RELATIONAL AGGRESSION IN SIBLING CONTEXT: SCALE REVISION AND FACTOR ANALYSIS IN A TAIWANESE SAMPLE

Anna Ong Wen Huey Sanggari Krishnan Wirawahida Kamarul Zaman

Department of Psychology and Counselling Universiti Tunku Abdul Rahman (Kampar campus)

ABSTRACT

The Forms and Functions of Aggression Questionnaire (Little, Jones, Henrich, & Hawley, 2003) is widely used to measure the aggressive behavior in the peer context by many researchers. It measures both overt and relational aggression, as well as two functions of aggressive behavior: reactive and instrumental. However, it focuses on the aggressive behavior in the peer setting, but not in the sibling context. The aim of this study was to adapt this scale in the sibling context. Respondents were 384 primary school students aged 10 to 12 years old who agreed to participate and met the inclusion criteria completed both measurements (The Forms and Functions of Aggression Questionnaire, and Sibling Inventory of Differential Experience). Confirmatory factor analysis confirmed a second-order model with three subdomains (pure relational aggression, reactive-relational aggression, and instrumental-relational aggression). Moderate and significant predictive validity was found. In sum, the Forms and Functions of Aggression Questionnaire is considered a suitable measure to be used in the sibling context with acceptable validity and reliability indices.

Keywords: perceived parental differential treatment; relational aggression; factor analysis; sibling relationship

INTRODUCTION

Throughout an individual's lifespan, sibling relationships are one of the closest and most relationships (Buhrmester intimate Furman, 1990). Moreover, it is a longlasting and non-voluntary relationship. In sibling relationship, there are emotionally ambivalent conflicts in some cases or warm in others; and it can be frequently mixed Nonetheless, (Brody, 2004). sibling relationship may act as a 'training ground' for both siblings (Stauffacher & DeHart, 2006). Hence, children may imitate and learn some maladaptive behavior from siblings.

In a family, parents will most likely treat their children differently depending on children's sex and birth order (Roskam & Meunier, 2009). However, such parental differential treatment might evoke negative perceptions among those children. Siblings always competing for parental are of regardless investment, parent's or favoritism (Lalumiere, involvement Quinsey, & Craig, 1996). Children who perceive the parental differential treatment as unfair are more likely to exhibit jealousy, rivalry (Daniels & Plomin, 1985; Scholte, Engels, Kemp, Harakeh, & Overbeek, 2007) and greater animosity (McHale et al., 1995) toward their siblings. This particularly happens to those who perceive themselves as being unfavored by their parents. Thus, it may lead to greater likelihood of performing relational aggression against their siblings.

Relational Aggression in the Sibling Context

Crick and Grotpeter (1995) defined relational aggression as harming the targeted victims through purposeful manipulation and damaging or threatening act to damage relationships. It includes behavior such as giving the targeted victim the 'silent treatment', threatening to end a relationship, using social exclusion as a form of damaging the feeling of acceptance or relationship of the victims (Crick & Grotpeter, 1995).

In Social Information Processing Theory (Dodge, 1986), Dodge differentiated the cognitive processes between reactive and instrumental aggressor aggressor. Reactive aggressors have often been related to hostile attribution bias. They may react aggressively even in an ambiguous situation (Crick & Dodge, 1996). Moreover, they may perform aggression when the target person something undesirable. However. instrumental aggressor will generate an instrumental goal and ensure aggression is an effective way to get what they want. Thus, they tend to expect a desirable outcome as the result of their use of aggression (Shaffer, 2002).

An empirical study conducted by O'Brien (1999) reported that siblings in middle childhood using relationally aggressive methods more often than both verbal and physical aggression (as cited in Updegraff, Thayer, Whiteman, Denning, & McHale, 2005). During the period of middle

childhood, individuals experience significant growth and changes in cognitive, social, and linguistic skills. Therefore, the relational aggression become more covert, confrontational with the target and more often use the interactions with others to meet the objective of relational aggression (Crick et al., 2001). In addition, children spent more time with their siblings. They share a wider range of contexts and experiences as well as higher levels of intimacy. The relationship qualities provided them a wider range of information that can later be used as ammunition to hurt each other (O'Brien, 1999). Moreover, they are competing for attention from caregivers, such as: parents or elderly. Therefore, this research focused on the relational aggression of primary school students with their sibling.

Measurement of Relational Aggression with Siblings

Previous studies on relational aggression have frequently used different sources of information. The choice of informant depends on the age of target child. For preschool and school age child, parent and teacher reports were widely used (Archer, 2005). However, the most common method of measurements is teacher and peer nomination. These informants have greater access to the most accurate information about a child's relational aggression within peer context (Archer, 2004). On the other hand, relational aggression with siblings can be assessed by requiring either siblings or either one of the sibling to rate the relational aggression questionnaire (RSEQ; Crick & Grotpeter, 1996; Yu & Gamble, 2008).

