

# Do Mothers and Fathers Perceive Their Child's Problems and Prosocial Behaviors Differently?

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**Abstract** The aim of this study was to compare mothers' and fathers' ratings of their young children's problems and prosocial behaviors using the Korean version of the Strengths and Difficulties Questionnaire (SDQ). Furthermore, the present study examined whether parental depressive symptoms were linked to agreement between mothers' and fathers' ratings of their young children's behavior. The sample consisted of 302 parents whose 5-year-old children attended childcare centers in Korea. The parents completed the Korean version of the SDQ and the Center for the Epidemiological Studies of Depression short form. The results revealed that both the mothers' and fathers' reports moderately correlated for both boys and girls, with greater correlations for externalizing problems than for internalizing problems. Whereas there were no significant differences between mothers' and fathers' reports of their children's problems, mothers reported significantly more prosocial behaviors than fathers did, regardless of the child's gender. Polynomial regression showed that mothers' reports were more strongly associated with fathers' report of their children's prosocial behavior when mothers reported lower levels of depressive symptoms. The findings provide empirical evidence that mothers and fathers reported more similarities than differences in assessing child problems. Further analyses suggest considering maternal depressive symptoms when interpreting interparental agreement on their children's prosocial behaviors.

**Keywords** Prosocial behavior · Rating agreement · Child's problems · Strengths and Difficulties Questionnaire · Maternal depressive symptoms

## Introduction

Parents can provide important information on child adjustment given their natural close proximity. The way parents perceive and evaluate their child's behavior has been an important method to obtain information on child development. Moreover, the role of parents as a major informant regarding child adjustment has been particularly emphasized upon for young children since children under the age of 11 years appear to have difficulties judging and reporting their emotions or behaviors (Becker et al. 2004).

Researchers have investigated how parental information on child adjustment coincides with information collected from different sources. As an example, parental ratings have been compared with those of teachers. A meta-analysis of 269 samples across 119 studies reported low to moderate cross-informant correlations, including a parent-teacher correlation of .27 (Achenbach et al. 1987). A recent quantitative review of 341 studies reported low to moderate levels of overall cross-informant correspondence ( $r = .28$ ), revealing that the parent-teacher correspondence estimates in reports of children's mental health were .21 for internalizing problems and .28 for externalizing problems (De Los Reyes et al. 2015). Parent-teacher cross-informant correlations for problem scale scores varied across 21 societies, with an estimated mean correlation of .29 for total problems across societies (Rescorla et al. 2014). In a comprehensive study, parent-teacher cross-informant correlations were significantly higher for externalizing

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problems as compared to those for internalizing problems. Empirical studies using representative measures such as the Child Behavior Checklist (CBCL) and the Teachers Report Form (TRF) (e.g., Berg-Nielsen et al. 2012; Efstratopoulou et al. 2012; Grietens et al. 2004; Mesman and Koot 2000) or those using the Social Skills Rating System (e.g., Dinnebeil et al. 2013) have shown that parents' evaluations are significantly related to those of teachers.

As another comprehensive screening instrument to assess child adjustment, the Strengths and Difficulties Questionnaire (SDQ) were used to obtain information on child adjustment from different sources. Psychometric properties of SDQ ratings from parents and teachers have been evaluated through both comprehensive reviews (Kersten et al. 2016; Stone et al. 2010) and empirical studies (Hill and Hughes 2007; Sanne et al. 2009). For instance, Goodman et al. (2012) showed that the cross correlation between parents and teachers was .30 for internalizing problems, .48 for externalizing problems, and .25 for prosocial behaviors, when comparing the SDQ subscales among British parents, teachers, and children. Using five subscales of the SDQ, the cross correlation between parents and teachers for total difficulties was .52, with the highest correlation being hyperactivity at .54 (Widenfelt et al. 2003). In the same study, the lowest cross correlation between parents and the teachers was found for prosocial behaviors at .23 (Widenfelt et al. 2003). A systemic review regarding the psychometric properties of the SDQ in young children found that cross-informant consistency was weak to moderate (Kersten et al. 2016).

