RESEARCH QUESTIONS
Does the Problem Gambling Severity Index (PGSI) actually measure just one factor? How well do the PGSI items measure the continuum of problem gambling severity? What are the sources of differential item functioning (DIF) among relevant subpopulations of gamblers?

PURPOSE
Several brief screening tools are available to assess problem gambling; however, research on their psychometric properties is often limited. Since its development in 2001, the PGSI has become the gold standard in both Canada and Australia for collecting information on problem gambling symptoms. As such, it is important to empirically validate all dimensions of its psychometric properties. The purpose of the present study was to: assess the factor structure of the PGSI; model the continuum of gambling problems as assessed by the PGSI total score; identify sources of DIF across demographic and game type subgroups; and assess the construct validity of the PGSI's item coverage.

HYPOTHESIS
The PGSI as a one-factor model would be validated. Expert rankings would be congruent with the severity estimates generated.

PARTICIPANTS
Participants were 25,584 individuals at least 18 years of age and reported gambling at least once in the past year.

PROCEDURE
Data for the present study were derived from two large population datasets which were merged for the purposes of the study: the CPGI integrated dataset and the Canadian Community Health Survey. The CPGI integrated dataset includes data from prevalence surveys conducted in six provincial and one national survey for a combined sample size of 14,388 past year gamblers (49% males). Canadian Community Health Survey – Mental Health Well-being includes data from 18,931 cases (51% males).

MAIN OUTCOME MEASURES
Data for the present study were derived from two large population datasets which were merged for the purposes of the study: the CPGI integrated dataset and the Canadian Community Health Survey. The CPGI integrated dataset includes data from prevalence surveys conducted in six provincial and one national survey for a combined sample size of 14,388 past year gamblers (49% males). Canadian Community Health Survey – Mental Health Well-being includes data from 18,931 cases (51% males).

KEY RESULTS
A one-factor structural equation model of the PGSI Likert response category items showed good fit to the data. There was no evidence of meaningful differences between men and women, types of gamblers or, among levels of income. There were some statistical differences among the three age groups, with slightly lower loadings for older participants. A gap in PGSI item coverage between mild and moderate problem gambling was noted such that redundant severity information was provided by items within the clusters at mild and moderate problem gambling. Specifically, items “feeling guilty” and “chasing losses” appear to provide redundant information on problem severity. “Borrowing money” was the only PGSI item to display a meaningful DIF between game type subgroups. Endorsement of the need to borrow money occurred at higher levels of severity for EGM or casino gamblers compared to gamblers who play other games. The empirically-derived rank order of symptoms was correlated with the opinions of gambling experts. The average severity rating by experts for each item was also highly correlated with the Rasch model item-level severity estimates.

LIMITATIONS
The PGSI was the only measure of gambling problems and DIF for non-problem gamblers versus problem gamblers could not be examined. Expert respondents likely aligned their ratings with personally held theories of problem gambling.

CONCLUSIONS
The results support for a one-factor model that was invariant across gender, age, income level, and gambler type. Rasch modelling revealed a well-fitting, unidimensional model with no miss-fitting items. The average severity assessed by the PGSI is consistent with moderately severe problem gambling. The PGSI is weak in assessing low to moderate problem severity, a notable limitation of most brief gambling screens.

KEYWORDS: problem gambling, PGSI, risk assessment, factor analysis, Rasch modelling

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