; and (□) improved outcome for patients.

A physiotherapist in England commented that:

“It encourages the patients to do the pelvic floor exercises if the score reduces.”

When asked whether the POP-SS had been beneficial to their research, 69% (31/45) of users reported that this question was not applicable to them. Of the remainder, 57% (8/14) confirmed that their research had benefitted from employing it; these individuals were based in England, Wales, Ethiopia, India, Turkey and Nepal (Table 5). Fourteen per cent (2/14) of this subgroup reported that there had been no research benefit, and 29% (4/14) said that they did not know. A physiotherapist from Nepal stated that:

**Table 4.** Percentage of users reporting benefits derived from using the Pelvic Organ Prolapse Symptom Score by country of the respondent

Reported benefits	Percentage answering yes (n/N)	
	Total	Total by country
Clinical practice has improved	73% (33/45)	Australia [86% (6/7)] Brazil [100% (1/1)] Canada [100% (1/1)] England [79% (15/19)] Ireland [83% (5/6)] Nepal [100% (1/1)] Scotland [50% (1/2)] USA [67% (2/3)] Wales [50% (1/2)]
Improved outcome for patients	42% (19/45)	Australia [57% (4/7)] Brazil [100% (1/1)] Canada [100% (1/1)] England [37% (7/19)] Ireland [33% (2/6)] Scotland [100% (2/2)] USA [67% (2/3)]

**Table 5.** Percentage of users (*n/N*) reporting benefits derived from using the Pelvic Organ Prolapse Symptom Score in research by country of the respondent

Total	Total by country
57% (8/14)	England [11% (2/19)] Wales [100% (2/2)] Ethiopia [100% (1/1)] India [100% (1/1)] Nepal [100% (1/1)] Turkey [100% (1/1)]

“I have used [the POP-SS] in my research to see the symptoms of POP among women. It helped to address the symptoms difference among women with different severity.”

Ninety-three per cent (42/25) reported using the English version of the POP-SS, while 2% (1/45) each used the Amharic, Nepali and Turkish translations, respectively.

## Discussion

The present survey found that the POP-SS has a worldwide reach, and is currently being used in at least 12 different countries within Africa, Asia, Australasia, Europe, and North and South America. Among the respondents, the main users were physiotherapists, and the majority were based in England; however, the POP-SS appears to be employed frequently in Australia, Ireland and the USA. The English version of the POP-SS is predominantly used, but small numbers of users also reported employing the Amharic, Chinese, Nepali and Turkish translations.

A large proportion of respondents reported using the POP-SS to: monitor the symptoms of POP; share information with their patients about progress following interventions; and share information with other clinicians.

Furthermore, the POP-SS had been used in clinical audits and evaluations of treatment outcomes for prolapse in half of the countries represented. Similarly, half had included the POP-SS in patient record systems. Fewer users in lower- and middle-income countries (i.e. Ethiopia, Nepal and Turkey) had included the POP-SS in clinical guidelines, or audit and service evaluations, which may reflect the early stages of the POP services that are available in these places.

The majority of users employing the POP-SS reported that clinical practice had improved because of its use, and to a lesser extent, this had led to better outcomes for patients. The latter result may reflect the difficulty in quantifying the

impact on patients' symptoms of using the POP-SS as part of a treatment programme or service without specifically measuring this variable, and distinguishing the effect from that of the treatment received.

The results of the present survey demonstrate that a high proportion of practitioners value the use of the POP-SS as a patient-reported outcome measure. In their opinion, it has helped to guide appropriate treatment (e.g. deciding between surgical and non-surgical interventions), and to alleviate patients' fears about their condition by educating them about its signs and symptoms. The tool also encourages patients to engage with the intervention because it is a powerful motivational aid that demonstrates improvements from baseline and monitors success.

The POP-SS was used by a smaller proportion of users for research purposes. Interestingly, of the eight who did so, half were from lower- and middle-income countries. This could mean that clinicians may have undertaken research to translate and validate the tool prior to its use in places where English is not the first language.

The main strengths of the present study were that it was designed to evaluate the real-world utility of the POP-SS in clinical practice and research, and to gain important information about the benefits that the tool can bring to services and patients from a practitioner's viewpoint. This survey was designed to be accessible and easy to use across a number of countries, particularly those where English is not the first language. To the best of the present authors' knowledge, other commonly used prolapse outcome measures, such as the Pelvic Floor Distress Inventory (Barber *et al.* 2011) and the International Consultation on Incontinence Questionnaire Vaginal Symptoms Module (Price *et al.* 2006), have not been evaluated for their utility for practice in a similar way; the focus has been solely on the establishment of the psychometric properties of these tools.

The survey response rate of 35% is very similar to the 37% mean response rate found in a review of e-mail surveys (Sheehan 2001), and is higher than that of a more-recent survey relating to pelvic floor muscle training (PFMT) services (23%) conducted using an online platform (Reed *et al.* 2020). However, the response rate was undoubtedly influenced by the impact of the COVID-19 pandemic, which was placing serious pressure on clinical staff worldwide at the time of the study. Some individuals e-mailed to say that they were unable to participate because they were dealing with COVID-19-related issues.

Because of the anonymous nature of the survey, the present authors were not able to compare the characteristics of the respondents and non-respondents. Therefore, the convenience sample of individuals who responded may not be representative of all users. Only those who had directly requested the POP-SS from the first author (S.H.) were included, but it could have been accessed indirectly in other ways. Therefore, it is highly likely that the reach of the POP-SS is greater than reported in this study, but the perceived usefulness of the tool may differ in other contexts not represented here.

The original POP-SS was developed by involving women with prolapse, and assessing their understanding of it and the relevance of the questions. However, further research to gather data about patients' experiences of using POP-SS in the context of their care would be useful in order to supplement the results of the present survey. The authors are currently involved in translating the POP-SS into Samoan, and conducting interviews with Samoan women about their experience of using it.

In summary, the present findings suggest that there are potential benefits for practitioners, healthcare managers and women from around the world from inclusion of the POP-SS in the management of prolapse. Greater use of this brief validated symptom score should be encouraged.

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