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Not perfect, but it can be used to measure relational aggression: Psychometric properties of the Indonesian version of the Relational Aggression Scale

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Abstract

Relational aggression is one form of violence that can occur in interpersonal relationships. Relational aggression has various construct variations and measurement tools. Recently, a new measurement tool for relational aggression called the Relational Aggression Scale (RAS) has been developed, which can be used to measure the construct of relational aggression directly, indirectly, proactively, and reactively. This study aims to evaluate the psychometric properties of the RAS in an Indonesian sample. Participants in the study were 712 individuals aged 18-25 years (M = 20.987, SD = 1.552) residing in Surabaya. The sample was collected using convenience sampling. The evaluation of the psychometric properties of the Indonesian version of the RAS included content validity, item accuracy, factor structure, and convergent validity. Aiken V calculation was used to evaluate the content accuracy of the items, and the infit and outfit estimates of the Rasch model were used to evaluate the accuracy of the items on the construct of direct, indirect, proactive, and reactive relational aggression. Factor structure testing was done using confirmatory factor analysis, and convergent validity testing was done by correlating the Indonesian version of the RAS with other relational aggression measurements tools, such as the relational aggression subscale of the Self-Report of Aggression and Social Behavior Measure and the Peer Conflict Scale. The study found that not all items of the Indonesian version of the RAS have satisfactory item quality based on Aiken V calculation and infit and outfit estimates of the Rasch model. However, the Indonesian version of the RAS has a satisfactory factor structure and convergent validity. Although the Indonesian version of the RAS is not perfect in terms of item quality, the Indonesian version of the RAS can be used to measure relational aggression in the Indonesian sample.

Keywords: content validity, convergent validity, internal structure validity, item fit, relational aggression

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Introduction

Gossiping and spreading rumors are often considered normal behavior in interpersonal relationships. This can happen in the context of friendship (Baumgardner & Boyatzis, 2018; Kokkinos & Voulgaridou, 2017; Kraft & Mayeux, 2018), romantic (Woodin et al., 2016), and even siblings relationships (Stauffacher & DeHart, 2006; Updegraff et al., 2005). Moreover, it can be done by individuals ranging from children (Aizpitarte et al., 2017; Baker et al., 2018; Jambon & Smetana, 2018), adolescents (Bell et al., 2018; Dumas et al., 2017; Mukhtar & Mahmood, 2018)heavy drinking, and antiauthority behavior, while also considering the role of teens? perception of their own popularity and psychosocial adjustment. High school students (N = 986; 50% female; Mage = 14.98 years, to adults (Clark et al., 2015; Sandberg et al., 2018). However, gossiping and spreading rumors are forms of relational aggression. Although it is considered a minor behavior, relational aggression can have negative psychological impacts on the victim, such as anxiety (Amoh & Allwood, 2020; Gower et al., 2014), withdrawal (Findley & Ojanen, 2013; Gower et al., 2014), depression (Casper et al., 2017; Kawabata et al., 2020; Kushner et al., 2018), even self-injury (Buser et al., 2015).

Relational aggression is considered a form of violence that is not easily aware of and aims to damage interpersonal relationships (Dailey et al., 2015; Vitaro et al., 2006). Individuals who engage in relational aggression tend to have unhealthy personalities such as narcissistic (Bell et al., 2018; Karlina et al., 2021; Onishi et al., 2012)interpersonal exploitation, and narcissistic rage and machiavellian (Abell & Brewer, 2014; Knight et al., 2018). In addition, relational aggression is often triggered by negative interpersonal relationships in both friendship (Baumgardner & Boyatzis, 2018; Kokkinos et al., 2016; Soekoto et al., 2020), romantic (Linder et al., 2002; Oka et al., 2016), and siblings relationships (Updegraff et al., 2005). Even relational aggression is influenced by the relationship with parents (Kawabata & Crick, 2016; Kokkinos & Voulgaridou, 2019), mainly if parents apply psychological control parenting which can be an example of children do relational aggression toward others (Baumgardner & Boyatzis, 2018; Chen & Cheng, 2020; Voulgaridou & Kokkinos, 2020).

Generally, researchers describe relational aggression behaviors such as spreading rumors, gossiping, damaging reputation, ostracizing, ignoring, and manipulating friends (Crick & Grotpeter, 1995; Linder et al., 2002; Little et al., 2003; Marsee & Frick, 2007; Morales & Crick, 1998). So far, there have been several measurement tools developed to measure relational aggression, such as Children's Social Behavior Scale (Crick & Grotpeter, 1995), Self-Report of Aggression and Social Behavior Measure (Linder et al., 2002; Morales & Crick, 1998), Form-Function Aggression Measure (Little et al., 2003), Peer Conflict Scale (Marsee & Frick, 2007), Preschool Proactive and Reactive Aggression Scale (Ostrov & Crick, 2007), and Young Adult Social Behavior Scale (Crothers et al., 2009). Among the available measurement tools, some consider the function of relational aggression that relates to the motivation of individuals to perform relational aggression, that is proactively and reactively (Little et al., 2003; Marsee et al., 2011). The function of relational aggression and the form of relational aggression that relates to how individuals perform relational aggression, that is directly and indirectly, need to be considered (Murray-Close et al., 2016; Voulgaridou & Kokkinos, 2015). Considering this, Voulgaridou and Kokkinos (2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS developed the Relational Aggression Scale (RAS) that accommodates the form and function of relational aggression.

RAS is designed to simultaneously measure the form and function of relational aggression so that each item can measure relational aggression directly or indirectly and proactively or reactively (Voulgaridou & Kokkinos, 2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS. The direct form of relational aggression includes threatening to reveal personal information, friendship manipulation, ignoring, social exclusion, and reputation defamation. In contrast, the indirect form of relational aggression includes backbiting, revealing private information, spreading rumors, social exclusion, and pranks. The items of relational aggression, both directly and indirectly, are written by considering the function of relational aggression so that each item also reflects relational aggression proactively and reactively. Thus, the items of the RAS lead to four classifications, namely directly and proactively, directly and reactively, indirectly and proactively, and indirectly and reactively

Several panelists have reviewed the items of the RAS to ensure the accuracy of item classification on the form and function of relational aggression. The psychometric properties of the RAS were tested by involving a Greek sample aged 10-16 years (Voulgaridou & Kokkinos, 2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS. Several measurement models, such as unidimensional model, two-factor correlation, four-factor correlation, and bifactor model, tested the factor structure of the RAS. Although all the models tested have satisfactory accuracy, only the four-factor correlation model was tested for internal consistency, measurement invariance, and convergent validity. The four-factor correlation model of the RAS was found to have reliability above 0.75 and good measurement invariance across gender and grade levels. In addition, RAS also has good convergent validity when correlated with the Children's Social Behavior Scale-Self Report and Peer Conflict Scale. To date, RAS has only been used to measure relational aggression in teenagers in Greece (Kokkinos et al., 2020; Voulgaridou & Kokkinos, 2020) and

Indonesia (Karlina et al., 2021; Soekoto et al., 2020), which were reported to have satisfactory reliability.

