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Malaysian parent and teacher ratings of the oppositional defiant disorder symptoms: Measurement invariance and parent–teacher agreement

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ABSTRACT

Background: This study evaluated the measurement invariance and agreement across parent and teacher ratings of the DSM-IV-TR oppositional defiant disorder (ODD) symptoms.
Method: Malaysian parents and teachers of 934 children (between 6 and 11 years of age) completed rating scales comprising the ODD symptoms.
Results: Findings showed support for full measurement invariance (configural, metric and thresholds). Additional results indicated low parent–teacher agreement for all symptoms.
Discussion: The theoretical and clinical and implications of these findings are discussed.

1. Introduction

Oppositional defiant disorder (ODD), a common childhood disorder, relates to persistent pattern of negative, hostile and disobedient behaviours to authority figures (DSM-IV-TR; American Psychiatric Association [APA], 2000; DSM-5, APA, 2013). DSM-5 has a list of eight symptoms, separated into three areas (angry/irritable mood, argumentative/defiant behaviour, and indictiveness) – although the grouping is not relevant for diagnosis. These symptoms are the same ones listed in DSM-IV TR. Clinical practice for diagnosis of childhood psychological disorders, including ODD, emphasize combining information from multiple sources (Achenbach et al., 1989; De Los Reyes and Kazdin, 2005). Although information from parents and teachers are generally used for diagnosis of ODD (Strickland et al., 2012), there is no data on the measurement equivalency or invariance for the ODD symptoms reported by these informants. The current study examined measurement invariance for the ODD symptoms rated by parents and teachers for a group of Malaysian primary school children. It also examined parent–teacher agreement for ratings of these symptoms.

Like other psychological disorders (Achenbach et al., 1989; De Los Reyes and Kazdin, 2005), there is evidence of low parent–teacher agreement for reports of the ODD symptoms (Loeber et al., 1989; Munkvold et al., 2009; Strickland et al., 2012). For a group of clinic-referred children displaying disruptive behaviour, Loeber et al. reported kappa values for parent–teacher agreement ranging from .17 to .57, with a low median of .29. For a community sample, Munkvold et al. reported very low kappa values for parent–teacher agreement, ranging from .00 to .12 for girls, and from .14 to .21 for boys. For preschool children with high levels of disruptive behaviour, Strickland et al. reported kappa values for parent–teacher agreement ranging from −.02 to .17, with a low mean of .09. Such low agreement highlights the need to consider information from both these respondents together when diagnosing ODD. This is usually done by directly comparing their reports. This practice is only justified if these reports have measurement invariance.

Measurement invariance deals with whether the underlying structure (e.g. factor loadings, and item intercepts or thresholds) of a measure, such as a questionnaire, is equivalent across groups completing the measure (Reise et al., 1993). Invariance is inferred when they are the same, whereas noninvariance is inferred if this is not the case. Support for invariance would mean that the scaling and measurement properties are the same for ratings provided by these groups. This implies that the observed ratings from the groups can be compared directly. When there is no support for invariance it means that the scaling and measurement properties

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are not the same for the same ratings provided these groups, and therefore the observed ratings from the groups cannot be compared directly. Expressed differently, the same ratings for an item in the measure for the groups do not reflect the same level of the underlying trait in the groups. There are reasons to suspect that ODD symptoms ratings by parents and teachers may lack of measurement invariance since existing data show far more trait variances for teacher ratings than parent ratings for these symptoms (Gomez et al., 2005). To date no study has examined measurement invariance for parent and teacher ratings of the ODD symptoms. Such information is clinically relevant and valuable when multiple-informant reports are used. If ODD symptoms show invariance across these respondents, it follows that the ratings provided by them are directly comparable. In contrast, if ODD symptoms show non-invariance, then the ratings provided by parents and teachers are not directly comparable and therefore they have to be considered separately.

One goal of the current study was to use multiple-group CFA examine measurement invariance across Malaysian parent and teacher ratings of the ODD symptoms in their children. A second goal was to examine parent–teacher agreement for the individual ODD symptoms. This has not been examined so far in a non-Western population. The data set used in the current study was the same data set used previous to examine the convergent and discriminant validity of parent and teacher ratings of Attention Deficit/Hyperactivity Disorder (ADHD) and ODD symptoms (Gomez et al., 2005), gender invariance for parent ratings of the ADHD and ODD symptoms (Burns et al., 2006), and the prevalence of ODD in Malaysia (Gomez et al., 2013). These previous studies did not examine measurement invariance for parent and teacher ratings of the ODD symptoms. In the absence of any empirical data, there was no specific expectation for measurement invariance. Based on existing data of Western countries, we expected low agreement for all the ODD symptoms.

