2008

Measuring faecal incontinence in Australia

Janet Sansoni  
*University of Wollongong, jans@uow.edu.au*

Nick Marosszeky  
*Macquarie University, marossz@uow.edu.au*

Graeme Hawthorne  
*University of Melbourne*

Emily Sansoni  
*Australian National University, University of Wollongong, emily_sansonii@uow.edu.au*

Publication Details

Measuring faecal incontinence in Australia

Abstract

Background: The Wexner Faecal Continence Grading Scale and some faecal incontinence items were included in a population-based survey (N=3015) to obtain current prevalence estimates for Australia and to examine the psychometric properties of these items.

Methods: The additional faecal incontinence items covered urgency, frequency, soiling and bowel patterns. Examination of the psychometric properties of these items included: item endorsement and discrimination, item-total correlations, internal consistency reliability and exploratory factor analysis.

Results: The Cronbach's alpha for the standard Wexner was $\alpha = 0.57$ which is considered unacceptable. The item concerning flatus had a low corrected item-total correlation (0.20). Removal of this item improved the reliability to 0.77.

The flatus item from the Wexner may confound prevalence estimates. The prevalence estimates were 8% if flatus was excluded but rose to 35% when included.

The exploratory factor analysis indicated a 3 factor structure, explaining 61% of the variance. The first factor appeared to be a 'general faecal incontinence' factor, as all items were concerned with leakage and soiling. Flatus and bowel pattern items loaded on the second factor. The only item that loaded on the third factor is 'frequency of bowel motions' and this item had low loadings on the other two factors.

Following removal of items with poor properties a 5-item scale resulted, the Revised Faecal Incontinence Scale (RFIS).

Conclusion: The RFIS has superior psychometric properties to the standard Wexner, it includes an item associated with urge incontinence and could be considered by those looking for a short, reliable and valid scale of faecal incontinence for older age groups. Further research is examining the validity of this measure in clinical settings.

Keywords

measuring, faecal, poster, australia, incontinence

Publication Details

Measuring Faecal Incontinence in Australia

Study Aims

1. Obtain current prevalence estimates for faecal incontinence in a community population survey (N=3015) in Australia.
2. Assess the psychometric properties of the Wexner Faecal Incontinence Grading Scale and other faecal incontinence items that were included in the survey to assess prevalence.

Introduction

1. A need for current prevalence data for faecal incontinence in Australia is probably underestimated as this survey only includes those in community residences. It should be noted that incontinence prevalence in the 75+ age group is probably underestimated as this survey only includes those in community residences.

Methods

• For prevalence estimates the data was weighted by probability of selection and ABS 2001 census data to ensure representation of the community population survey (N=3015) in Australia.
• For the psychometric analyses unweighted data was used for all adults over 18 years of age.
• All faecal items were pooled for analysis.
• Psychometric properties were initially examined using Classical Test Theory approaches. This included examination of item descriptive statistics, item endorsement and discrimination, item-total correlations, internal consistency reliability and exploratory factor analysis.
• Modern Test Theory approaches (Item Response Theory) (IRT) were also used to examine item properties. IRT is used to find the best fit of the data to a model or a process commonly used to shorten scales.

Survey and Participants

Sampled all locations throughout South Australia with 1,000+ inhabitants. Sampling from ABS collection districts, using a random starting point and every 4th dwelling. Response rate = 72%. 4,700 households were selected with 3015 interviews. The sample comprised a total of 1202 males and 1713 females. The Wexner Scale (Jorge and Wexner, 1993) was included in the survey as it is a commonly used faecal incontinence measure and was recommended by Thomas et al. (2006) in the (Australian) Continence Outcomes Measurement Suite Project.

Additional items, developed by a Urology-accented, included faecal urgency, frequency, soiling and bowel patterns – it was noted that the Wexner does not include an item on faecal urgency.

Results 1: Item-Total Correlations

Corrected item - total correlations and Cronbach’s alpha if the item was deleted for each item of the Wexner Scale

<table>
<thead>
<tr>
<th>Item</th>
<th>Corrected Item - Total Correlation</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Leak Solid)</td>
<td>0.52</td>
<td>0.46</td>
</tr>
<tr>
<td>(Leak Liquid)</td>
<td>0.53</td>
<td>0.44</td>
</tr>
<tr>
<td>(Leak Gas)</td>
<td>0.25</td>
<td>0.77</td>
</tr>
<tr>
<td>(Wear Pad)</td>
<td>0.39</td>
<td>0.50</td>
</tr>
<tr>
<td>(Alter Lifestyle)</td>
<td>0.42</td>
<td>0.50</td>
</tr>
</tbody>
</table>

The internal consistency for the Wexner was found to be low at 0.57. This above table shows that the (leak gas) item has a low corrected item - total correlation, just above the acceptable range of 0.20 (Streiner and Norman, 2003). The Cronbach’s alpha data also suggests that if the leak gas item were deleted then Cronbach’s alpha moves to an acceptable level of 0.77.

Conclusions

1. The Wexner flatus item should be excluded from epidemiological studies as it confounds prevalence estimates. Since flatus is common in the community, and the flatus item is poorly worded, its equal weighting with other faecal leakage items would also present problems for clinical applications.
2. The RFIS has superior psychometric properties to the standard Wexner and includes an item associated with faecal urge incontinence.
3. It is noted that these scales were derived from a statistical modelling exercise and are currently being further assessed in clinical settings. The response categories for these items are the same as for the Wexner.

Acknowledgements

Study funded by the Australian Government Department of Health and Ageing as part of the National Continence Management Strategy.