Although the items of the RAS have been reviewed to check the accuracy of the classification of the form and function of relational aggression, a quantitative content validity test has not been conducted. Content validity testing aims to check the accuracy of item content with the definition of the construct being measured (Bandalos, 2018; Furr, 2011). Moreover, each item of the RAS leads to two constructs simultaneously, namely the form and function of relational aggression, so it is necessary to ensure the accuracy of its content. In addition, the issue of the possibility of overlapping content items on different constructs is starting to be noticed by some researchers (Burrell et al., 2018; Dixon & Johnston, 2019; Johnston et al., 2014) it is important that measures have good content validity and that there is not contamination of measures by content from other constructs. While reliability and construct validity are routinely reported, to date, there has not been a satisfactory, transparent, and systematic method of assessing and reporting content validity. In this paper, we describe a methodology of discriminant content validity (DCV. This can threaten validity because content validity is considered an essential aspect of the theoretical construct of a measurement tool (Terwee et al., 2018)and (4. Furthermore, content validity provides information about items' relevance and representativeness to the measured construct.

Not only is the issue of overlapping content items, but the issue of item appropriateness in culture can also threaten the validity of a measurement tool. Although some researchers claim that relational aggression behavior is general across cultures (Kawabata et al., 2012; Murray-Close et al., 2016), some researchers claim that there are differences in relational aggression across cultures. For example, social exclusion is considered more tolerable as a form of relational aggression that is not as serious in one culture compared to another (French et al., 2002; Lansford et al., 2012). Additionally, the form of prank behavior can also vary across cultures. Especially in Indonesia, prank behavior is more synonymous with direct relational aggression than indirect relational aggression. Therefore, this condition urges researchers to test the accuracy of the RAS as a measure of relational aggression in the Indonesian sample.

In addition to content validity, concerns regarding the suitability of items in RAS are also linked to internal structure validity. The internal structure validity of a measurement instrument can be assessed through the utilization of Rasch model analysis and factor analysis (Demars, 2013; Osteen, 2010). Although these approaches are grounded in distinct theoretical, philosophical, and conceptual frameworks, they offer more comprehensive insights (Andrich, 2004; Christensen et al., 2012; Waugh & Chapman, 2005). The Rasch model provides detailed item-level information that is independent of the sample (Tennant et al., 2004). In contrast, factor analysis informs the accuracy of dimensionality and factor loading at the instrument level (Bandalos, 2018; Rust et al., 2021). Both Rasch model analysis and factor analysis are valuable for evaluating the appropriateness of items in measuring constructs at various levels. These approaches not only describe the psychometric properties of a measurement instrument in terms of content and internal structure validity but also address convergent validity. Convergent validity, in particular, offers information about the accuracy of measurement outcomes by establishing correlations with other measures assessing the same construct (Bandalos, 2018; Furr, 2011).

This study aims to evaluate the psychometric properties of the RAS, including content validity, internal structure, and convergent validity in the Indonesian sample. First, the RAS will be reviewed by several panelists to examine the relevance of items in measuring the construct both in its construct and other constructs. Second, the researcher will evaluate the item's fit based on the Rasch model. Third, this study will test the factor structure by composing several measurement models of the RAS. Finally, to ensure the accuracy of the measurement results from the RAS, the study will conduct correlation tests with other aggression measures.

Tab. 1. Demographics of research participants

Demographics	Frequency	Percentage	Demographics	Frequency	%
Gender			Ethnicity		
Female	535	75.1	Javanese	343	48.2
Male	177	24.9	Chinese	126	17.7
			Sundanese	86	12.1
Residence			Betawi	27	3.8
Large city	495	69.5	Balinese	25	3.5
Small city	170	23.9	Batak	18	2.5
Village	47	6.6	Malay	15	2.1
			Bugis	11	1.5
Occupation			Madurese	8	1.1
Diploma student	25	3.5	Banjar	8	1.1
Undergraduate student	606	85.1	Dayak	8	1.1
Master's student	12	1.7	Makassar	7	1.0
Full-time Employment	21	2.9	Minangkabau	5	.7
Part-time Employment	8	1.1	Sasak	5	.7
Self-employed	5	.7	Arab	3	.4
Seeking employment	24	3.4	Bantenese	3	.4
Unemployed	11	1.5	Others	14	2.0

Method

Participants

The participants in the study are 712 individuals aged 18-25 years (M = 20.987, SD = 1.552) currently residing in Surabaya. The participants consist of 535 (75.1%) females and 177 (24.9%) males, the majority of whom are pursuing a Bachelor's degree (85.1%). The majority of participants are of Javanese ethnicity (48.2%), Chinese (17.7%), Sundanese (12.1%), and 20% are of other ethnicities such as Betawi, Balinese, Batak, Malay, Bugis, and others. The sample size of this study met the minimum sample size of 384 with an expected statistical power of 0.90 and a type 1 error rate of p = 0.05 based on the Satorra and Saris (1985) method through WebPower (Zhang & Yuan, 2018). The sample was collected using convenience sampling by spreading information about the research through social media. Participation is voluntary and data will be kept confidential. The willingness of participants to participate in the research is stated in the informed consent of the research. This research has received ethical clearance from the Universitas Surabaya Research Ethics Committee with number 29/KE/II/2022.

Instruments

Relational Aggression Scale: The Relational Aggression Scale (RAS; Voulgaridou & Kokkinos, 2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS, consisting of 30 items, was used to measure relational aggression. The RAS is divided into four categories of forms and functions of relational aggression: direct and proactive (7 items, for example, "I threaten to share private secrets of my friend in order to get them comply to my wishes"), direct and reactive (8 items, for example, "When my friend have hurt me, I tell them we won't be friends anymore"), indirect and proactive (8 items, for example "I tell my friend's secrets so that the other won't like them anymore."), and indirect and reactive (7 items, for example "When I get mad with my friend, I share their secrets with other people"). The RAS uses a five-point response scale, ranging from 1 (never) to 5 (always).

Self-Report of Aggression and Social Behavior Measure: The Relational Aggression subscale of the Self-Report of Aggression and Social Behavior Measure (SRASBM; Linder et al., 2002; Morales & Crick, 1998) consisting of 11 items was used to measure direct relational aggression that is proactive and reactive. The items for direct and proactive relational aggression are five items (e.g., "I have spread rumors about a person just to be mean ") and the items for direct and reactive relational aggression are six items (e.g., "When my friend hurts my feelings, I intentionally ignore them"). The response options for the relational aggression subscale of the SRASBM consist of 7 choices ranging from 1 (never) to 7 (always).

Peer Conflict Scale: The relational aggression subscale of the Peer Conflict Scale (PCS: Marsee & Frick, 2007), which consists of 20 items, was used to measure both proactive and reactive relational aggression. Each dimension includes ten items, including the reactive-relational dimension (for example, "I spread rumors and lies about others when they do something wrong to me"), and the proactive-relational dimension (for example, "I spread rumors and lies about others to get what I want"). The relational aggression subscale of the PCS uses four response options ranging from 0 (not at all true) to 3 (definitely true).

Data analysis

The Relational Aggression Scale, the Subscale of Relational Aggression from the Self-Report of Aggression and Social Behavior Measure, and the Peer Conflict Scale were adapted into Indonesian using guidelines from the International Test Commission (Hambleton, 2005). The adaptation process of the measuring instruments included translating from English to Indonesian, checking the accuracy of the translation, and translating back to English. Each adaptation stage was carried out by two independent translators, two reviewers, and two different independent translators from the initial translation. Finally, a pilot test was conducted to determine participants' understanding of the Indonesian version of the measuring instruments.

