Revised Professional Practice Environment (RPPE)

Pragmatic Testing and Content Validity Data

Summary of Pragmatic properties

The RPPE scale had an overall **objective pragmatic score** of **16** out of **20**. According to this objective pragmatic assessment, the RPPE scale's strengths include being available in the public domain, having acceptable language, not requiring training for administration, and having less than 50 items. The RPPE scale lost scores because not enough instructions exist for interpreting scores.

Based on two RNAO stakeholders, the RPPE scale was rated **3** out of **4** for **likelihood to use**. The RPPE scale has an overall **stakeholder facing assessments** score of **18.5** out of **24**.
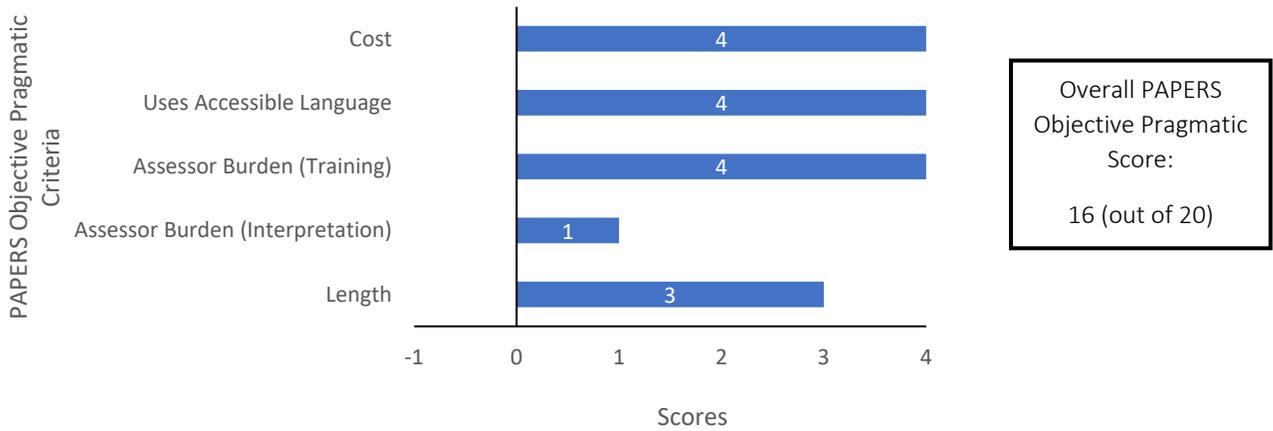
Tool Pragmatic Properties

Tools were assessed for pragmatic properties with the PAPERS tool (Stanick et al. 2019); a validated tool for measuring a tool's acceptability, ease of use, appropriateness, and usefulness. Objective pragmatic properties were assessed by two research assistants independently and with consensus for each tool. Stakeholder facing pragmatic properties were assessed independently by at least two stakeholders (e.g., champions) for each tool. A mean score was calculated from participants' responses for each of the stakeholder facing PAPERS survey questions.
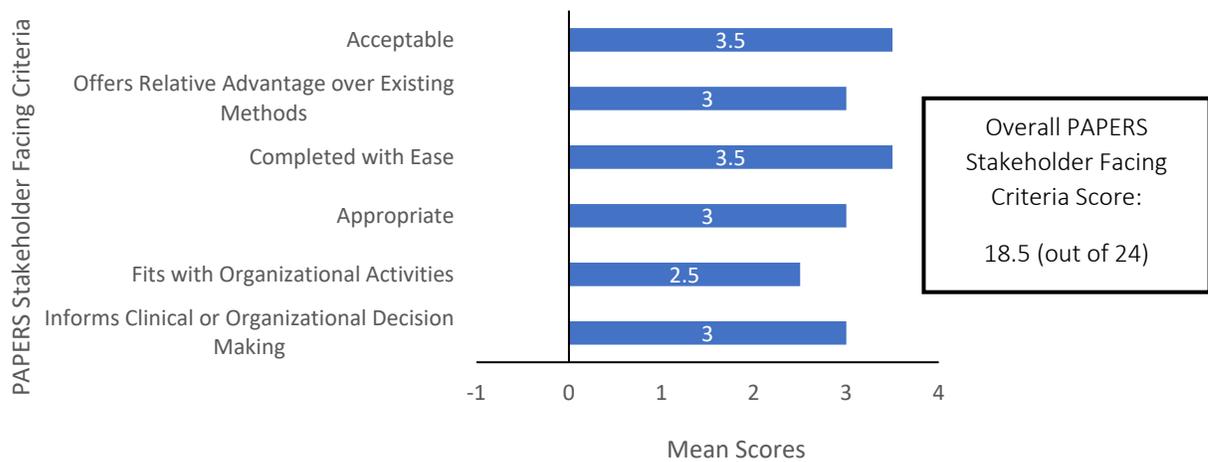
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*PAPERS Objective Pragmatic Criteria - Scoring details below*

