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Young children's social withdrawal and teacher–child relationship quality: A cross-cultural comparison between the Netherlands and China

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Abstract

The present study investigated how young children's (5-to-8-year-olds) social inhibition and solitary behavior were associated with teacher–child relationship quality and whether these associations differed across the Netherlands and China. The Dutch sample included 35 teachers and 201 children (49% girls). The Chinese sample consisted of 19 teachers and 152 children (50% girls). Teachers rated children's social inhibition and solitary behavior, and their relationship (closeness, conflict) with each child. Multilevel linear modeling revealed that in both countries, social inhibition was associated negatively with closeness and solitary behavior was associated positively with conflict. These associations were equally strong in China and the Netherlands. One association differed across countries: Social inhibition was associated negatively with conflict in the Netherlands, whereas this association was not significant in China. As such, cultural values could affect how social inhibition links to teacher–child relationships. Caution is recommended when generalizing findings from one country to another country.

KEYWORDS
cross-cultural comparison, social inhibition, social withdrawal, solitary behavior, teacher–child relationships

1 | INTRODUCTION

It has been acknowledged widely that the affective quality of teacher–child relationships (TCRs) is important for children's school functioning, such as their behavioral adjustment and academic achievement (Lei et al., 2016, 2018; Roorda et al., 2017, 2011). Some children, however, may have more difficulties establishing favorable relationships with teachers than do other children (Pianta et al., 2003). For instance, children displaying socially-withdrawn behaviors tend to refrain from social interactions (Rubin et al., 2009) and, hence, may have trouble forming warm relationships with teachers (Runions & Shaw, 2013; Yang et al., 2021). Children may refrain from interactions with teachers (and other persons) for different reasons, for example, because they feel anxious in social situations (i.e., social inhibition) or because they lack motivation for social contact (i.e., solitary behavior; Coplan et al., 2004; Coplan & Weeks, 2010; Thijs et al., 2004). Because of these different underlying reasons, it is likely that children's social inhibition and solitary behavior have unique impacts on teacher–child relationship quality (cf. Bowker & Raja, 2011; J. Liu et al., 2014). Although several studies examined how social inhibition is associated with teacher-child relationships (see Nurmi, 2012 for a meta-analytic overview), not much research has explored how solitary behavior influences teacher–child relationships. Furthermore, how social inhibition and solitary behavior link to teacher–child relationships may differ across countries (X. Chen, 2010, 2019; X. Chen & French, 2008). Previous research implied that social inhibition could have more positive implications, whereas solitary behavior may be more harmful in Eastern, collectivistic countries than in Western, individualistic countries (cf. X. Chen, 2019; X. Chen et al., 1992, 1995). Related empirical research, however, appears to be scarce. The present study, therefore, aimed to investigate how young children's social inhibition and solitary behavior are linked to teacher-child relationship quality across the Netherlands (a Western, individualistic country) and China (an Eastern, collectivistic country).

1.1 | Theoretical framework

Attachment theory often is used to guide research about teacher-child relationships (Pianta et al., 2003; Verschueren & Koomen, 2012). According to this theory, positive teacher-child relationships can provide children with a secure base to explore their school environment comfortably and a safe haven from which to seek comfort in times of stress. Negative relationships, however, will hamper children's opportunities to use their teacher as secure base and safe haven (Pianta et al., 2003; Verschueren & Koomen, 2012). Attachment-based research often distinguishes between two dimensions of teacher–child relationships, closeness and conflict. High levels of closeness (i.e., warmth, trust, and openness) provide emotional security for children to explore the environment freely and become competent in later life (Verschueren & Koomen, 2012). In contrast, high levels of conflict (i.e., quarrels, discordance, and negativity) evoke emotional insecurity in children that will hamper them from exploring the environment freely and hinder their well-being (Verschueren & Koomen, 2012). The levels of closeness and conflict in teacher-child relationships can be affected by children's behaviors, such as social withdrawal (Pianta et al., 2003). Social withdrawal refers to children's avoidance of social contact and disengagement in social interactions (Rubin et al., 2009). Based on the underlying reasons for showing such behavior, previous research further distinguished between two subtypes of social withdrawal: social inhibition and solitary behavior.