The content validity of the RAS was conducted by involving 23 panelists who were graduate students who had passed the psychological measurement course with an A grade. The content validity estimate was calculated using Aiken Validity (Aiken, 1985). The panelists assessed the appropriateness of the statement items with the construct definition with a range of ratings from 1 (very irrelevant) to 5 (very relevant). Each item was evaluated for its relevance to the form and function of relational aggression, namely direct, indirect, proactive, and reactive relational aggression. If the Aiken V coefficient ≥ 0.63, it can be stated that the item is relevant to the assessed construct. The accuracy of the items based on the Rasch model was carried out using the Winsteps 5.0.1 program. An item is considered to have a measure of the construct being measured if it has an infit and outfit estimate of 0.5 - 1.5 (Bond & Fox, 2013; Linacre, 2002).

The internal structure validity of RAS was tested using confirmatory factor analysis through Mplus 8 with robust maximum likelihood estimation. The factor structure testing of RAS was conducted by constructing four measurement models, namely: (1) a one-factor model, (2) a two-factor model with direct and indirect relational aggression, (3) a two-factor model with proactive and reactive relational aggression, and (4) a four-factor model. The measurement models were developed by creating item parcels as the scale has more than five items for each construct and tested on a large sample size (Bagozzi & Heatherton, 1994). Item parcels were made by creating three item packets to be indicators of proactive direct, reactive direct, proactive indirect, and reactive indirect. Specifically, the three sets of reactive direct and proactive indirect parcels consisted of two parcels containing three items and one parcel containing

two items. In comparison, the three sets of proactive direct and reactive indirect parcels consisted of one parcel containing three items and two parcels containing two items.

The evaluation of the measurement model using several accuracy indices such as the Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). If the TLI and CFI coefficients are greater than 0.9 and the RMSEA and SMRS coefficients are less than 0.08, the measurement model can be considered to have satisfactory accuracy (Kline, 2016; Schreiber et al., 2006; van de Schoot et al., 2012). Finally, convergent validity testing is performed using correlation analysis between RAS and the relational aggression sub-scales of SRASBM and PCS. If the correlation results with the measurement tool in this study are consistent with those in previous studies, it can be stated that RAS has satisfactory convergent validity.

Result

The results of the content validity testing of the Indonesian version of the RAS are reported in Table 2. Based on the Aiken V calculations, 22 items were found to have Aiken V coefficients ≥ 0.63 for both the forms and functions of relational aggression, and eight items were found to have Aiken V coefficients ≥ 0.63 for one form or function of relational aggression. In detail, 12 items were considered relevant to direct relational aggression, 11 were considered relevant to indirect relational aggression, 14 were considered relevant to proactive relational aggression, and 16 were considered relevant to reactive relational aggression.

Table 3 presents the descriptive statistics of the items in the Indonesian version of RAS. Although the majority of items were responded to on a scale ranging from 1 (never) to 5 (always), the overall items had relatively low means (M = 1.16 – 2.83, SD = 0.40 – 1.12). Additionally, it was found that the skewness ranged from 0.15 to 2.84 and the kurtosis ranged from -0.60 to 9.19. These findings indicate that the data from the Indonesian version of RAS followed a normal distribution as they exhibited skewness values of less than 3 and kurtosis values of less than 10 (Kline, 2016).

Table 4 shows the results of Rasch model testing for RAS items conducted on a sample of 712 participants. In testing the items of direct and reactive relational aggression, it was found that all items had outfit coefficients of 0.50 to 1.50. However, two items (IP_06 and IR_06) of indirect relational aggression and two items (DP_01, IP_06) of proactive relational aggression were found to have outfit coefficients < 0.50 or > 1.50. Overall, 27 items of the Indonesian version of the RAS met the outfit coefficient for the form and function of relational aggression, two items only met the item accuracy for one form or function of relational aggression, and one item did not have item accuracy for both form and function of relational aggression.

The factor structure testing of the Indonesian version of RAS was conducted using the same sample of 712 participants as in the Rasch model testing. The results of the four measurement models of the Indonesian version of RAS are reported in Table 5. The one-factor model (figure 1a), the two-factor model with direct and indirect relational aggression (figure 1b), and the two-factor model with proactive and reactive relational aggression (figure 1c) did not fit the data well, as indicated by the TLI and CFI coefficients below .90 and the RMSEA coefficient above .08. On the other hand, the four-factor model (figure 1d) exhibited a satisfactory fit. This finding suggests that the Indonesian version of RAS has a factor structure consisting of four dimensions: proactive direct, reactive direct, proactive indirect, and reactive indirect.

The factor loadings of each measurement model are reported in Table 6 and Figure 1a, Figure 1b, Figure 1c, Figure 1d, which indicate that each measurement model has factor loadings greater than 0.5. Figure 1b and Figure 1d also reveals the correlations between latent variables in the two-factor and four-factor models. Specifically, direct relational aggression

Tab. 2. The Aiken V coefficient of the Indonesian version of the RAS

Item	Dir	Indir	Proact	React	Item	Dir	Indir	Proact	React
PD_01	.58	.28	**.88**	.18	PI_01	.03	**.96**	**.83**	.17
PD_02	**.85**	.08	**.70**	.20	PI_02	.22	**.64**	**.95**	.05
PD_03	**.85**	.08	**.67**	.23	PI_03	.12	**.92**	**.79**	.23
PD_04	.59	.21	**.63**	.14	PI_04	.04	**.92**	**.88**	.14
PD_05	**.86**	.16	**.88**	.16	PI_05	.20	**.83**	**.90**	.10
PD_06	**.64**	.13	**.65**	.24	PI_06	.12	**.90**	**.89**	.14
PD_07	**.84**	.11	.34	**.67**	PI_07	.07	**.95**	**.78**	.35
RD_01	.37	.39	.14	**.90**	PI_08	.04	**.96**	**.87**	.14
RD_02	**.83**	.13	.24	**.71**	RI_01	.12	**.79**	.27	**.70**
RD_03	**.78**	.17	.28	**.75**	RI_02	.59	.23	.29	**.68**
RD_04	.77	.16	.15	**.92**	RI_03	.28	**.76**	.26	**.84**
RD_05	**.80**	.17	.23	**.79**	RI_04	.26	.48	.24	**.77**
RD_06	**.80**	.22	.17	**.92**	RI_05	.47	.47	.27	**.85**
RD_07	**.70**	.32	.37	**.70**	RI_06	.41	.38	.13	**.92**
RD_08	**.93**	.05	.21	**.92**	RI_07	.10	**.91**	.18	**.91**

Note: Bold ≥ 0.63; Dir = direct; Indir = indirect; Proact = proactive; React = reactive; PD = proactive direct; RD = reactive direct; PI = proactive indirect; RI = reactive indirect

Tab. 3. Descriptive statistics of items in the Indonesian version of RAS.