PAPERS Objective Pragmatic Criteria:

Criteria	Score
Cost	4
Uses Accessible Language	4
Assessor Burden (Training)	4
Assessor Burden (Interpretation)	1
Length	3

Scores (axis: -1, 0, 1, 2, 3, 4)

Overall PAPERS Objective Pragmatic Score:

16 (out of 20)

PAPERS Stakeholder Facing Criteria (n = 2 stakeholders) - Scoring details below

PAPERS Stakeholder Facing Criteria:

Criteria	Mean Score
Acceptable	3.5
Offers Relative Advantage over Existing Methods	3
Completed with Ease	3.5
Appropriate	3
Fits with Organizational Activities	2.5
Informs Clinical or Organizational Decision Making	3

Mean Scores (axis: -1, 0, 1, 2, 3, 4)

Overall PAPERS Stakeholder Facing Criteria Score:

18.5 (out of 24)

Likelihood to Use the Tool in Practice (n = 2 stakeholders) - Scoring details below
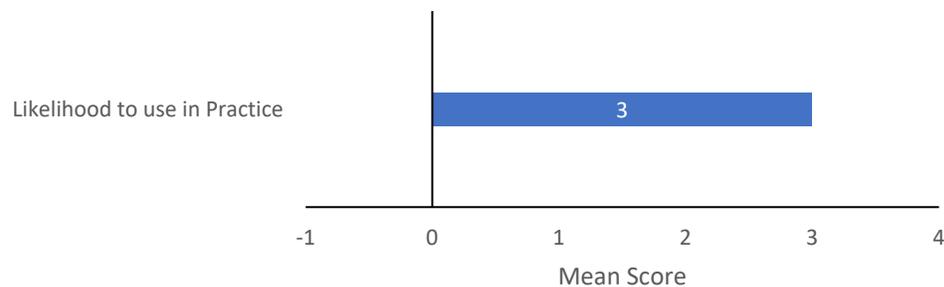
Content Validity

Summary of Content Validity

According to our assessment using an adapted version of a checklist by Mokkink et al. (2010), the RPPE scale has evidence of content validity.

Content validity refers to the degree to which the content of the tool is an adequate reflection of the construct being measured. In the case of the Revised Professional Practice Environment (RPPE) scale, this refers to the extent that individuals can use the RPPE scale to assess barriers/facilitators to knowledge use and monitor knowledge use according to the following components:

- Handling disagreement and conflict
- Leadership and autonomy in clinical practice
- Internal work motivation
- Control over practice
- Teamwork
- Communication about patient
- Cultural sensitivity
- Staff relationships with physicians

General Requirements	Yes	No
1. Was there an assessment of whether all items refer aspects of the construct to be measured?	X	
2. Was there an assessment of whether all items are relevant for the study population? (e.g., age, gender, disease characteristics, country, setting)	X	
3. Was there an assessment of whether all items are relevant for the purpose of the measurement instrument? (discriminative, evaluative, and/or predictive)	X	
4. Was there an assessment of whether all items together comprehensively reflect the construct to be measured?	X	

Adapted from: Mokkink, L.B., Terwee, C.B., Knol, D.L., Stratford, P.W., Alonso, J., Patrick, D.L., Bouter, L.M. and De Vet, H.C. (2010). The COSMIN checklist for evaluating the methodological quality of studies on measurement properties: a clarification of its content. *BMC medical research methodology*, *10*(1), 1-8.