1.1.1 | Social inhibition and solitary behavior

Social inhibition is situated in the approach-avoidance conflict, where children desire social contact but are cautious and restrained on social occasions due to fear of social interaction (Coplan et al., 2004). Socially-inhibited children may have less courage and ability to interact with teachers, whereas in the meantime, they are less prone to confront or irritate teachers than typically developing children (Rudasill & Rimm-Kaufman, 2009). Previous researchers also

have used conceptually similar terms, such as shyness (e.g., Acar et al., 2018) and anxiety-withdrawal (e.g., Sette et al., 2013), to refer to social inhibition. These terms largely overlap and are often used interchangeably in research and school practice (Coplan & Rubin, 2010). From a developmental perspective, however, they may have slightly different meanings. Social inhibition focuses more on children's inherent tendency to react with wariness and distress in social interactions and involves less self-reflection, concerns, and anxiousness toward social evaluations (Asendorpf, 1993; Coplan & Rubin, 2010). It is often used for young children, whose cognitive and emotional skills are still under development. In contrast, shyness and anxiety-withdrawal include more conscious reflections and concerns about social evaluation, as well as anxious feelings on social occasions (Coplan & Rubin, 2010). It is observed more commonly in later childhood (e.g., upper elementary school), when children develop more self-consciousness and social-emotional skills (Coplan & Rubin, 2010). Considering the lack of available studies on young children, we also included studies investigating shyness in our literature review. To prevent confusion and considering the strong overlap between terms (Coplan & Rubin, 2010), we used 'social inhibition' throughout the manuscript.

In contrast, solitary behavior describes children's lack of motivation for social initiations and preference for being alone (X. Chen, 2019; Coplan & Weeks, 2010). Despite their preference for solitude, children with solitary behavior may still be able to engage in social interactions when called upon to do so (Bowker & Raja, 2011; Coplan et al., 2019). Furthermore, children's disinterest in social contact can be regarded as being selfish and pushing others away, and thus may raise disappointment and irritation in teachers and others (J. Liu et al., 2015). In previous research, this subtype also was referred to as social disinterest (Coplan et al., 2004) and unsociability (Coplan et al., 2019; Coplan & Weeks, 2010). In a systematic review, it has been argued that these terms all describe children's preference for spending time alone and can be considered conceptually similar (see Coplan et al., 2019). Hence, we use the term "solitary behavior" consistently throughout the manuscript. To summarize, social inhibition and solitary behavior are conceptually different behaviors and may have unique impacts on the quality of teacher–child relationships.

1.1.2 | Social withdrawal and TCRs in different cultural contexts

The exact impact of children's social withdrawal on teacher–child relationships may depend on the specific cultural context (Pianta et al., 2003). In Western, individualistic countries, initiative-taking, and assertiveness are advocated (Hofstede et al., 2010). Therefore, teachers tend to regard socially-inhibited behaviors as hard to relate to, problematic, and sometimes even unintelligent (Coplan & Arbeau, 2008; Rubin et al., 2009). Teachers may thus have difficulties building warm relationships with children who are socially inhibited. In Eastern, collectivistic countries, social inhibition traditionally is appreciated and encouraged by adults, as it resembles being humble, well-mannered, and self-restrained (X. Chen, 2019; X. Chen et al., 1992). Teachers may favor children with socially-inhibited behaviors and tend to react to them with encouragement, support, and affection (X. Chen, 2012, 2019). Hence, teachers may form more healthy relationships with children displaying social inhibition (cf. X. Chen, 2019). However, some researchers argued that social inhibition has been depreciated in Eastern countries in recent decades due to the influence of Westernization and globalization (X. Chen, 2019). Yet, other researchers suggested that in Eastern countries teachers still emphasize children's obedience and compliance, and thus, may still view social inhibition more positively than teachers in Western countries (cf. J. L. Liu et al., 2020).

In contrast, children's solitary behavior and disinterest in teachers may make teachers feel unwanted and "being put off," regardless of their cultural background (Coplan et al., 2004; J. Liu et al., 2015). Thus, solitary behavior may have negative impacts on teacher–child relationship quality, both in Western and Eastern countries (X. Chen, 2019; Coplan et al., 2019). However, as solitary behavior violates the group-oriented norms valued in Eastern countries, teachers in these countries may consider solitary behaviors even more problematic than do teachers in Western countries (X. Chen, 2010, 2019). As such, children's solitary behavior may harm the quality of teacher–child relationships to a larger extent in Eastern, collectivistic countries than in Western, individualistic countries (X. Chen, 2010, 2019).

