INPLASY PROTOCOL

To cite: Romli et al. A Systematic Review on Psychometric Properties of Play Instruments for Occupational Therapy Practice. Inplasy protocol 202040156. doi: 10.37766/inplasy2020.4.0156

Received: 23 April 2020

Published: 23 April 2020

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Support: **None**

Review Stage at time of this submission: **Data analysis.**

Conflicts of interest:
Both author declare no conflict of interest.

A Systematic Review on Psychometric Properties of Play Instruments for Occupational Therapy Practice

Romli, MH[1]; Wan Yunus, F[2].

Review question / Objective: **What are the available occupational therapy instruments to evaluate play and its psychometric evidence?**
Condition being studied: **Varied. Any condition or population group is considered as long as the study investigate psychometric properties of play instrument.**
Information sources: **Duplicates will be removed initially before the screening process. The first author will screen the title for eligibility according to the pre-determined criteria followed by both authors involved in the abstract and full text screening conducted independently. The pre-consensus agreement will be done by comparing the final accepted articles between the two authors. Any disagreements will be resolved through discussion between the two authors until consensus is achieved.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 April 2020 and was last updated on 23 April 2020 (registration number INPLASY202040156).

INTRODUCTION

Review question / Objective: **What are the available occupational therapy instruments to evaluate play and its psychometric evidence?**

Rationale: **Play is considered as the main occupation for children. Pediatric occupational therapists utilize play either for the evaluation or intervention purpose. However, play is not properly measured by occupational therapists, and the use of play instrument is limited. No systematic review available compiling available play instruments. This systematic review aimed to identify play instruments relevant to occupational therapy practice.**

Condition being studied: Varied. Any condition or population group is considered as long as the study investigate psychometric properties of play instrument.

METHODS

Search strategy: Six electronic databases namely, Academic Search Complete, CINAHL, MEDLINE, Psychology and Behavioral Science Collection, Scopus and ASEAN Citation Index are used. Keywords are generated by discussion among authors and reviewing previous literature. The following keywords are used: (i) 'play' (ii) 'play-based' (iii) 'playthings' (iv) 'evaluation' (v) 'assessment' (vi) 'measurement' (vii) 'battery' (viii) 'test' (ix) 'instrument' (x) 'validity' (xi) 'reliability' (xii) 'sensitivity' (xiii) 'precision' (xiv) 'specificity' (xv) 'responsiveness' (xvi) 'psychometric' Boolean operators, wildcards, parenthesis and exact are used whenever appropriate. Manual search on the reference list of included articles is conducted to identify additional relevant article.

Participant or population: Occupational therapy.

Intervention: Play.

Comparator: Psychometric property.

Study designs to be included: All primary studies (i.e. qualitative study, mixed-method, cross-sectional, cohort) investigating validity and reliability of play assessment.

Eligibility criteria: We included study on (i) study on instrument for leisure type of play (not competitive play or sport), (ii) instrument evaluating play in general, (iii) study investigating the psychometric property of the instrument, (iv) the instrument is relevant for occupational therapy use. We exclusion studies that were (i) not original study (i.e. review, editor note), (ii) no full text available, (iii) the full text is not available in English, (iv) grey literature (e.g. thesis, book, conference) and (v) non-peer review journal article.

Information sources: Duplicates will be removed initially before the screening process. The first author will screen the title for eligibility according to the pre-determined criteria followed by both authors involved in the abstract and full text screening conducted independently. The pre-consensus agreement will be done by comparing the final accepted articles between the two authors. Any disagreements will be resolved through discussion between the two authors until consensus is achieved.

Main outcome(s): Psychometric properties according to COSMIN taxonomy.

Additional outcome(s): Clinical utilities of the play assessments.

Data management: Electronic citation is managed using EndNote reference manager software. Screening process against eligibility criteria in each stage is recorded using Excel document.

Quality assessment / Risk of bias analysis: (i) Quality Appraisal for Clinical Measurement Research Reports Evaluation Form; (ii) Terwee's Checklist for Quality Assessment of Psychometric Property of Assessment Tool.

Strategy of data synthesis: Included articles in the final analysis will be analysed narratively. Each article will be extracted for study objective, study design, instrument investigated, number and characteristics of raters (for reliability studies), number and characteristics of participants, country of the study, and findings into a matrix table according to Garrad's (2014) method. Each article will be assessed for quality using a quality appraisal evaluation form by Law and MacDermid (2014). Each identified instrument will be investigated on its clinical utility and its psychometric information will be presented according to COnsensus-based Standards for the selection of health status Measurement INstruments (COSMIN) taxonomy (Mokkink et al., 2010).

Subgroup analysis: Results are grouped according to the instrument.

Sensibility analysis: Not applicable

Language: Yes. English only.

Country(ies) involved: Malaysia.

Keywords: Assessment, clinimetric, evaluation, evidence-based practice, playthings.

Dissemination plans: The systematic review is intended to be published as journal article and presented in academic conferences.

Contributions of each author:
Author 1 - MHR has major contribution on initiating the original idea, conducting the systematic searching, independently screening the articles, rating the quality of included articles, disseminating, critical analysing, and synthesising the findings, and writing the manuscript.
Author 2 - FWY has major contribution on independently screening the articles, rating the quality of included articles, disseminating, critical analysing, and synthesising the findings, and writing the manuscript.