Although previous studies have compared ratings on child behavior between parents and other informants such as teachers, fewer studies have examined the concordance among both parents. Mothers and fathers observe their children in the same setting, whereas parents and teachers observe children in different circumstances. Limited studies have investigated interparental agreement, and most of these studies have predominantly used the CBCL (Bingham et al. 2003; Grietens et al. 2004; Luoma et al. 2004; Mascendaro et al. 2012; Schroeder et al. 2010). In one of the few studies that have used the SDQ found that, in England, mothers' and fathers' ratings of child behavior were significantly correlated (Dave et al. 2008). Griffith et al. (2014) showed that, when rating siblings of children with autism through SDQ subscale scores, mothers' and fathers' ratings did not differ significantly, besides for prosocial behavior scores. Another study in China that used the SDQ revealed that the fathers' ratings of their primary school children correlated moderately to highly with mothers' ratings, regardless of the child's gender (Mellor et al. 2011). That study also found a higher correlation between ratings for externalizing problems than those for emotional problems. However, research about the variability in mothers' and fathers' reports of young children is still relatively limited.

When researchers incorporate reports from multiple informants for the psychological assessment of children, informants' reports of the same behavior often disagree. While it has been recommended to use the multi-informant approach in studying child behaviors, difficulties exist in understanding informant discrepancies when they arise (De Los Reyes 2013). Further, informant discrepancies are considered to be more than a measurement error, as they can convey meaningful information (Achenbach 2011; De Los Reyes 2011). Discrepancies may indicate systematic variability in what informants attribute to be the causes of behavior, informants' decision thresholds, and the contexts within which informants observe child behavior and/or the contexts in which behavioral reports are taken (De Los Reyes 2011). Several approaches have previously analyzed or compared difference scores on informant reports, by including raw scores and standardized scores (e.g., Laird and Weems 2011). A recent emerging analytic approach advocates using statistical interactions within polynomial regressions for the study of informant discrepancies. Empirical studies have shown that multi-informant statistical interactions can provide meaningful information for interpreting informant discrepancies in psychological assessment (De Los Reyes et al. 2013; Laird and De Los Reyes 2013; Laird and LaFleur 2016). It would be interesting to investigate agreement on child behaviors between mothers and fathers in the family context based on the examination of this statistical interaction.

Furthermore, a limited number of studies explain how disagreement among parents in reports of child behavior from parents arises. Earlier, Bingham et al. (2003) explained the disagreement in parental ratings of child behaviors in three different ways. First, it could reflect the decreased validity of fathers' rating. This explanation assumes that mothers' ratings are more valid than fathers' ratings are because mothers are considered to interact more closely with their children than fathers are. Second, it shows that different child behaviors manifest in the relationship with mothers vs. fathers. This explanation suggests that children would behave differently when they interact with their mothers vs. their fathers. Third, it could reflect maternal and paternal psychopathology, which research has found to differentially affect child behavioral problems.

One form of parental psychopathology associated with this disagreement could be parental depression, for which researchers have suggested two opposing models in the integrative reviews (Ordway 2011; Richters 1992). In the distortion model, researchers have found that depressed individuals overgeneralize their children's psychopathology, suggesting that the possible presence of parental bias may be due to depression (Kinsman and Wildman 2001). According to the model, depressed mothers overstate and overgeneralize their children's behavior problems with

cognitive and perceptual distortions (Chilcoat and Breslau 1997). In contrast, the accuracy model indicates that depressed mothers show no overall tendency to perceive their children as more maladaptive than other children, suggesting that depressed individuals perceive their children somewhat accurately and do not adopt an unrealistically optimistic perspective (Conrad and Hammen 1989). Using the SDQ, parental distress as measured by a 12-item general health questionnaire was found to be most strongly associated with parental ratings of child psychopathology, along with parent-rated family functioning and child physical health problems (Collishaw et al. 2012). However, results of empirical studies do not consistently support the depression-distortion hypothesis. Moreover, such studies have focused mainly on mothers and have excluded fathers as informants. Less is known about fathers' reports on child behaviors and the utility of fathers' reports. Moreover, most studies have compared fathers' and mothers' reports on behavior problems rather than on prosocial behaviors. The present study is unique in that it used both mothers' and fathers' reports, including reports on both problem behaviors and prosocial behaviors, for a nonclinical sample of preschool children. It also investigates whether parental depressive symptoms influence interparental agreement in child behavior ratings.