1.2 | Social inhibition and interpersonal relationships

Ample evidence from Western countries has shown the impact of social inhibition on teacher–child relationships. Most studies focused on teachers and young children. In terms of closeness, it has been found frequently that children's social inhibition was associated with less closeness with teachers. This was found both in cross-sectional studies (Justice et al., 2008; Koles et al., 2009; Sette et al., 2013, 2019; Thijs & Koomen, 2009), longitudinal studies (Arbeau et al., 2010; Rudasill, 2011; Rudasill & Rimm-Kaufman, 2009), and in a meta-analysis based on seven studies (Nurmi, 2012). Findings regarding teacher–child conflict, however, appeared to be less consistent. Four empirical studies (Arbeau et al., 2010; Justice et al., 2008; Koles et al., 2009; Sette et al., 2013) and a meta-analysis of six studies (Nurmi, 2012) showed a non-significant association between social inhibition and teacher-child conflict. In contrast, social inhibition was also linked with more teacher–child conflict in one study (Sette et al., 2014), and was linked with less conflict in three other studies (Rudasill, 2011; Rudasill & Rimm-Kaufman, 2009; Rydell et al., 2005). As such, in Western countries, children's social inhibition appears to harm the degree of closeness but has less impact on the degree of conflict in teacher–child relationships.

Considerably less research explored how social inhibition is associated with teacher–child relationship quality in Eastern, collectivistic countries. Thus, we also reviewed studies investigating the association between social inhibition and children's relationships with parents and peers. Research about parent–child relationships is relevant because it also concerns children's relationships with important adults in their lives. Furthermore, early research about affective teacher–child relationships was based on theory and research about parent–child relationships (Spilt & Koomen, 2022; Verschueren & Koomen, 2012). Although peer relationships are less comparable to teacher-child relationships as peer relationships are more egalitarian, research on peer relationships could still provide meaningful insight for the present study. Children often learn how to socialize through their parents and teachers (X. Chen, 2011). Thus, children's relationships with socially-inhibited peers may reflect how their teachers (and parents) react toward these children. Furthermore, peer relationships often are investigated in the school context (e.g., Ding et al., 2014; J. Liu et al., 2014, 2015) and thus may provide information about how social inhibition links to interpersonal relationships children develop at school.

Research conducted in Eastern countries before the 2010s often found children's social inhibition to be linked with higher peer acceptance (X. Chen et al., 1992, 1995, 2006) and maternal acceptance (X. Chen et al., 1997; Kim et al., 2008), suggesting that social inhibition used to be appreciated in Eastern countries. However, recent studies in China found social inhibition to be associated with less peer preference (Ding et al., 2014; J. Liu et al., 2014, 2015) and more harsh parenting (J. Liu et al., 2018) in elementary and middle school. In a meta-analysis of eight Chinese studies, children's social inhibition also appeared to be associated with less peer preference and more peer victimization (Zhang et al., 2021). Studies focusing on 3-to-6-year-old children, however, revealed mixed results. Social inhibition was sometimes associated with more peer exclusion and other times was not associated significantly with peer preference at all (see Zhang et al., 2021 for a review). These mixed findings suggest that social inhibition may be less harmful to young children's peer relationships than those of older children, probably because social inhibition is still considered age-normative for young children in China (Zhang et al., 2021).

As far as we know, only four studies examined how children's social inhibition links to teacher–child relationships in Eastern countries. Coplan, Liu et al. (2017) found that Chinese third-to-seventh graders' social inhibition was not associated significantly with the overall teacher-child relationship quality. Three other studies in China revealed that social inhibition was linked with less teacher-child closeness, both for 3-to-5-year-old children (Han et al., 2016; Wu et al., 2015) and third-to-seventh graders (J. Liu et al., 2018). With regard to conflict, social inhibition was found to have non-significant associations with conflict (Wu et al., 2015), or was associated with more conflict (Han et al., 2016) with teachers. Furthermore, one cross-cultural study (M. Chen et al., 2021) showed that in both the Netherlands and China, third-to-sixth graders' social inhibition was associated with less teacher-perceived closeness but had non-significant associations with conflict. Surprisingly, these associations were equally strong across the Netherlands

and China (M. Chen et al., 2021). Hence, in contrast to the theoretical assumptions (J. L. Liu et al., 2020), social inhibition may harm teacher–child relationships in Eastern, collectivistic countries as well, and the harm may be as large as in Western, individualistic countries.