According to our assessment using an adapted version of a checklist by Mokkink et al. (2010), the RPPE scale has evidence of content validity.

Content Validity Requirement 1:

- The RPPE tool was developed based on the Professional Practice model which was inductively created by the Massachusetts General Hospital (MGH) in Boston to create a shared vision for six clinical discipline and a comprehensive understanding of the components guiding professional practice in their hospital. The RPPE tool is also based on extant literature of studies examining the working environment of Magnet hospitals (Erickson et al., 2009).
- The RPPE tool was based on an earlier instrument called the Professional Practice Environment tool (40 items) which the authors report to have been evaluated for readability, clarity, meaning and congruence by seven staff at MGH (Erickson et al., 2009).

- The RPPE tool was constructed to reflect the revisions to the strategic goals of MGH in 2005 and was reviewed and revised by nursing leaderships at MGH. Revisions include adding two new items to more accurately identify how conflict occurs in health care environments (42 items). The final RPPE consists of 39 items are three items were eliminated due to low factor loadings found after principal component analysis (Erickson et al., 2009).

Content Validity Requirement 2:

- The original Professional Practice Environment tool was evaluated by seven clinical staff and the RPPE tool was evaluated by nursing leadership at MGH for readability, clarify, meaning, and congruence (Erickson et al., 2009).
- Psychometric testing of the RPPE tool was conducted on a sample of 1550 MGH employees. The authors split the sample in half to conduct a cross-validation procedure, whereas half of the sample assessed whether the eight original components could be derived in one sample ($n = 775$) and validated in the another ($n = 775$). The two sample subsets did not significantly vary in terms of age, sex, highest educational level, number of years in the profession, and number of years at MGH (Erickson et al., 2009).

Content Validity Requirement 3:

- The RPPE tool's items for each component were verified through a principal component analysis and validated by a second principal component analysis. The findings of both principal component analysis found that the same eight components measure a professional practice environment, and that each component were measured by the same items in both analyses (Erickson et al., 2009).

Content Validity Requirement 4:
- According to the tool developers, the RPPE tool is a comprehensive instrument because it measures all the professional characteristics that are indicated by studies examining Magnet hospital studies. These characteristics includes professional staffs' ability to handle disagreement and conflict using a problem-solving approach, their internal work motivation, communication about patients, and cultural sensitivity (Erickson et al., 2009).

Limitations:

- One limitation of the RPPE tool's initial validation study is that the validity of the tool was only assessed at one hospital (MGH), which makes it difficult to ascertain whether the components of the tool are reflective of other settings, especially ones that have less resources (Erickson et al., 2009).

References

Erickson, J. I., Duffy, M. E., Ditomassi, M., & Jones, D. (2009). Psychometric evaluation of the revised professional practice environment (RPPE) scale. *JONA: The Journal of Nursing Administration*, *39*(5), 236-243.

Mokkink, L.B., Terwee, C.B., Knol, D.L., Stratford, P.W., Alonso, J., Patrick, D.L., Bouter, L.M. and De Vet, H.C. (2010). The COSMIN checklist for evaluating the methodological quality of studies on measurement properties: a clarification of its content. *BMC medical research methodology*, *10*(1), 1-8.

Stanick, C. F., Halko, H. M., Nolen, E. A., Powell, B. J., Dorsey, C. N., Mettert, K. D., Weiner, B. J., Barwick, M., Wolfenden, L., Damschroder, L. J., & Lewis, C. C. (2019, Nov 20). Pragmatic measures for implementation research: development of the Psychometric and Pragmatic Evidence Rating Scale (PAPERS). *Translational Behavioral Medicine*. https://doi.org/10.1093/tbm/ibz164