Hence, researchers would be able to assess their perception of how frequently they performed relational aggression toward their sibling (O' Brien, 1999). Across parent report, teacher report and self-report, which assessed respondents' likelihood relational aggression behavior performed by the target child either in a school setting or home setting (Crick & Grotpeter, 1996). For instance, the frequency or how the statement applies to their interaction style with sibling (such as, 'How often do you purposefully leave your sibling out when it is time to hang out or do an activity?').

Other than that, relational aggression within sibling context can be measured by observing their interaction throughout playtime (Stauffacher & DeHart, 2006); require trained experimenters to code their behavior. Other than this, they can require parents to view the videotape and fill up related questionnaire (Stauffacher & DeHart, 2006).

On the other hand, behavioral tendencies can be measured by using teacher rating scale or self-report; in order to indicate whether their aggressive tendencies belong to reactive or instrumental (Hubbard et al., 2002; Smithmyer, Hubbard, & Simons, 2000). An example of the reactive item is 'When this child has been hassled or threatened, he gets angry easily and strikes back'. However, for instrumental item is 'This child threatens or bullies others in order to get his own way.'

The Forms and Functions of Aggression Questionnaire by Little et al. (2003) aimed to examine both of the form of aggressive

behavior (overt versus relational) as well as the functions of aggression (instrumental versus reactive). The target group of this instrument is adolescent between 11 to 16 years old. This scale tends to examine the aggressive behavior that happens in the peer context. Little et al. (2003) criticized that existing assessment scale tends to mix up for the form and function, thus it may cause some confusion among participants. Items were adapted from the measures used by Crick and colleagues to assess both types of aggressive behaviors (overt and relational) and the measures that used by Dodge and colleagues to assess both the aggressive functions (reactive and instrumental). The scales showed acceptable internal consistency; such as: 'Pure' relational aggression (r = .62), reactive relational aggression (r = .63), & instrumental relational aggression (r = .78).

The mentioned scale and other relevant scales commonly used in examining the aggressive behavior within the peer context (e.g., Toomey, Card, & Casper, 2014; Williford & Boulton, 2013). Meta-analysis of these topics found that those who involved in relational aggression reported higher scores on the items of "pure" relational aggression. However, the score for subsequent subscale was depending on their tendency of involving in aggression. In sum, researchers found that using the method of self-report can get a clearer picture of their awareness of own behavior; and they may report experience that other informants may not aware (Prinstein, Boergers, & Verberg, 2001). However, these scales are targeted on relational aggression that happen within peer context.

Updegraff, Thayer, Whiteman, Denning, and McHale (2005) found that relational greater aggression is associated with negativity and it disrupts the feelings of the intimacy in context of sibling relationship. However. the relational aggression is less likely to be highlighted or observed. Therefore, this study aims to translate and adapt The Forms and Functions of Aggression Questionnaire in the sibling context. By understanding the frequency and functions of relational aggression, parents or caregivers may develop a better strategy to intervene in this issue. Most of the past studies have focused on the Western relational perspective of aggression. However, the findings might not be applicable to Asian context. Cross cultural differences and collectivist nature could also make some changes in the findings. Some research has found that relational aggression could be exhibited extensively by all of the members in collectivist communities (Hart et al., 1999). Therefore, it is better to look at Taiwanese children as parents and school authorities could identify come solutions to overcome this problem.

METHOD

Respondents

Purposive sampling was used in this study. Primary schools from five regions (New Taipei City, Hsinchu, Tainan, ZhangHua, and YunLin) of Taiwan were randomly sampled from a list of all primary schools in these regions. In the total sample,

respondents were 384 primary school students, in forth (n = 89; 23.2%), fifth (n = 87; 22.7%), and sixth (n = 208; 54.2%) grade. The gender distribution were (boys, n = 173; girls, n = 211). This sample was selected based on the following inclusion criteria: (1) signed parental consent, (2) age ranging from 10 to 12 years old, (3) living permanently with the mother, (4) come from family with two children, and (5) the age difference is within four years (elder or younger).

Procedures

All measures were translated from English into Chinese. Parental consent were obtained prior to data collections. In order to ensure the nature of the sibling pairs, teachers ensured that there were only two children in the respondents' family and the age difference between the respondents and their siblings was within four years. On the day of data collection, written consent was obtained from the respondents. The data collection was conducted in primary school settings with the assistance of the teachers.

Measures

The Forms and Functions of Aggression Questionnaire (Little et al., 2003).