Item	Min	Max	M	SD	Skewness	Kurtosis
PD_01	1	5	1.57	.83	1.40	1.46
PD_02	1	3	1.18	.44	2.54	5.93
PD_03	1	4	1.27	.55	2.16	4.61
PD_04	1	4	1.38	.60	1.39	1.29
PD_05	1	5	1.45	.76	1.83	3.36
PD_06	1	5	1.43	.72	1.79	3.09
PD_07	1	5	1.27	.61	2.51	7.02
RD_01	1	5	1.37	.67	1.78	2.64
RD_02	1	5	2.83	1.08	.15	-.43
RD_03	1	5	2.28	.98	.54	-.01
RD_04	1	5	1.43	.74	1.63	1.93
RD_05	1	5	2.62	1.12	.26	-.60
RD_06	1	5	1.37	.66	1.97	4.01
RD_07	1	5	1.57	.84	1.56	2.22
RD_08	1	5	1.47	.76	1.89	4.17
PI_01	1	4	1.39	.60	1.43	1.77
PI_02	1	5	1.28	.54	2.14	5.80
PI_03	1	4	1.27	.54	2.00	3.97
PI_04	1	4	1.16	.41	2.84	9.44
PI_05	1	4	1.19	.47	2.76	8.40
PI_06	1	3	1.16	.40	2.28	4.46
PI_07	1	5	1.28	.55	2.30	6.83
PI_08	1	5	1.40	.66	1.91	4.46
RI_01	1	4	1.46	.69	1.31	.79
RI_02	1	5	1.22	.49	2.56	8.40
RI_03	1	4	1.22	.48	2.27	4.88
RI_04	1	5	1.37	.67	1.89	3.48
RI_05	1	5	1.29	.62	2.33	5.57
RI_06	1	5	1.54	.82	1.57	2.14
RI_07	1	5	1.20	.48	2.72	9.19

Note: PD = proactive direct; RD = reactive direct; PI = proactive indirect; RI = reactive indirect

has a high correlation with indirect relational aggression ($r = .767$, $p < 0.001$), and proactive relational aggression has a high correlation with reactive relational aggression ($r = .820$, $p < 0.001$). In the four-factor model, it is also observed that the factors are positively correlated with each other, ranging from moderate to high correlations.

Table 7 reports the reliability coefficients and correlations of the Indonesian version of the RAS. The dimensions of direct proactive, direct reactive, and indirect proactive have satisfactory reliability coefficients of ≥ 0.7, while the dimension of indirect reactive only has a reliability coefficient of 0.65. Additionally, the relational aggression subscale of the SRASBM and PCS have satisfactory internal consistency. The dimensions of the Indonesian version of the RAS are positively correlated with coefficients ranging from 0.419 to 0.758. Furthermore, each dimension of the Indonesian version of the RAS is also positively correlated with the relational aggression subscale of the SRASBM and PCS.

Discussion

This study aims to evaluate the psychometric properties of the Indonesian version of the Relational Aggression Scale (RAS). The RAS is a tool used to measure relational aggression and can measure the dimensions of relational aggression in terms of form (direct and indirect) and function (proactive and reactive). Each item of the RAS represents the form and function of relational aggression. The results of this study indicate that the items of the Indonesian version of the RAS represent the measured construct. Additionally, the study found that the Indonesian version of the RAS's best factor structure is four dimensions: proactive direct, reactive direct, proactive indirect, and reactive indirect. Lastly, the study found that the Indonesian version of the RAS has satisfactory convergent validity when correlated with the relational aggression subscale of SRASBM and PCS. Overall, the findings of this study are not significantly different from previous studies that evaluated the RAS's content, internal

Tab. 4. Item parameters of the Indonesian version of the RAS

	Direct			Indirect			Proactive			Reactive		
	M	In	Out	M	In	Out	M	In	Out	M	In	Out
PD_01	-.06	1.28	**1.32**				-.95	1.61	1.71			
PD_02	1.33	1.07	**.89**				.67	.97	**.83**			
PD_03	.86	.95	**.78**				.13	.88	**.93**			
PD_04	.45	.75	**.79**				-.35	.78	**1.03**			
PD_05	.25	.98	**.81**				-.59	1.31	**1.26**			
PD_06	.29	1.09	**.96**				-.54	1.19	**1.33**			
PD_07	.83	1.08	**.79**				.10	1.22	**1.02**			
RD_01	.48	1.07	**.91**							5.00	1.06	**.85**
RD_02	-2.14	1.27	**1.26**							-2.18	1.24	**1.24**
RD_03	-1.36	.90	**.89**							-1.40	.88	**.87**
RD_04	.31	1.10	**.97**							.25	1.07	**.97**
RD_05	-1.85	1.02	**1.00**							-1.89	.99	**.97**
RD_06	.49	1.10	**.93**							.42	1.02	**.84**
RD_07	-.07	1.00	**.84**							-.13	1.04	**.86**
RD_08	.19	1.10	**.96**							.13	1.13	**1.00**
PI_01				-.46	.87	**1.06**	-.38	.89	**1.09**			
PI_02				.02	.98	**1.16**	.09	.92	**1.09**			
PI_03				.03	.75	**0.70**	.10	.77	**.74**			
PI_04				.72	.76	**0.59**	.78	.78	**.61**			
PI_05				.52	.91	**0.94**	.58	.95	**.88**			
PI_06				.63	1.12	1.69	.69	1.13	1.86			
PI_07				.00	.70	**0.56**	.07	.73	**.70**			
PI_08				-.49	.83	**0.79**	-.41	.86	**.82**			
RI_01				-.72	1.30	**1.35**				.15	1.02	**.97**
RI_02				.33	1.04	**1.09**				1.01	1.07	**.95**
RI_03				.34	.84	**0.71**				1.03	.98	**.77**
RI_04				-.39	1.18	**1.37**				.42	1.12	**.97**
RI_05				-.04	1.29	**1.21**				.71	1.08	**.91**
RI_06				-.94	1.51	1.58				-.04	1.11	**1.08**
RI_07				.45	.98	**1.04**				1.12	.98	**.75**

Note: In = Infit; Out = Outfit; Bold between 0.5 – 1.5; Meas = measure; PD = proactive direct; RD = reactive direct; PI = proactive indirect; RI = reactive indirect

Tab. 5. The model fit of the Indonesian version of the RAS

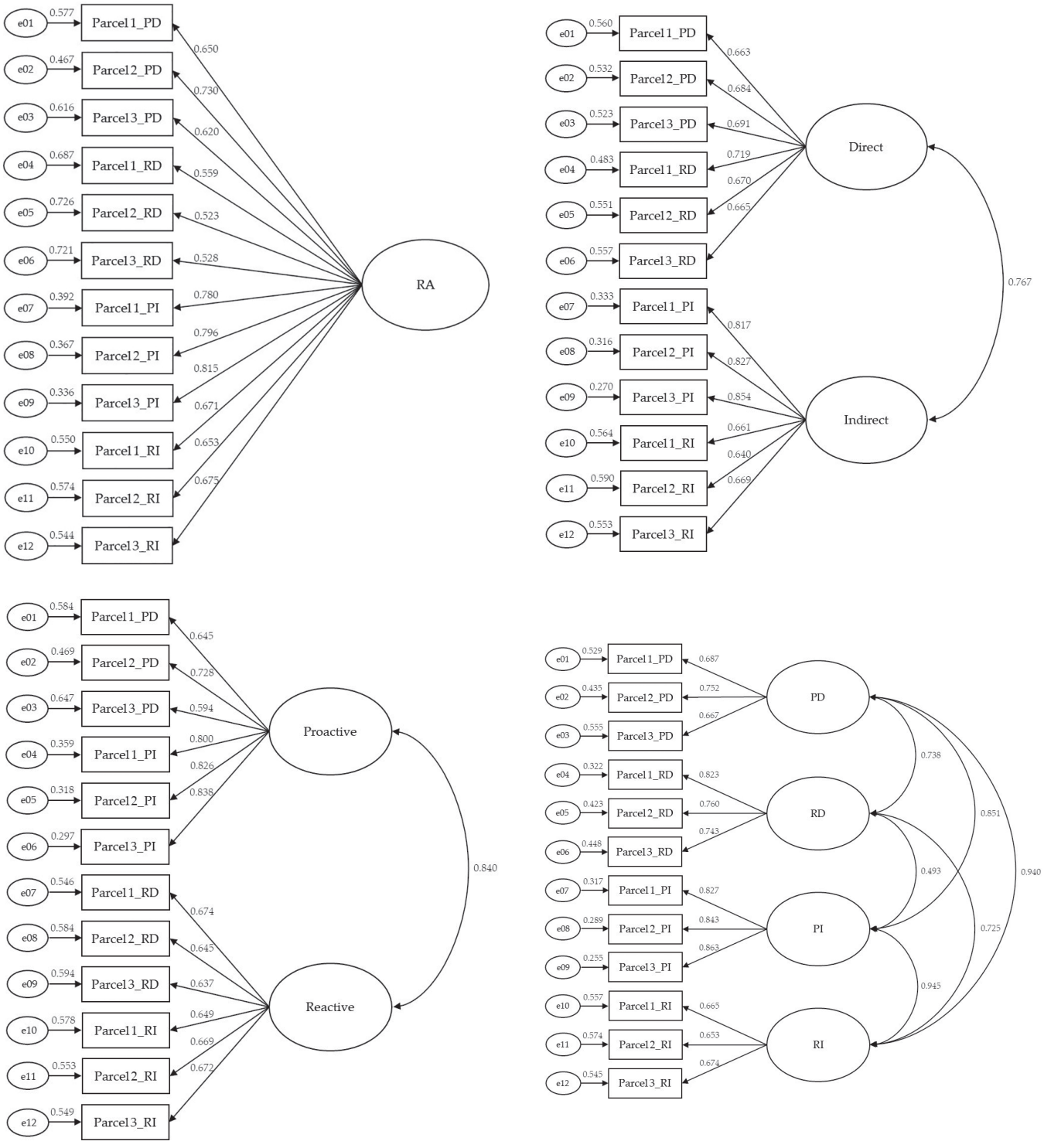
	Model fit indices							
	χ2	df	χ2/df	TLI	CFI	RMSEA	90% CI	SRMR
One-factor	469.38	54	8.69	.804	.839	.104	.095 - .113	.076
Two-factor[a]	318.37	53	6.01	.872	.897	.084	.075 - .093	.068
Two factor[b]	407.35	53	7.69	.829	.863	.097	.088 - .106	.074
Four-factor	95.45	48	1.99	.975	.982	.037	.026 - .048	.029