The primary aim of this study was to compare and contrast both mothers' and fathers' ratings of child problems and prosocial behaviors in Korea. Comparing mothers' and fathers' assessments of child problems and prosocial behaviors is of particular interest, given that the fathers' role and paternal involvement in child rearing have recently become more pronounced in Korea, with the emergence of a more egalitarian gender ideology having emerged. For example, the topic of several reality television shows has involved fathering, reflecting the shift from the absent "salaryman" to a present "family man" image (Kim and Pyke 2015). Although long average work hours and work devotion still exists in Korea (Moon and Shin 2015), societal attitudes toward fathers' involvement are changing. Considering these societal changes in Korea, a comparison of mothers' and fathers' perceptions with regard to their children's behaviors would be interesting. This comparison of parents' responses to the SDQ in Korea could also have practical use. By investigating interparental agreement, we enhance our understanding about whether either parent can be relied upon as a complementary informant in observing and reporting child behaviors. Building on existing research that has investigated agreement among informants, it was hypothesized that mothers and fathers would not be significantly different when rating child problem behaviors. It was also hypothesized that parents would show a higher degree of agreement on externalizing problems than on internalizing problems, as shown in previous studies. The final aim of this study was to investigate whether the

agreement between mothers and fathers could be accounted for by parental depressive symptoms. Based on prior research, it was hypothesized that parental depressive symptoms would explain the agreement between mothers and fathers in child behavior ratings. Research about the sources of variability in mothers' and fathers' reports has not been extensively examined. Exploring whether parental depressive symptoms are linked to interparental agreement would provide important insights into family interactions and would make a helpful contribution by improving practitioners' utilization of the information on child behaviors in a family context.

## Method

### Participants

The participants were 302 couples who were living with 5-year-old children attending childcare centers in Seoul, Korea. The mean age of mothers was 36.57 ( $SD = 4.18$ ) and the mean age of fathers was 39.03 ( $SD = 4.30$ ). The largest percentage (33%) of monthly family income ranged between 3 and 4 million won in Korean currency (approximately US \$2703–3605), approaching medium social economic status. According to the report by Statistics Korea, the monthly income of households with two members or more was an average of 4.3 million won (US \$3875) in 2014 (Yonhap news agency 2015). With regard to mothers' education, one-hundred-twenty three (41%) mothers were university graduates while eighty-five (28%) mothers were high school graduates and seventy-one (24%) mothers had some college education. With regard to fathers' education, one-hundred-forty-two (48%) fathers were university graduates, while fifty-six (19%) fathers were high school graduates and seventy-seven (26%) fathers had some college education.

### Procedure

Parents were recruited through preschools in the north-eastern area of Seoul, Korea. The research team contacted preschool directors and teachers by phone or visitation to explain the purpose and content of the study. Fifteen preschools agreed to participate in the study. Parents whose children attended these preschools were told about the study. Parents received a letter explaining the study, inviting voluntary participation, and guaranteeing confidentiality by saying the results would be used only for scientific research. Parents were asked to complete the questionnaires if they agreed to participate. Mothers and fathers were asked to complete them independently with a separate cover page and questionnaire for each. Completed questionnaires were

sent to preschools in an enclosed, sealed envelope. Research assistants collected the questionnaires at the participating preschools. Questionnaires from 308 participating parents were gathered, and six questionnaires were eliminated due to missing data on individual scales. This research project was approved by the University Institutional Review Board in accordance with ethical standards for human participants.

## Measures

### *Children's problems and prosocial behaviors*

Children's problems and prosocial behaviors were evaluated by the Korean version of the Strengths and Difficulties Questionnaire (SDQ; Goodman 1997). The SDQ was designed by Goodman and has been translated into many different languages. The Korean version of the SDQ was presented by Ahn et al. (2003). The questionnaire can be freely obtained through the following web-page: <http://www.sdqinfo.org>. It has been widely used in both research and clinical practice.