Relational aggression was assessed by The Forms and Functions of Aggression Questionnaire, which contains 15 items. In order to administer it in Taiwanese children, this scale was revised and translated into

Chinese. The Chinese translation progressively refined through the suggestions of some Taiwanese experts with English fluency to ensure the consistent meaning between the original scale and the corresponding items of the Chinese version. The differences between the original scale and this revised version are as follows: revised version is only focused on relational aggression and changed to 6-Likert scale. The original instrument consists of both relational and physical aggression, and rating based on a 5-point scale. Besides, original scale was focused on peer context; however, the revised version focuses on sibling context. Hence, the statements were modified to suit in a sibling context. For instance, "I often tell my friends to stop liking someone to get what I want" into "I often tell my family members to stop liking my sibling to get what I want". The structure of scale remained. The subscales in this measure include frequency and the functions of relational aggression, such as "instrumental aggression" (e.g., To get what I want, I spread rumors about my siblings) and "reactive aggression" (e.g., In daily life, if my siblings say something that I don't like, I will ignore him/her). The participants were required to rate the frequency and suitability of statements based on a 6-point Likert scale (1 = Not true at all to 6 =completely true).

A higher score in the scale of the "frequency" and "functions" indicates a higher likelihood of exhibiting relational aggressive behavior toward siblings, the motive of exhibiting relational aggressive behavior. The reliability of frequency of relational aggression, reactive aggression,

and instrumental aggression was .62, .63, and .78 respectively (Little et al., 2003). This result indicates satisfactory internal consistency.

Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985).

All participants were asked to assess the degree to which their mothers treated the differently. This children scale developed based on the Distributive Justice Viewpoint. Individual tends to observe and make judgment toward parental treatment. SIDE includes nine items that assess two main factors: differential affection and differential differential control. The affection scale measures maternal pride, interest. favoritism, enjoyment, and sensitivity (e.g., our mother enjoys doing things with us). The differential control scale measures maternal strictness. punishment, blame, as well as discipline (e.g., our mother punishes us for our misbehavior). Participants were required to rate on a five-point Likert scale (1 = applies)more to my sibling, 2 = applies a little moreto my sibling, 3 = applies equally to me and my sibling, $4 = applies \ a \ little \ more \ to \ me$, 5 = applies more to me) about how their mother treats them compared to their siblings. The reliabilities for affect scale and control scale were, .84 and. 79 respectively (Kowal, Krull, & Kramer, 2006). In order to assess the degree of parental differential treatment, score in each item was recoded as an absolute score. For instance, 1 and 5 were

recoded as 2 which indicate that the maternal treatment is very different; 2 and 4 were recoded as 1 which indicates that the maternal treatment is slightly different; and 3 was recoded as 0 which indicates a similar degree of maternal treatment. Higher scores indicated higher affection or control from their mothers, while lower scores indicated otherwise. Mid score indicated that siblings were treated equally in the family.

Analytic Strategies

Analyses were conducted using SPSS 22 and Mplus 6.0. All analyses used raw scores. To examine the factor structure of the Forms and Functions of Aggression Questionnaire, a confirmatory factor analysis (CFA) was conducted with Mplus Statistical package (Version 6.0; Muthén & Muthén, 2010) using maximum likelihood estimates. This analysis will enable the fit of hypothesized second-order model to be assessed. To test the internal consistency of the scale, Cronbach's alpha was computed. Finally, predictive validity will be assessed by computing the relationship between the Forms and Functions of Aggression Questionnaire total scores and the SIDE total scores.

RESULTS

Several fit indices were used in evaluating the adequacy of models, including a χ^2 statistics, the comparative fit index (CFI), Tucker-Lewis Index (TLI), the root mean square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). These are the most regularly used fit indices among several

others. This study followed the cutoff criteria that recommended by Hu and Bentler (1999) and Steiger (2000). Acceptable model fit was defined by the following criteria: CFI (> .90), RMSEA (< .10), and SRMR (< .05).

Confirmatory Factor Analysis

the Maximum Likelihood method As assumes multivariate normality, this assumption can be tested through the inspection of univariate normality (Kline, 2005). Table 1 presents all of the absolute values of skewness and kurtosis. All of the values are within the acceptable range. Thus, we can assume multivariate normality in this Multicollinearity was examined through the squared multiple correlation (R^2) values. Values greater than .90 indicate multicollinearity. Examination of R^2 values showed that they ranged from .23 to .75.

A second order model CFA model was tested. This model stipulating 15 items generated good fit, χ^2 (87) = 362.04, p < .05, CFI = .90, RMSEA = .09, and SRMR = .05. With larger sample sizes, relatively small discrepancies between the observed data matrix and the predicted matrix can result in significant χ^2 values. Meanwhile, it indicates that this structure was not perfectly fit to the sample.