Note: Two-factor[a] = two-factor model with direct and indirect relational aggression; Two factor[b] =, (3) two-factor model with proactive and reactive relational aggression

structure, and convergence (Voulgaridou & Kokkinos, 2018) particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS.

In the development of the RAS, the items of the RAS were ensured to be consistent with the classification of forms and functions of relational aggression by several panelists

Fig. 1. Measurement model of the Indonesian version of RAS (RA = relational aggression; PD = proactive direct; RD = reactive direct; PI = proactive indirect; RI = reactive indirect)



(Voulgaridou & Kokkinos, 2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS. In this study, the evaluation of content validity was conducted by checking the consistency of items with the measured construct and consistency with different constructs. Overall, this study found that 23 out of 30 items had content consistent with the definition of the measured construct. The remaining seven items only accurately measured one of the definitions of forms or functions of relational aggression. Nevertheless, each item should be intended to measure both forms and functions of relational aggression. In addition, almost all items were considered inconsistent with the definition of different constructs. Except for item DP_07 (When I am angry with my friend, I do not let them to sit with my group during

Tab. 6. Factor loadings of the measurement model for the Indonesian version of RAS

	RAS	Direct	Indirect	Proactive	Reactive	DP	DR	IP	IR
Parcel 01 of PD	.650	.663		.645		.687			
Parcel 02 of PD	.730	.684		.728		.752			
Parcel 03 of PD	.620	.691		.594		.667			
Parcel 01 of RD	.559	.719			.674		.823		
Parcel 02 of RD	.523	.670			.645		.760		
Parcel 03 of RD	.528	.665			.637		.743		
Parcel 01 of PI	.780		.817	.800				.665	
Parcel 02 of PI	.796		.827	.826				.653	
Parcel 03 of PI	.815		.854	.838				.674	
Parcel 01 of RI	.671		.661		.649				.665
Parcel 02 of RI	.653		.664		.669				.653
Parcel 03 of RI	.675		.669		.672				.674

Note: PD = proactive direct; RD = reactive direct; PI = proactive indirect; RI = reactive indirect

Tab. 7. The reliability (main diagonal) and correlation coefficients (below main diagonal) of the Indonesian version of the RAS

	PD	RD	PI	RI	PRA	RRA	PR	RR
PD	.704							
RD	.591	.730						
PI	.675	.417	.843					
RI	.669	.550	.739	.650				
PRA	.617	.353	.652	.646	.780			
RRA	.625	.607	.530	.619	.708	.779		
PR	.588	.358	.607	.605	.717	.680	.804	
RR	.532	.513	.562	.607	.619	.726	.788	.846

Note: PD = proactive direct; RD = reactive direct; PI = proactive indirect; RI = reactive indirect; PRA = proactive relational aggression of SRASBM; PRA = reactive relational aggression of SRASBM; PR = proactive relational aggression of PCS; RR = reactive relational aggression of PCS. All correlations were significant at the $p < 0.001$ level.

the break time.) which should represent proactive relational aggression, it is considered more consistent with the definition of reactive relational aggression. The findings on item DP_07 indicate evidence of possible overlap in item content on different constructs as previously explained by several researchers (Burrell et al., 2018; Dixon & Johnston, 2019; Johnston et al., 2014) that is must measure the full scope and content of the construct without contamination from similar constructs. This study uses a systematic, transparent quantitative method (discriminant content validation, DCV.

This finding suggests that most items of the Indonesian version of the RAS have represented the measured construct following its underlying theory. However, some items still are not perfect in measuring the form and function of relational aggression simultaneously. This may be due to cultural differences that lead to different behaviors of relational aggression (Kawabata et al., 2012; Murray-Close et al., 2016). For example, the item IR_02 (When I am angry with my friend, I make them prank phone calls.) is supposed to represent indirect and reactive relational aggression. However, it is considered not fully describe indirect relational aggression. This is because prank behavior in Indonesia is not always done indirectly without knowing the perpetrator.

The quality of the items of the Indonesian version of the RAS is not only evaluated by testing its content validity, but also analyzed using the Rasch model. Based on the Rasch model testing, this study found that most of the items in the Indonesian version of the RAS are accurate in measuring its measuring construct. However, one item, IP_06 (I tell my friend's secrets so that the other won't like them anymore.), does not have item accuracy in measuring indirect and proactive relational aggression. When viewed from its item content, the item represents the behavior of disclosing a friend's personal information. Disclosing a friend's personal information is indeed one form of relational aggression because it can damage the interpersonal relationship that is done indirectly (Voulgaridou & Kokkinos, 2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS. However, disclosing personal information without an apparent reason may be considered excessive behavior in interpersonal relationships and is rarely done. Additionally, the behavior of disclosing personal information is an indicator of an untrustworthy friend (Anatassia, 2018).

In this study, although some items in the Indonesian version of the RAS are less satisfactory in content validity and item accuracy, the Indonesian version of the RAS has a satisfactory factor structure consisting of four factors. This finding is consistent with previous research that found that the four-factor model is the best structure for RAS (Voulgaridou & Kokkinos, 2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire,

the Relational aggression scale (RAS. A previous study by Voulgaridou and Kokkinos (2018)particularly among adolescents, that can result in negative psychological consequences for those involved. Therefore, it is important to develop instruments to detect these incidents and understand the problem so as to design effective intervention strategies. Objective This study aims to construct a new self-report questionnaire, the Relational aggression scale (RAS also found that the one-factor and two-factor models had a model fit consistent with the data. However, this study did not find similar results. This indicates that RAS intends to measure four dimensions of relational aggression: proactive direct, reactive direct, proactive indirect, and reactive indirect.