The SDQ consists of 20 items assessing emotional symptoms, conduct problems, hyperactivity, and peer problems, as well as five items on prosocial behaviors for children and adolescents aged 4 through 17 years. The questions ask about children's behaviors and feelings over the last six months. Items are scored 0 to 2 depending on the degree to which the statement characterizes the child. Scores on each subscale, excluding prosocial behavior, are summed to produce total difficulties, which gives a measure of overall problems. High scores indicate high levels of problems and prosocial behaviors. Goodman et al. (2012) demonstrated the utility of a broader internalizing subscale consisting of emotional and peer items, as well as an externalizing subscale consisting of conduct and hyperactivity items, for lower risk children. The SDQ has been officially translated into more than 50 languages (Petermann et al. 2010) and has been widely validated in Europe (Muris et al. 2003; Percy et al. 2008; Petermann et al. 2010; Riso et al. 2010; Roy et al. 2008; Sanne et al. 2009), the United States (Hill and Hughes 2007), Russia (Ruchkin et al. 2011), and China (Lai et al. 2010). Internal consistencies of the total difficulties subscale and prosocial subscale in this study were .82 and .70 for mothers, and .74 and .69 for fathers.

### *Depressive symptoms*

The Center for Epidemiological Studies-Depression scale (CES-D; Radloff 1977) short form (Andresen et al. 1994) was used to measure depressive symptoms over a one-week recall period. The short form consists of 10 items scored on a 4-point scale with responses ranging from "rarely or none

of the time" to "most or all of the time." This scale has been validated satisfactorily by comparing it to 20 items from the original scale (Björgvinsson et al. 2013). The internal consistency reliability estimate for maternal depressive symptoms in this study was .88 whereas the estimate for paternal depressive symptoms was .86.

## Data Analyses

Prior to all analyses, Cronbach's alpha coefficients for internal consistency were calculated for each of the scales. Pearson product-moment correlations and paired t-tests between mothers' scores and fathers' scores on total problems, internalizing problems, externalizing problems, and prosocial behaviors were conducted. The use of broader internalizing and externalizing SDQ subscales is recommended for analyses in low-risk samples, whereas all five subscales should be used when screening for disorders (Goodman et al. 2012). Correlations of parental depressive symptoms with total problems and prosocial behaviors were computed to investigate the bivariate relationship among variables. Polynomial regressions were conducted to test for the moderating effects of depression on parental reports of child behavior. There is evidence of an interaction if the effect of the focal predictor on the outcome variable differs in size, direction, or strength as a function of the moderating variable (Hayes 2013). Therefore, in the current study, if the interaction effects are significant, the relationship between mothers' and fathers' reports will differ as a function of parental depression. It was expected that the relationship between mothers' and fathers' reports would be stronger when parents exhibited low levels of depressive symptoms. Mother-reports of prosocial behaviors were regressed on father-reports of prosocial behavior and predictor variable in two separate regression analyses. The data analyses were performed using the statistical package SAS 9.3.

## Results

Means, standard deviations and Cronbach's  $\alpha$  coefficients were calculated. Table 1 presents Cronbach's  $\alpha$  coefficients for the SDQ subscales for girls, boys, and overall according to mother and father reports. As shown in the Table 1, mother and father SDQ total difficulties were .82 and .74, respectively, while mother and father SDQ prosocial behavior were .70 and .69, respectively. When the coefficients for total difficulties scores were computed into internalizing and externalizing problems for girls and boys, the internal consistency estimates ranged from .56 with the lowest estimates for father SDQ internalizing problems for boys, to .81, with the highest estimates for mother SDQ externalizing problems for girls.

