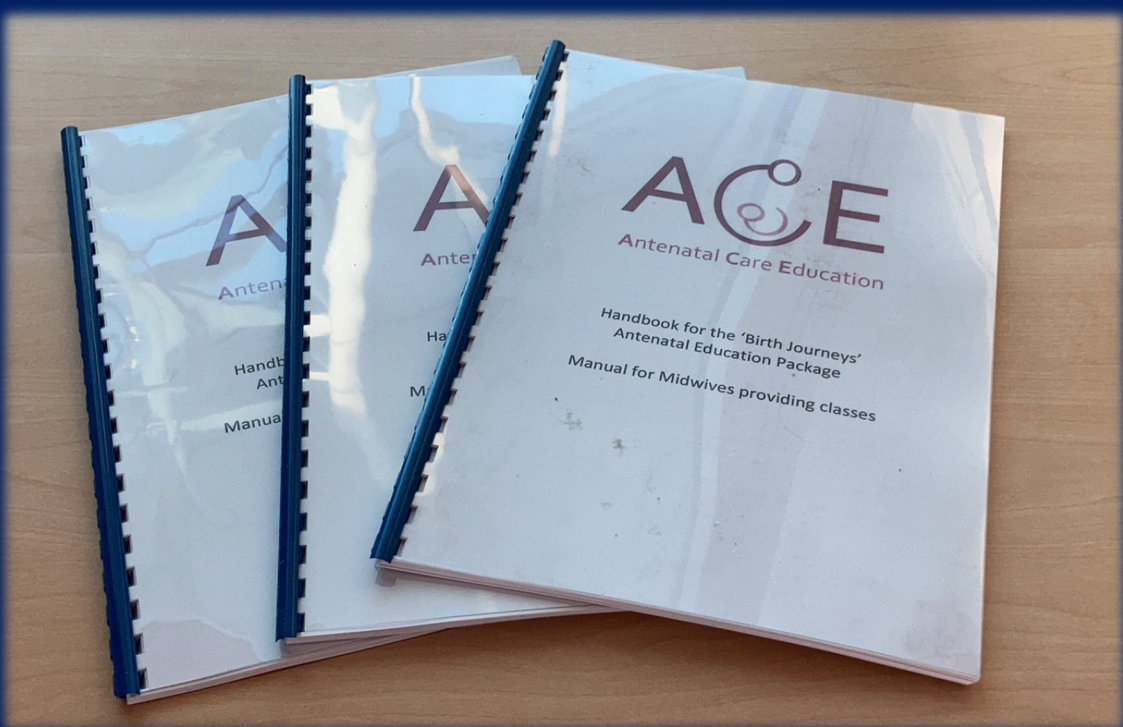


Great Expectations: developing and validating a new tool for measuring expectations of labour and birth



Miriam Toolan¹, Mariusz T Grzęda², Anna Davies¹, Mary Lynch¹, Abi Merriel^{3,1}
¹University of Bristol, Bristol, United Kingdom. ²King's College London, London, United Kingdom. ³University of Liverpool, Liverpool, United Kingdom



BACKGROUND

A birth expectation-reality mismatch is increasingly being recognised as a risk factor for post-traumatic stress disorder in new parents. Antenatal education classes can help address unrealistic birth expectations, however measuring expectations is not straightforward. Several tools already exist for measuring expectations, but many are narrow in scope, focusing exclusively on anxieties or worries about labour for example. Feedback from initial patient and public involvement (PPI) suggested that some of the scales were felt to be quite negative in outlook. Our aim was to develop and validate a new - neutral - tool for measuring expectations of labour and birth for use before and after a newly designed antenatal education class within the NHS.

METHODS

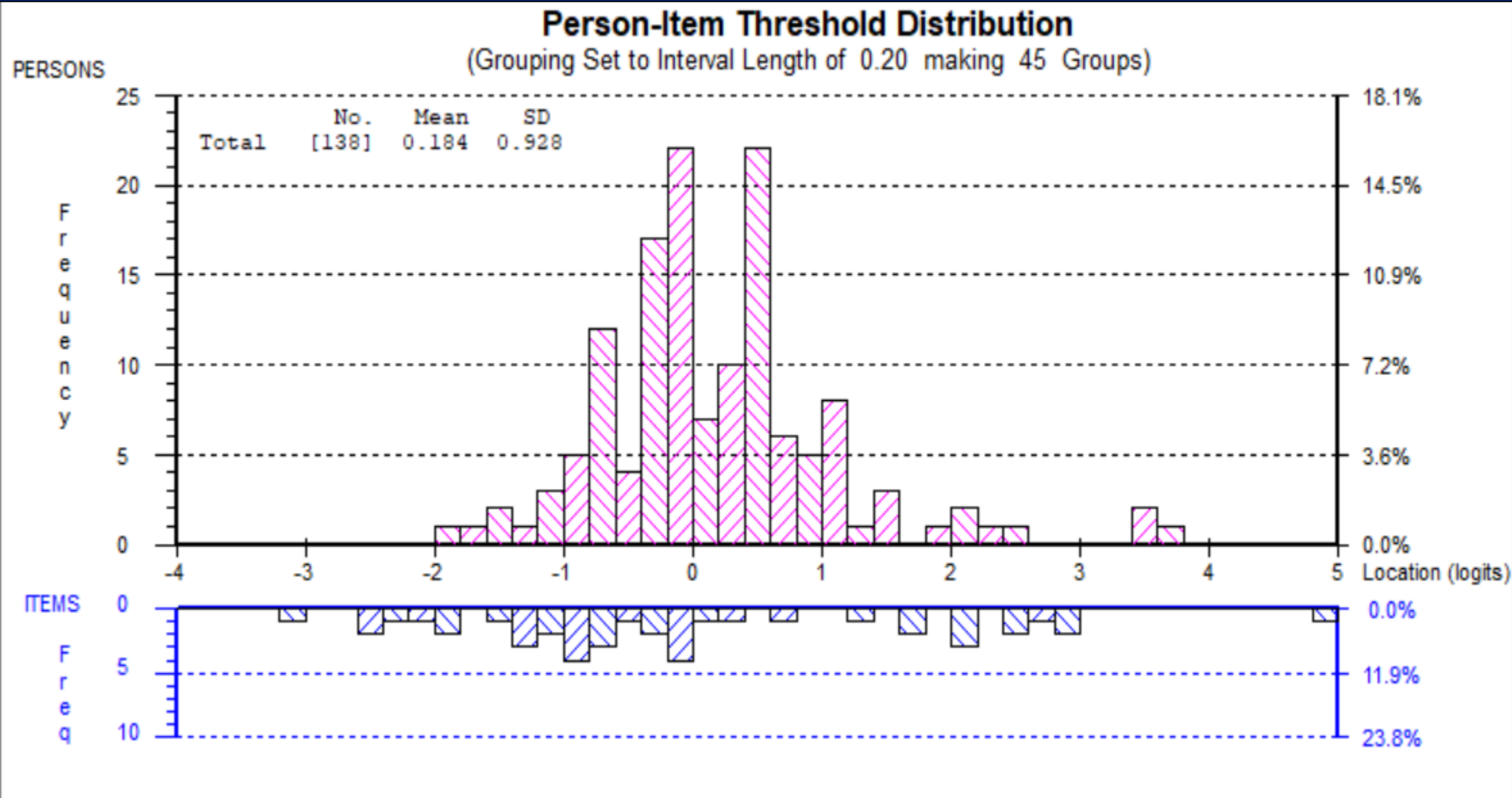
Stage 1 – A systematic review of the literature surrounding expectations of labour and birth, and generation of key themes for inclusion in the questionnaire.