2. Method

2.1. Participants

The participants were 934 parents and teachers from the State of Johor in Malaysia. These respondents provided ratings for 436 boys and 496 girls from the general population, from 14 randomly selected schools. Their ages ranged from 6 and 11 years of age, with a mean (*SD*) of 8.86 (1.62) years for boys, and 9.02 (1.73) years for girls. There was no significant difference for age between boys and girls, t (932) = 1.49, *ns*. The ethnic distribution, parents' educational levels, and father employment status were comparable to the general Malaysian population (for details, see Gomez et al., 2013).

2.2. Measure

Details of the Disruptive Behaviour Rating Scale (DBRS; Barkley and Murphy, 1998) used in the current study for parent and teacher ratings of the ODD symptoms have been provided in Gomez et al. (2013). Briefly, all the ODD symptoms in the DBRS are presented with the word "often", excluded. Parents and teachers were provided with both English and Malay versions of the DBRS (developed via forward and backward translation by experts in both languages, for details, see Gomez et al., 2013). Respondents rated the occurrence of each symptom over the past 6-months on a 4-point scale. The point intervals are 0 = "never or rarely", 1 = "sometimes", 2 = "often", and 3 = "very often". For the current study, the ratings obtained were recoded using the binary scoring method. That is, for each item, the first two response options of the original responses (i.e., options 0 and 1) were recoded as the symptom being absent (recoded 0), whereas the next two response options (i.e., options 2 and 3) were recoded as the symptom being present (recoded 1). These binary coded scores were used for all analyses, including invariance testing. Binary scores were used as they align with the way symptoms are coded for clinical diagnosis, and also because they are the only way that ODD rating scales can be used for screening when local normative scores are not available. Cronbach's alphas for the recoded parent and teacher ODD scales were .83 and .92, respectively.

2.3. Procedure

Following ethical approval from the relevant authorities and school officials, classroom teachers were issued with the appropriate number of large sealed envelopes to be forwarded to parents, through their students. Each envelope contained a plain language statement providing the background of the study, the DBRS, the consent form, and a return envelope. When parental consent for teacher completion of the DBRS was available, the child's class-teacher was requested to complete the DBRS for the child. In nearly all instances teachers complied with this request. In all, 934 parents and teachers completed the DBRS. These figures represent a participation rate of approximately 93%. Mothers completed approximately 95% of all parental ratings. More details are available in Gomez et al. (2013).

2.4. Analytic strategy

Fig. 1 shows the path diagram of the single group CFA model used for testing invariance. This model is essentially a combination of the individual parent and teacher 1-factor CFA models for ODD.

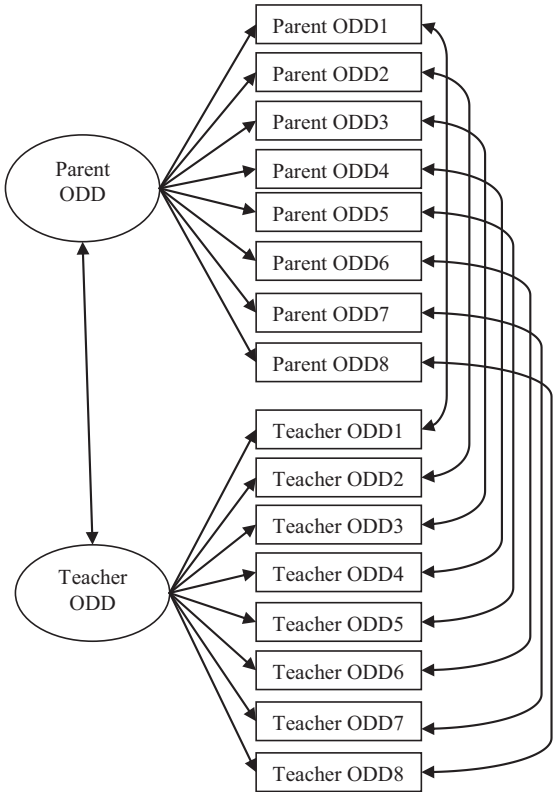

Fig. 1. Schematic path model for the configural invariance CFA model used for evaluating invariance across parent and teacher ratings. *Note.* The ODD factors were correlated with each other, and is indicated by the path with double-headed arrow on the left side. The paths with double-headed arrows on the right side represent the correlations between the error variances of like items rated by parents and teachers. The error variances are not shown in the figure.