**Table 1** Reliability coefficients for the SDQ subscales for girls, boys, and all group according to mother and father report

	Girls ( <i>n</i> = 158)		Boys ( <i>n</i> = 144)		All ( <i>N</i> = 302)	
	Mother report	Father report	Mother report	Father report	Mother report	Father report
Total Difficulties	.85	.77	.79	.69	.82	.74
Internalizing	.73	.66	.59	.56	.68	.62
Externalizing	.81	.73	.78	.69	.80	.71
Prosocial Behaviors	.70	.72	.69	.65	.70	.69

**Table 2** Means, standard deviations, correlations, and mean differences effect sizes between mother and father reports

Scale	Mother		Father		Correspondence correlation	Effect size
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Girls ( <i>n</i> = 158)						
Total difficulties	9.50	5.74	9.14	4.65	.57***	.07
Internalizing	4.62	3.10	4.40	2.73	.51***	.08
Externalizing	4.88	3.42	4.73	2.79	.57***	.05
Prosocial behaviors	7.30	1.88	6.95	1.98	.41***	.18*
Boys ( <i>n</i> = 144)						
Total difficulties	9.45	4.91	9.90	4.01	.43***	-.10
Internalizing	4.16	2.59	4.40	2.38	.38***	-.10
Externalizing	5.29	3.19	5.50	2.67	.45***	-.07
Prosocial behaviors	6.87	1.87	6.40	1.85	.49***	.25**
All ( <i>N</i> = 302)						
Total difficulties	9.48	5.35	9.50	4.37	.51***	.00
Internalizing	4.40	2.87	4.40	2.57	.46***	.00
Externalizing	5.08	3.31	5.10	2.76	.52***	-.01
Prosocial behaviors	7.10	1.88	6.69	1.94	.46***	.21***

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001

Table 2 shows means, standard deviations, correlations, and effect sizes for the mean differences between mother and father reports. The Fisher *r* to *z* transformation was conducted. As shown in Table 2, whereas mother and father mean ratings for difficulties scores were not significantly different, mother and father mean ratings for prosocial behaviors were significantly different with a small effect size (*t* = 2.08, *p* < .05, *d* = .18 for girls; *t* = 2.92, *p* < .01, *d* = .25 for boys; *t* = 3.49, *p* < .001, *d* = .21 for all). Mothers reported significantly more prosocial behaviors for their child than fathers regardless of child gender. Given that the mother and father mean ratings were significantly different only for prosocial behaviors, further analyses using standardized differences scores were conducted for prosocial behavior scores.

As shown in Table 2, the correlations between mothers and fathers were significantly positive, with correlations greater than .30 in all subscales. A series of Fisher's *Z*-tests were conducted for these correlations. The correlations between mothers' and fathers' rating of children's total difficulties, internalizing problems, externalizing problems,

and prosocial behavior (*r* = .51, *p* < .001; *r* = .46, *p* < .001; *r* = .52, *p* < .001; *r* = .46, *p* < .001) were significantly positive. When correlations were compared in internalizing and externalizing behaviors separately for girls and boys, the strongest correlations of .57 were found for externalizing problems in girls, and the weakest correlations of .38 were found for internalizing problems in boys. Prosocial behaviors were further analyzed since the effect size was significant.

In order to examine the relationship between maternal depressive symptoms, paternal depressive symptoms, total difficulties, and prosocial behavior, correlations were calculated between these variables, the results of which are presented in Table 3. Maternal depressive symptoms were positively related to total difficulties as reported by mothers (*r* = .42, *p* < .001). Paternal depressive symptoms were positively related to total difficulties as reported by mothers and fathers (*r* = .17, *p* < .01; *r* = .35, *p* < .001). Maternal depressive symptoms were negatively related to prosocial behaviors as reported by mothers and fathers (*r* = -.20, *p* < .001; *r* = -.13, *p* < .05). Paternal depressive symptoms

**Table 3** Correlations of parental depressive symptoms with total difficulties and prosocial behaviors

	Total difficulties		Prosocial behaviors		<i>M</i>	<i>SD</i>
	Mother-reported	Father-reported	Mother-reported	Father-reported		
Maternal depressive symptoms	.42***	.07	-.20***	-.13*	8.47	5.60
Paternal depressive symptoms	.17**	.35***	.04	-.12*	7.21	4.86

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

were negatively related to prosocial behaviors as reported by fathers ( $r = -.12$ ,  $p < .05$ ). The correlation between maternal depressive symptoms and paternal depressive symptoms was .31 ( $p < .001$ ).