Stage 2 – Think-aloud interviews with 14 women to identify any areas that had been missed, and to check that all included items were meaningful to pregnant women in the UK.

Stage 3 – Online piloting of our questionnaire with 151 participants comparing stability of responses over time. Responses were also compared with those given to another validated expectations questionnaire currently in clinical use.

Stage 4 – Scale validation within the Rasch measurement framework questionnaire and estimating responsiveness of the scale to due to intervention (labour course). Partial Credit Model, an extended version of Rasch Analysis (adjusting for ordinal items scales with more than two categories), was applied .

Person-Item Threshold Distribution



Item locations and fit statistics

Label	Location	SE	FitResid
1. Enjoy giving birth	0.462	0.097	-0.238
2.Go into labour naturally	0.202	0.126	1.126
3.Manage well with pain during labour/post-op	0.460	0.114	-0.353
4. Stay in one setting (e.g. home, midwife-led birth suite, central delivery suite) once in active labour	-0.529	0.133	1.003
5. Deliver your baby within 24 hours of going into labour	0.339	0.133	0.737
6. Go home with your baby within 24 hours of delivery	-0.287	0.107	0.390
7. Be able to make clear decisions in labour	-0.693	0.115	0.093
8. Be able to make the birth environment your own	-0.121	0.111	-0.357
9. Length of labour (too long or too short)	0.617	0.116	-0.253
10. Not understanding what's happening around me	-0.194	0.113	-0.741
11. Feeling overwhelmed with emotion	-0.573	0.108	0.765
12. Needing an emergency procedure (e.g. forceps delivery)	0.317	0.110	0.799

Effect sizes observed within a sample of 110 women participating in the study

Effect size	categorization		n	%
ES<=-0.8	large negative	significant	7	6%
_-0.8<ES<=-0.5	medium negative	significant	13	12%
_-0.5<ES<=-0.2	small negative	significant	14	13%
_-0.2<ES<0.2	negligible	not significant	16	15%
0.2<=ES<0.5	small positive	significant	16	15%
0.5<=ES<0.8	medium positive	significant	14	13%
0.8<=ES	large positive	significant	30	27%
Total	-	-	110	100%

Some hints on Rasch Analysis.
Rasch Analysis allows to convert raw scores into true linear metric units of item difficulty and person ability. Here person ability measures represent levels of expectations to labour. And birth
The ability-difficulty difference reflects the probability that a given subject passes a given item.
"Fit" indexes are also estimated, relating to the consistency of the response profile (it is expected that the higher the ability-difficulty difference, the more a "pass" response, i.e. higher score, is observed).

RESULTS

- The fit to the theoretical Rasch model was tested iteratively.
- After several iterations the 12 best functioning items were left, that together comply very well to the Rasch criteria (overall item-trait interaction test: chi- square=24.43 df=24 p=0.437; PSI=0.81).
- After the Rasch analyses were finished, the traditional Cronbach's alpha coefficient was calculated for the scale. The obtained value of this reliability coefficient being 0.78 suggests good overall scale consistency.
- The proposed final set of 12 items also demonstrates responsiveness to change: the average estimated effect size between pre- and post-intervention was 0.35.
- There was good test-retest reliability. Finally the items make good clinical sense, covering a range of themes regarding labour and birth.

There was a high level of diversity observed in the pattern of changes in expectations between pre- and post- course time points. Overall, 34 (31%) of women decreased their results on the expectation scale following the course, while 60 (55%) increased their expectation. Only 16 (15%) of women showed no change following the course. This result suggests that the scale is highly sensitive to the change in expectations in both directions.

CONCLUSIONS

Our 12-item questionnaire shows good sensitivity, reliability, and validity for measuring expectations of birth. We hope its short length and neutral questions will facilitate its use both in research and in wider clinical practice.