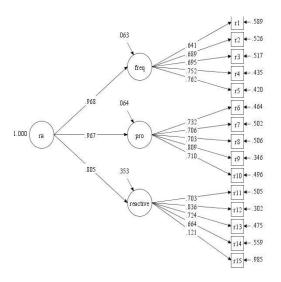


Figure 1. Path diagram with standardized loadings and residual variances (Second-order CFA model).

Reliability

The internal consistency of this scale was computed. The result of reliabilities for relational frequency, instrumental aggression, and reactive relational aggression .83. .85. and .86 were respectively. Additionally, the overall reliability of this scale was .93. Hence, it allows us to assume, good to very good levels of internal consistency of the three factors of the relational aggression scale.

Predictive Validity

Previous studies found that children who aware the differential treatments from parents tend to have a stronger feeling of envy. Subsequently, it may lead to aggressive behavior. Hence, this study would like to examine whether perceived maternal differential treatment will predict the relational aggression of children.

Table 1 present the correlation of these variables. This study found that the degree of perceived maternal differential treatment is positively correlated with the frequency of relational aggression (r = .20). It indicates that children who perceived more differential treatment from mothers are more likely to perform relational aggression to their siblings.

Moreover, the degree of perceived maternal differential treatment is positively correlated with instrumental (*r*

= .25) and reactive relational aggression (*r* = .28). In other word, children who perceived more maternal differential treatment are more likely to perform relational aggression as revenge or a tool to achieve certain goal.

Table 1. The correlation of relational aggression and maternal differential treatment.

	PDT	Freq	Pro	React
PDT	-			
Freq	.20**	-		
Pro	.25**	.78**	-	
React	.28**	.68**	.68**	-

Note. PDT = perceived maternal differential treatment; Freq = frequency of relational aggression; Pro = instrumental relational aggression; React = reactive relational aggression.

** $p \le .001$

DISCUSSION

The Forms and Functions of Aggression Questionnaire was developed as a self-report measure to examine the frequency and functions of aggressive behavior. The current study supported the factor structure, reliability, and validity of the scale.

This study identified a higher-order factor model for the explanation of relational aggressive behavior in the sibling context. All items are strongly loaded on the appropriate factor. The reliabilities of the three subscales with the lowest Cronbach's alpha of .83 are adequate and relatively high. The finding provides empirical support for the three subscales that was found in other studies (Little et al., 2013). Three subdomains were strongly correlated, thus, a more parsimonious factor structure in which all subdomains were combined into a single factor is preferable.

The relationship of relational aggression and perceived maternal differential treatment was found in this study and other studies. Kowal, Kramer, Krull, and Crick (2002) found those children who observe a discrepancy between what they receive and what their sibling receive, tend to display negative behavioral reactions. Apart from that, parents may apply different treatment, according to the children's behavior (Chen & Luster, 2002). There is an interrelated relationship between relational aggression differential and perceived parental treatment. Children who perceive themselves received a differential treatment tend to perform relational aggression against their siblings. Parents may also provide different treatment according children's behavior (Chen & Luster, 2002). Thus, children who performed more relational aggression may receive parental practice or disciplinary strategy which differ from their sibling. These subdomains were moderately correlated with perceived maternal differential treatment.

Thus, future researchers may explore the other possible parenting behavior that may influence such relationship.

Limitations and Future Research

This study is a preliminary study. Therefore, there are several limitations may need to consider and improve in the future. Firstly, there were 384 primary school students who responded in this study. However, this group of respondents was recruited from a few regions of Taiwan. Therefore, the results of this study cannot be generalized to the other population. Even though, Taiwan is one of the Eastern countries, but the validation of this scale in Malaysian context remained unknown. Malaysian researchers may consider validating it before the administration.

Besides, both measurements were merely based on the child-report method. Their responses may be biased due to social desirability. Multiple-sources of information from different informants can portray a holistic picture of sibling interaction. Future researchers may collect the perception of sibling dyads as well as their parents. The discrepancy between their perceptions may be helpful in exploring the nature of family context.

Thirdly, the respondents of this study were limited to children from families with two kids. The nature of the sibling relationship may vary according to the number of siblings. Thus, future research may examine the difference between different types of sibling relationship.

CONCLUSION

Based on these findings, it can be concluded that the model of relational aggression measurement could be highlighted and can be used by researchers who study on the sibling relationship, especially in Asian context. Apart from that, these findings reinforce the viewpoint that these three components (the frequency of relational aggression, reactive-relational aggression, and instrumental-relational aggression) are moderately correlated.

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