Polynomial regression analyses were carried out to analyze the effects of parental depressive symptoms on the criterion scores. Using polynomial regression in the present study addresses informant discrepancies as the outcome or criterion variable. All predictor variables were mean-centered to test interaction terms. Prior to conducting the hierarchical regression analyses, the issue of multicollinearity was checked. The variance inflation factor (VIF) values was less than 10, indicating that multicollinearity was not a problem.

Regarding total difficulties, mother-reported total difficulties were regressed on father-reported total difficulties and parental depressive symptoms. The regression model included a father-reported total difficulties term, a father-reported total difficulties squared term, a predictor (i.e., mother- or father-reported depressive symptoms), a predictor squared term, and a multiplicative interaction term (i.e., the multiplication of father-reported total difficulties and the predictor). While father-reported total difficulties were significant when paternal depressive symptoms was a predictor in the regression model ( $\beta = .27$ ,  $p < .001$ ), the interaction term was not significant. While father-reported total difficulties and maternal depressive symptoms were significant when maternal depressive symptoms was a predictor in the regression model ( $\beta = .30$ ,  $p < .001$ ,  $\beta = .33$ ,  $p < .001$ ), the interaction term was not significant.

Regarding prosocial behavior, mother-reported prosocial behavior was regressed on father-reported prosocial behavior and parental depressive symptoms. The regression model included a father-reported prosocial behavior term, a father-reported prosocial squared term, a predictor (i.e., mother- or father-reported depressive symptoms), a predictor squared term, and a multiplicative interaction term (i.e., the multiplication of father-reported prosocial behavior and the predictor). As shown in Table 4, the interaction between father-reported prosocial behavior and mother-reported prosocial behavior tended to be significant ( $\beta = -.11$ ,  $p = .052$ ). The interaction effect showed that mother-reported depressive symptoms served as a moderator. When

**Table 4** Polynomial regression analyses predicting mother-reported prosocial behavior from father-reported prosocial behavior and mother-reported and father-reported depressive symptoms

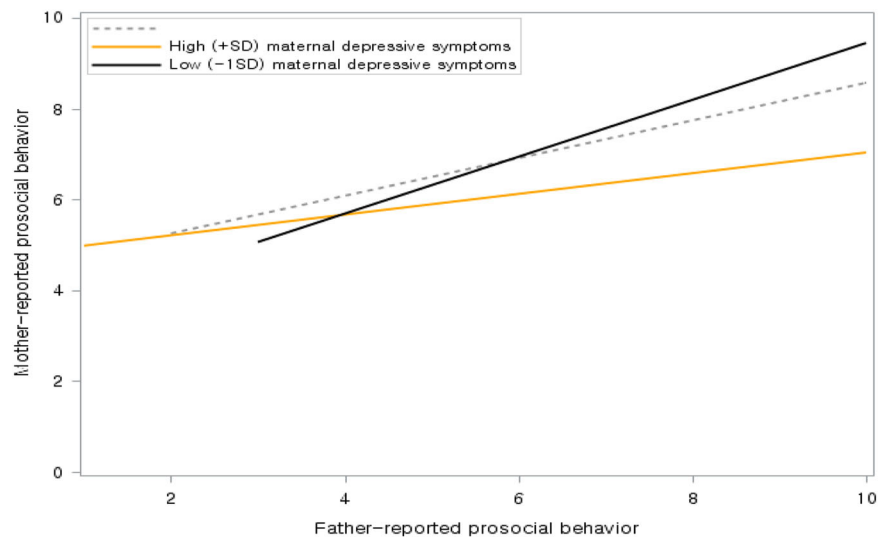
Parameter	Father-reported predictor - Paternal depressive symptoms		Mother-reported predictor - Maternal depressive symptoms	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Father-reported prosocial behavior (FRPB)	.43	<.001	.42	<.001
FRPB squared	.01	.78	-.01	.92
Predictor	.13	.03	-.15	.02
Predictor squared	-.08	.20	-.03	.60
FRPB $\times$ predictor	.05	.36	-.11	.05
$R^2$	.20		.22	