This study found that positive correlations support the structure of the Indonesian version of the RAS among its dimensions. This indicates that the four dimensions of the RAS all measure relational aggression in different forms and functions. Additionally, the Indonesian version of the RAS has perfect convergent validity when correlated with the relational aggression subscales of the SRASBM and PCS. The SRASBM and PCS have been used in previous research to measure relational aggression (Voulgaridou & Kokkinos, 2019). Although the SRASBM and PCS are generally used to measure aggression in friendship relations, both instruments also consist of relational aggression subscales (Linder et al., 2002; Marsee & Frick, 2007; Morales & Crick, 1998). These findings indicate that the Indonesian version of the RAS has accurate measurement results when correlated with other instruments that measure similar constructs (Bandalos, 2018; Carlson & Herdman, 2012).

Overall, this research contributes to the presentation of the psychometric properties of the Indonesian version of the RAS based on the testing of content validity, item accuracy, factor structure, and convergent validity. The findings of this study do indicate that not all items of the Indonesian version of the RAS have good content validity and item accuracy. However, it cannot be directly stated that the Indonesian version of the RAS cannot be used to measure relational aggression in the Indonesian sample. This is because the testing of the validity of a measuring instrument is not singular and standalone but rather holistic and integrated with other sources of validity evidence (AERA et al., 2014; Lane, 2014; Padilla & Benítez, 2014; Rios & Wells, 2014; Sireci & Faulkner-Bond, 2014). Furthermore, this research found that the Indonesian version of the RAS has a satisfactory factor structure and convergent validity. As a means of improving item quality, future research can improve or even create new items that are more appropriate for the Indonesian context.

Conclusion

The study concludes that the RAS version of Indonesia does not have satisfactory item quality for all items. However, the RAS version of Indonesia has a good factor structure in the form of four dimensions: proactive direct, reactive direct, proactive indirect, and reactive indirect. Furthermore, the Indonesian version of the RAS has a satisfactory level of measurement accuracy when correlated with other relational aggression measurement tools. Although the RAS version of Indonesia is not perfect in terms of item quality, it can be used to measure relational aggression in the Indonesian sample.

Ethical approval

All procedures performed in this study were in accordance with the 1964 Declaration of Helsinki and its addendums or with relevant ethical standards. The ethical aspects of this study have been evaluated internally by the authors' institution. Informed consent was obtained from all participants.

Data availability statement

The data that support the findings of this study are openly available at the Open Science Framework (https://osf.io/ayzd5/?view_only=dfb0aa4f4f35406b8edf4e73ef04c817).

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Authors' contribution

DM contributed to designing the study, analyzing the data, and writing the article. GW, KD, TR, and SVT contributed to preparing the instruments, collecting data, and writing the article.

Conflict of interest

No potential conflict of interest was reported by the author(s).

References

Abell, L., & Brewer, G. (2014). Machiavellianism, self-monitoring, self-promotion and relational aggression on Facebook. Computers in Human Behavior, 36, 258–262. https://doi.org/10.1016/j.chb.2014.03.076

AERA, APA, & NCME. (2014). Standards for educational and psychological testing. American Educational Research Association.

Aiken, L. R. (1985). Three coefficients for analyzing the reliability and validity of ratings. Educational and Psychological Measurement, 45(1), 131–142. https://doi.org/10.1177/0013164485451012

Aizpitarte, A., Atherton, O. E., & Robins, R. W. (2017). The co-development of relational aggression and disruptive behavior symptoms from late childhood through adolescence. Clinical Psychological Science, 5(5), 866–873. https://doi.org/10.1177/2167702617708231

Amoh, N., & Allwood, M. A. (2020). Violence exposure and psychopathology as potential correlates and risk factors of relational aggression among diverse college students. Journal of Aggression, Maltreatment & Trauma, 29(5), 577–593. https://doi.org/10.1080/10926771.2019.1573773

Anatassia, D. F. (2018). Apakah kamu teman yang amanah? Psikologi indijinus: Teman yang amanah pada masyarakat Melayu.

Jurnal Psikologi, 13(1), 41. https://doi.org/10.24014/jp.v13i1.2769

Andrich, D. (2004). Controversy and the Rasch model: A characteristic of incompatible paradigms? Medical Care, 42(1), 7. https://doi.org/10.1097/01.mlr.0000103528.48582.7c

Bagozzi, R. P., & Heatherton, T. F. (1994). A general approach to representing multifaceted personality constructs: Application to state self-esteem. Structural Equation Modeling: A Multidisciplinary Journal, 1(1), 35–67. https://doi.org/10.1080/10705519409539961

Baker, E. R., Jensen, C. J., Moeyaert, M., & Bordoff, S. (2018). Socioeconomic status and early childhood aggression: moderation by theory of mind for relational, but not physical, aggression. Early Child Development and Care, 190(8), 1–15. https://doi.org/10.1080/03004430.2018.1524379

Bandalos, D. L. (2018). Measurement theory and applications for the social sciences. The Guilford Press.

Baumgardner, M., & Boyatzis, C. J. (2018). The role of parental psychological control and warmth in college students' relational aggression and friendship quality. Emerging Adulthood, 6(1), 72–76. https://doi.org/10.1177/2167696817712809

Bell, G. R., Crothers, L. M., Hughes, T. L., Kanyongo, G. Y., Kolbert, J. B., & Parys, K. (2018). Callous-unemotional traits, relational and social aggression, and interpersonal maturity in a sample of behaviorally disordered adolescents. Journal of Applied School Psychology, 34(1), 65–85. https://doi.org/10.1080/15377903.2017.1345814

Bond, T. G., & Fox, C. M. (2013). Applying the Rasch model: Fundamental measurement in the human sciences. Psychology Press. https://doi.org/10.4324/9781410614575

Burrell, A. M. G., Allan, J. L., Williams, D. M., & Johnston, M. (2018). What do self-efficacy items measure? Examining the discriminant content validity of self-efficacy items. British Journal of Health Psychology, 23(3), 597–611. https://doi.org/https://doi.org/10.1111/bjhp.12306

Buser, T. J., Peterson, C. H., & Kearney, A. (2015). Self-efficacy pathways between relational aggression and nonsuicidal self-injury. Journal of College Counseling, 18(3), 195–208. https://doi.org/10.1002/jocc.12014

Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. Organizational Research Methods, 15(1), 17–32. https://doi.org/10.1177/1094428110392383

Casper, D. M., Card, N. A., Bauman, S., & Toomey, R. B. (2017). Overt and relational aggression participant role behavior: Measurement and relations with sociometric status and depression. Journal of Research on Adolescence, 27(3), 661–673. https://doi.org/10.1111/jora.12306

Chen, H.-Y. Y., & Cheng, C.-L. L. (2020). Parental psychological control and children's relational aggression: Examining the roles of gender and normative beliefs about relational aggression. The Journal of Psychology, 154(2), 159–175. https://doi.org/10.1080/00223980.2019.1689904

Christensen, K. B., Engelhard, G., & Salzberger Jr, T. (2012). Ask the experts: Rasch vs. factor analysis. Rasch Measurement Transactions, 26(3), 1373–1378. https://www.rasch.org/rmt/rmt263a.htm

Clark, C. M., Dahlen, E. R., & Nicholson, B. C. (2015). The role of parenting in relational aggression and prosocial behavior among emerging adults. Journal of Aggression, Maltreatment & Trauma, 24(2), 185–202. https://doi.org/10.1080/10926771.2015.1002653

Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. Child Development, 66(3), 710–722. https://doi.org/10.1111/j.1467-8624.1995.tb00900.x

Crothers, L. M., Schreiber, J. B., Field, J. E., & Kolbert, J. B. (2009). Development and measurement through confirmatory factor analysis of the Young Adult Social Behavior Scale (YASB). Journal of Psychoeducational Assessment, 27(1), 17–28. https://doi.org/10.1177/0734282908319664

Dailey, A. L., Frey, A. J., & Walker, H. M. (2015). Relational aggression in school settings: Definition, development, strategies, and implications. Children & Schools, 37(2), 79–88. https://doi.org/10.1093/cs/cdv003

Demars, C. E. (2013). A comparison of confirmatory factor analysis and multidimensional Rasch models to investigate the dimensionality of test-taking motivation. Journal of Applied Measurement, 14(2), 179–196. http://www.ncbi.nlm.nih.gov/pubmed/23816595

Dixon, D., & Johnston, M. (2019). Content validity of measures of theoretical constructs in health psychology: Discriminant content validity is needed. British Journal of Health Psychology, 24(3), 477–484. https://doi.org/10.1111/bjhp.12373

Dumas, T. M., Davis, J. P., & Ellis, W. E. (2017). Is it good to be bad? A longitudinal analysis of adolescent popularity motivations as a predictor of engagement in relational aggression and risk behaviors. Youth & Society, 51(5), 0044118X1770031. https://doi.org/10.1177/0044118X17700319

Findley, D., & Ojanen, T. (2013). Adolescent resource control: Associations with physical and relational aggression, prosocial and withdrawn behaviors, and peer regard. International Journal of Behavioral Development, 37(6), 518–529. https://doi.org/10.1177/0165025413503420

French, D. C., Jansen, E. A., & Pidada, S. (2002). United States and Indonesian Children's and Adolescents' Reports of Relational Aggression by Disliked Peers. Child Development, 73(4), 1143–1150. https://doi.org/10.1111/1467-8624.00463

Furr, R. M. (2011). Scale construction and psychometrics for social and personality psychology. Sage Publications, Inc.

Gower, A. L., Lingras, K. A., Mathieson, L. C., Kawabata, Y., & Crick, N. R. (2014). The role of preschool relational and physical aggression in the transition to kindergarten: Links with social-psychological adjustment. Early Education and Development, 25(5), 619–640. https://doi.org/10.1080/10409289.2014.844058

Hambleton, R. K. (2005). Issues, designs and technical guidelines for adapting tests into multiple languages and cultures. In R. K. Hambleton, P. F. Merenda, & C. D. Spielberger (Eds.), Adapting educational and psychological tests for cross-cultural assessment (pp. 3–38). Erlbaum.

Jambon, M., & Smetana, J. G. (2018). Self-reported moral emotions and physical and relational aggression in early childhood:

A social domain approach. Child Development. https://doi.org/10.1111/cdev.13174

Johnston, M., Dixon, D., Hart, J., Glidewell, L., Schröder, C., & Pollard, B. (2014). Discriminant content validity: A quantitative methodology for assessing content of theory-based measures, with illustrative applications. British Journal of Health Psychology, 19(2), 240–257. https://doi.org/10.1111/bjhp.12095

Karlina, D., Muttaqin, D., & Tondok, M. S. (2021). Relational aggression toward ex-boy/girlfriend: The role of narcissism and quality of previous romantic relationships among undergraduate students. The International Journal of Indian Psychology, 9(2), 1500–15012. https://doi.org/10.25215/0902.154

Kawabata, Y., & Crick, N. R. (2016). Differential associations between maternal and paternal parenting and physical and relational aggression. Asian Journal of Social Psychology, 19(3), 254–263. https://doi.org/10.1111/ajsp.12139

Kawabata, Y., Nakamura, M. S., & De Luna, M. J. F. (2020). A mediation model for relational aggression, victimization, attachment, and depressive symptoms in Guam: A gender-informed approach. Journal of Pacific Rim Psychology, 14, e8. https://doi.org/10.1017/prp.2020.4

Kawabata, Y., Tseng, W.-L., Murray-Close, D., & Crick, N. R. (2012). Developmental trajectories of Chinese children's relational and physical aggression: Associations with social-psychological adjustment problems. Journal of Abnormal Child Psychology, 40(7), 1087–1097. https://doi.org/10.1007/s10802-012-9633-8

Kline, R. B. (2016). Principles and practice of structural equation modeling. The Guilford Press.

Knight, N. M., Dahlen, E. R., Bullock-Yowell, E., & Madson, M. B. (2018). The HEXACO model of personality and dark triad in relational aggression. Personality and Individual Differences, 122, 109–114. https://doi.org/10.1016/j.paid.2017.10.016

Kokkinos, C. M., Kountouraki, M., Voulgaridou, I., & Markos, A. (2020). Understanding the association between big five and relational aggression: The mediating role of social goals and friendship jealousy. Personality and Individual Differences, 160(February), 109946. https://doi.org/10.1016/j.paid.2020.109946

Kokkinos, C. M., & Voulgaridou, I. (2017). Links between relational aggression, parenting and personality among adolescents. European Journal of Developmental Psychology, 14(3), 249–264. https://doi.org/10.1080/17405629.2016.1194265

Kokkinos, C. M., & Voulgaridou, I. (2019). Relational aggressors' coping: The moderating role of empathy. Journal of School Violence, 18(4), 536–549. https://doi.org/10.1080/15388220.2019.1597728

Kokkinos, C. M., Voulgaridou, I., & Markos, A. (2016). Personality and relational aggression: Moral disengagement and friendship quality as mediators. Personality and Individual Differences, 95, 74–79. https://doi.org/10.1016/j.paid.2016.02.028

Kraft, C., & Mayeux, L. (2018). Associations among friendship jealousy, peer status, and relational aggression in early adolescence. The Journal of Early Adolescence, 38(3), 385–407. https://doi.org/10.1177/0272431616670992

Kushner, S. C., Herzhoff, K., Vrshek-Schallhorn, S., & Tackett, J. L. (2018). Depression in early adolescence: Contributions from relational aggression and variation in the oxytocin receptor gene. Aggressive Behavior, 44(1), 60–68. https://doi.org/10.1002/ab.21724

Lane, S. (2014). Validity evidence based on testing consequences. Psicothema, 26(1), 127–135. https://doi.org/10.7334/psicothema2013.258

Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. Di, Deater-Deckard, K., Dodge, K. A., Malone, P. S., Oburu, P., Pastorelli, C., Tapanya, S., Uribe Tirado, L. M., Zelli, A., Al-Hassan, S. M., Peña Alampay, L., Bacchini, D., Bombi, A. S., Bornstein, M. H., & Chang, L. (2012). Boys' and girls' relational and physical aggression in nine countries. Aggressive Behavior, 38(4), 298–308. https://doi.org/10.1002/ab.21433

Linacre, J. M. (2002). What do infit and outfit, mean-square and standardized mean. Rasch Measurement Transactions, 16(2), 878. https://www.rasch.org/rmt/rmt162f.htm

Linder, J. R., Crick, N. R., & Collins, W. A. (2002). Relational aggression and victimization in young adults' romantic relationships: Associations with perceptions of parent, peer, and romantic relationship quality. Social Development, 11(1), 69–86. https://doi.org/10.1111/1467-9507.00187

Little, T. D., Henrich, C. C., Jones, S. M., & Hawley, P. H. (2003). Disentangling the "whys" from the "whats" of aggressive behaviour. International Journal of Behavioral Development, 27(2), 122–133. https://doi.org/10.1080/01650250244000128

Marsee, M. A., Barry, C. T., Childs, K. K., Frick, P. J., Kimonis, E. R., Muñoz, L. C., Aucoin, K. J., Fassnacht, G. M., Kunimatsu, M. M., & Lau, K. S. L. (2011). Assessing the forms and functions of aggression using self-report: Factor structure and invariance of the Peer Conflict Scale in youths. Psychological Assessment, 23(3), 792–804. https://doi.org/10.1037/a0023369

Marsee, M. A., & Frick, P. J. (2007). Exploring the cognitive and emotional correlates to proactive and reactive aggression in a sample of detained girls. Journal of Abnormal Child Psychology, 35(6), 969–981. https://doi.org/10.1007/s10802-007-9147-y

Morales, J. R., & Crick, N. R. (1998). Self-report measure of aggression and victimization. Unpublished Measure.