the moderator is a quantitative variable, a common strategy to probe an interaction is to examine the conditional effect of the predictor on the outcome variable at a standard deviation below and above the mean of the moderating variable. In order to illustrate the relationship, high and low levels of mother-reported depressive symptoms were compared on the basis of standard deviation (i.e.,  $M \pm 1SD$ ). Fig. 1 illustrates that there is greater congruence between mother and father reports of their children's prosocial behaviors at low levels of mother-reported depressive symptoms ( $\beta = .65$ ,  $p < .001$ ) than at high levels of mother-reported depressive symptoms ( $\beta = .24$ , *n.s.*). Introducing higher order terms in the model, including cubic terms, did not improve the fit of the model.

## Discussion

The primary aim of this study was to investigate differences between mothers and fathers in their perceptions of child problems and prosocial behaviors using the Korean version of the SDQ in general populations. The analyses indicated that there were no significant differences between mothers' and fathers' reports on their children's internalizing or

**Fig. 1** Predicted mother-reported prosocial behavior as a function of father-reported prosocial behavior and maternal depressive symptoms



externalizing problems of their child. However, there were significant differences between mothers' and fathers' reports of prosocial behaviors in that mothers reported more prosocial behaviors compared to their husbands, who perceived their children as displaying fewer prosocial behaviors. The findings of this study are consistent with the results of Griffith et al. (2014), which showed that mothers and fathers did not differ significantly on SDQ subscale scores. The only significant difference in the study was that mothers reported higher levels of prosocial behavior than did fathers with a small effect size (Griffith et al. 2014). These results are also consistent with a previous study that investigated the concordance between mothers' and fathers' reports of child problems and prosocial behaviors, which showed that mothers were more likely to report prosocial behavior than fathers (Dave et al. 2008; Mellor et al. 2011). Similarly, a previous study on primary school students in China revealed that, compared to fathers, mothers reported significantly higher levels of prosocial behaviors for their sons, whereas mothers' and fathers' reports were not significantly different on total difficulties (Mellor et al. 2011).

The current findings demonstrated moderate levels of interparental correlations on all subscales on the SDQ. In general, correlations between .30 and .50 were considered as moderate on the basis of Cohen's (1988) criteria. A study of cross-informant symptoms in Russian youth using the CBCL, Teacher's Report Form, and Youth Self-report revealed a high mother and father correlation, suggesting the possibility of the overall generalizability of one parent rating to the other parent rating (Grigorenko et al. 2010). Although the current study compared only mothers and fathers, while excluding teachers, moderate correlations were found between mothers and fathers, with correlations greater than .30 in all subscales. In a meta-analysis of

341 studies on cross-informant correspondence in reports of children's mental health, mother-father agreement was greater in comparison to all other informant pairs, with correlations of .48 for internalizing problems and .58 for externalizing problems (De Los Reyes et al. 2015).

Given that mother and father ratings of child behavior problems were not significantly different from one another, research using either parent's rating on the Korean version of the SDQ might be an appropriate means by which to assess their child's problems. The fact that the current results showed a rating similarity between mothers and fathers might reflect the recent social change involving Korean fathers spending more time interacting with their young children. These findings suggest that fathers of young children observe behaviors that are similar to those observed by mothers. In addition, there has been a significant societal change in terms of family size in Korea. Smaller family size may be related to higher levels of mother-father concordance in terms of child behavior problems. Future studies need to examine whether the number of children in the family and the birth order of the child are related to mother-father concordance.

Consistent with previous studies, the present study demonstrated higher interparental agreement for externalizing problems than for internalizing problems. Interparental concordance appears to be greater for observable behaviors and externalizing concerns than for internal states and internalizing concerns. A recent meta-analysis found that mother-father correspondence for reports of children's mental health was .48 for internalizing problems and .58 for externalizing problems (De Los Reyes et al. 2015). A previous study revealed that the correlations between mothers' and fathers' reports were highest for aggressive behaviors at .692 and lowest for thought problems at .419 (Grigorenko