Mukhtar, S., & Mahmood, Z. (2018). Moderating role of perceived social support between perceived parenting styles and relational aggression in adolescents. Journal of Aggression, Maltreatment & Trauma, 27(8), 831–845. https://doi.org/10.1080/10926771.2018.1468842

Murray-Close, D., Nelson, D. A., Ostrov, J. M., Casas, J. F., & Crick, N. R. (2016). Relational aggression: A developmental psychopathology perspective. In Developmental Psychopathology (pp. 1–63). John Wiley & Sons, Inc. https://doi.org/10.1002/9781119125556.devpsy413

Oka, M., Brown, C. C., & Miller, R. B. (2016). Attachment and relational aggression: Power as a mediating variable. The American Journal of Family Therapy, 44(1), 24–35. https://doi.org/10.1080/01926187.2015.1105716

Onishi, A., Kawabata, Y., Kurokawa, M., & Yoshida, T. (2012). A mediating model of relational aggression, narcissistic orien-

tations, guilt feelings, and perceived classroom norms. School Psychology International, 33(4), 367–390. https://doi.org/10.1177/0143034311421433

Osteen, P. (2010). An introduction to using multidimensional item response theory to assess latent factor structures. Journal of the Society for Social Work and Research, 1(2), 66–82. https://doi.org/10.5243/jsswr.2010.6

Ostrov, J. M., & Crick, N. R. (2007). Forms and functions of aggression during early childhood: A short-term longitudinal study. School Psychology Review, 36(1), 22–43. https://doi.org/10.1080/02796015.2007.12087950

Padilla, J. L., & Benítez, I. (2014). Validity evidence based on response processes. Psicothema, 26(1), 136–144. https://doi.org/10.7334/psicothema2013.259

Rios, J., & Wells, C. (2014). Validity evidence based on internal structure. Psicothema, 26(1), 108–116. https://doi.org/10.7334/psicothema2013.260

Rust, J., Kosinski, M., & Stillwell, D. (2021). Modern psychometrics: The science of psychological assessment. Routledge.

Sandberg, J., Meservy, M. V., Bradford, A., & Anderson, S. (2018). Examining the influence of relational aggression on sexual satisfaction with attachment behaviors as a potential mediator. Journal of Sex & Marital Therapy, 44(5), 425–437. https://doi.org/10.1080/0092623X.2017.1405307

Satorra, A., & Saris, W. E. (1985). Power of the likelihood ratio test in covariance structure analysis. Psychometrika, 50(1), 83–90. https://doi.org/10.1007/BF02294150

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. The Journal of Educational Research, 99(6), 323–338. https://doi.org/10.3200/JOER.99.6.323-338

Sireci, S., & Faulkner-Bond, M. (2014). Validity evidence based on test content. Psicothema, 26(1), 100–107. https://doi.org/10.7334/psicothema2013.256

Soekoto, Z. A., Muttaqin, D., & Tondok, M. S. (2020). Kualitas pertemanan dan agresi relasional pada remaja di Kota Surabaya. Jurnal Psikologi, 16(2), 188–201. https://doi.org/10.24014/jp.v16i2.9684

Stauffacher, K., & DeHart, G. B. (2006). Crossing social contexts: Relational aggression between siblings and friends during early and middle childhood. Journal of Applied Developmental Psychology, 27(3), 228–240. https://doi.org/10.1016/j.appdev.2006.02.004

Tennant, A., McKenna, S. P., & Hagell, P. (2004). Application of Rasch analysis in the development and application of quality of life instruments. Value in Health, 7, S22–S26. https://doi.org/10.1111/j.1524-4733.2004.7s106.x

Terwee, C. B., Prinsen, C. A. C., Chiarotto, A., Westerman, M. J., Patrick, D. L., Alonso, J., Bouter, L. M., de Vet, H. C. W., & Mokkink, L. B. (2018). COSMIN methodology for evaluating the content validity of patient-reported outcome measures: a Delphi study. Quality of Life Research, 27(5), 1159–1170. https://doi.org/10.1007/s11136-018-1829-0

Updegraff, K. A., Thayer, S. M., Whiteman, S. D., Denning, D. J., & McHale, S. M. (2005). Relational aggression in adolescents' sibling relationships: Links to sibling and parent-adolescent relationship quality. Family Relations, 54(3), 373–385. https://doi.org/10.1111/j.1741-3729.2005.00324.x

van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. European Journal of Developmental Psychology, 9(4), 486–492. https://doi.org/10.1080/17405629.2012.686740

Vitaro, F., Brendgen, M., & Barker, E. D. (2006). Subtypes of aggressive behaviors: A developmental perspective. International Journal of Behavioral Development, 30(1), 12–19. https://doi.org/10.1177/0165025406059968

Voulgaridou, I., & Kokkinos, C. M. (2015). Relational aggression in adolescents: A review of theoretical and empirical research. Aggression and Violent Behavior, 23, 87–97. https://doi.org/10.1016/j.avb.2015.05.006

Voulgaridou, I., & Kokkinos, C. M. (2018). The Relational Aggression Scale (RAS): Psychometric properties of a newly developed measure of relational aggression. Revue Européenne de Psychologie Appliquée, 68(1), 11–22. https://doi.org/10.1016/j.erap.2017.12.001

Voulgaridou, I., & Kokkinos, C. M. (2019). Measuring relational aggression in children and adolescents: A systematic review of the available instruments. Aggression and Violent Behavior, 46, 82–97. https://doi.org/10.1016/j.avb.2019.02.002

Voulgaridou, I., & Kokkinos, C. M. (2020). The mediating role of friendship jealousy and anxiety in the association between parental attachment and adolescents' relational aggression: A short-term longitudinal cross-lagged analysis. Child Abuse & Neglect, 109, 104717. https://doi.org/https://doi.org/10.1016/j.chiabu.2020.104717

Waugh, R. F., & Chapman, E. S. (2005). An analysis of dimensionality using factor analysis (true-score theory) and Rasch measurement: What is the difference? Which method is better? Journal of Applied Measurement, 6(1), 80–99. http://www.ncbi.nlm.nih.gov/pubmed/15701946

Woodin, E. M., Sukhawathanakul, P., Caldeira, V., Homel, J., & Leadbeater, B. (2016). Pathways to romantic relational aggression through adolescent peer aggression and heavy episodic drinking. Aggressive Behavior, 42(6), 563–576. https://doi.org/10.1002/ab.21651

Zhang, Z., & Yuan, K.-H. (2018). Practical statistical power analysis using Webpower and R. ISDSA Press. https://doi.org/10.35566/power