et al. 2010). In a similar vein, Youngstrom et al. (2000) found higher informant agreement for externalizing vs. internalizing symptoms using triads of male youths, caregivers, and teachers. Mother-father agreement was lower for internalizing problems than for externalizing problems in the analyses conducted with CBCL data on preschool children (Grietens et al. 2004) and on children ages 5 to 18 years in a clinical setting (Schroeder et al. 2010). A previous study on interparental agreement in China (Mellor et al. 2011) also revealed that interrater agreement was better for externalizing problems than for internalizing problems regardless of child gender. Consistent with previous research, the present study, using a community sample in Korea, revealed that the strongest correlations between mother and father ratings were for externalizing problems for girls. Despite the notion that parents are more sensitive than teachers to their child's depression or anxiety, a parent might not be aware of their child's internalizing problems since they might be less disruptive to the parent. This suggests that children's internalizing problems, of which a parent might not be aware, could be better investigated by other informants, such as clinicians and teachers. Future research should determine the accuracy of the reports of internalizing problems between parents and other sources, such as through the use of clinician interviews and physiological assessments.

Furthermore, this study investigated whether parental depressive symptoms were associated with agreement between mothers' and fathers' ratings of their young children's behavior. Findings revealed that mothers' and fathers' reports were most congruent when maternal depressive symptoms were at a low level. One possible explanation might be that depression may interfere with a mother's ability to recognize her child's prosocial behavior. In other words, a depressed mother might not be sufficiently attentive to her young child's prosocial behavior. These findings have implications for the need to support depressed mothers of young children to increase responsiveness or sensitivity to the positive aspects of child behaviors. Another possible reason for interparental disagreement is that depressive symptoms might influence the threshold for detecting prosocial behavior. Given that, on an average, mothers spend more times with their children than fathers do, maternal depressive symptoms hinder a mother's ability to recognize her child's prosocial behavior. Further research is warranted to investigate and compare factors that influence interparental disagreement, such as parental characteristics or specific family variables, in order to understand the issue better.

### Limitations

There are several limitations to this study that should be carefully considered. First, although the findings from this

study contribute to an understanding of interparental agreement on children's behaviors, this study investigated only a limited number of variables that might influence parental observation. Future studies need to include variables that may influence parental observation, such as the number of children in the family or the birth order of the target child. For example, the number of children in the family might influence the experiences that parents have with their children, which, in turn, are relevant to their sensitivity to their children's prosocial behavior. Future studies using larger samples with additional family variables could examine the sources of variability in the mother's and father's reports on child prosocial behaviors. Second, the sample was collected from a general population in the community. Therefore, although this study from a general population provides information about child problems in a community sample, these findings may not be generalizable to child disorders in clinical settings. Further research is needed to investigate the interparental agreement in clinical settings, as well as to compare the agreement in general vs. clinical populations. Third, the small effect sizes observed in the current study may limit the generalizability of the findings. In addition, the relatively different internal consistency estimates pose a limitation, even though they were similar to those found in previous studies.

Despite these limitations, the current findings, which investigated the relationship between mothers' and fathers' reports, provide important information with regard to utilizing one parent or both parents as a reliable informant for screening. This study also demonstrated the practical utility of the SDQ in the general population of Korea. Furthermore, the present study applied polynomial regression models and focused on interpreting interaction terms to analyze informant discrepancies as an outcome variable, which is considered a methodologically advanced technique (Laird and De Los Reyes 2013). The findings of the analyses suggest that greater maternal depressive symptoms should be considered when interpreting lower levels of agreement between mothers and fathers concerning child prosocial behaviors. Specifically, the results imply that when there is disagreement between mothers' and fathers' ratings of child prosocial behaviors, it may reflect the presence of problematic parental characteristics, such as maternal depressive symptoms, which can be considered as potential target areas for intervention. It is speculated that depressed mothers are less attuned to positive aspects of the child's behavior. The present findings provide empirical evidence for mothers' and fathers' agreement regarding their child's problems, as well as their prosocial behaviors. With increased attention to this issue and the use of improved methodology, more research should be designed to understand various child behaviors within the family context.



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### Compliance with Ethical Standards

**Conflict of Interest** The author declares that they have no competing interests.

**Ethical Approval** All procedures performed in the studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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