However, M. Chen (2021) looked at teachers and students in upper elementary schools and focused on the more anxious aspects of social inhibition (e.g., "*If I enter a room full of people, I feel anxious*"). Whether these findings generalize to teacher–child relationships in the early school years remains unknown. Older children's social inhibition is often more salient and prominent, and thus is more likely to be depreciated in both countries (cf. Rubin et al., 2018; Zhang et al., 2021). For young children, however, social inhibition is usually less salient and contains less anxious and fearful feelings (Coplan & Rubin, 2010). Still, in Western countries, even young children's social inhibition often is deemed unfavorable, and frequently was found to be associated with adjustment problems (see Rubin et al., 2018 for a review). In Eastern countries like China, young children's social inhibition can sometimes be considered as age-normative and even favorably because it is non-disruptive and involves fewer emotional problems (cf. X. Chen et al., 2021; Zhang et al., 2021). As such, it is likely that in the early school years, social inhibition still has a more positive influence on teacher-child relationships in Eastern countries than in Western countries.

1.3 | Solitary behavior and interpersonal relationships

Not much research has examined the association between children's solitary behavior and teacher–child relationship quality explicitly. Like we did for social inhibition, we reviewed studies investigating the link between solitary behavior and peer relationships. In Western, individualistic countries, findings appeared to be mixed. In upper elementary and middle school, solitary behavior was found frequently to be linked with more peer problems (Barstead et al., 2018; Ladd et al., 2011; Spangler & Gazelle, 2009). Other studies, however, revealed non-significant associations between solitary behavior and peer problems (Coplan et al., 2013; Ojanen et al., 2017). For 3-to-8-year-old children, most studies showed non-significant associations between solitary behavior and peer problems (Coplan et al., 2014; Coplan, Ooi, et al., 2017; Coplan & Weeks, 2010; Sette et al., 2017), whereas sometimes solitary behavior was found to be linked with more peer exclusion (Coplan et al., 2004; Ooi et al., 2018). As such, it remains unclear whether children's solitary behavior harms peer relationships in Western countries, especially for young children.

Research in Eastern, collectivistic countries found stronger evidence for negative associations between solitary behavior and peer relationships (Bullock et al., 2020; X. Chen et al., 2011; J. Liu et al., 2014; Sang et al., 2018). For instance, in China, upper elementary children's solitary behavior was linked with less peer preference and more peer problems both concurrently (Bullock et al., 2020; Sang et al., 2018) and over time (J. Liu et al., 2014). Similar results were found among young children (Li, Zhu, et al., 2016; Nelson et al., 2012). For example, Nelson et al. (2012) showed that Chinese preschoolers' solitary behavior was associated with more peer victimization. Therefore, compared with findings from Western studies, evidence from Eastern studies appears rather consistent and clear that children's solitary behavior harms the quality of peer relationships. In line with this idea, a cross-cultural study found that solitary behavior was associated with less peer preference in both Canada and China, but this association was stronger in China than in Canada (J. Liu et al., 2015). To note, these studies were all based on peer relationships and whether the findings generalize to children's relationships with teachers still remains unknown.

1.4 | The present study

The present study focused on 5-to-8-year-old children and investigated how their subtypes of social withdrawal (social inhibition and solitary behavior) were associated with teacher-child relationship quality across the Netherlands and China. Based on theoretical assumptions and previous research in Western countries (Nurmi, 2012; Rubin et al., 2009), we hypothesized that in the Netherlands, children's social inhibition would be linked with less closeness in teacher-child relationships. We did not formulate specific hypotheses for social inhibition and conflict, due to inconsistent

findings in previous Western studies (cf. Arbeau et al., 2010; Rudasill, 2011; Sette et al., 2014). Given that empirical research was scarce in Eastern countries and inconsistent with theory (cf. Han et al., 2016; J. L. Liu et al., 2020), we did not formulate specific hypotheses for the association between social inhibition and both closeness and conflict in the Chinese sample. Based on theoretical assumptions and previous findings about peer relationships (X. Chen, 2010, 2019; J. Liu et al., 2015), we expected children's solitary behavior to be associated with less teacher-child closeness and more teacher–child conflict both in the Netherlands and China, with associations being stronger in China than in the Netherlands.

2 | METHOD

2.1 | Participants

The Dutch sample included 35 teachers (97.14% female) from 15 schools in the Netherlands. They had an average teaching experience of 16.3 years (SD = 13.4, range = .5—40 years). Most teachers worked full-time (N = 17), with other teachers working either 4 days (N = 8), 3 days (N = 8), or 2 days (N = 2) a week. Teachers provided reports for 201 children (49.25% girls). These children had an average age of 5.9 years (SD = .8, range = 5—8 years). According to the teachers, most children (83.08%) had a Dutch ethnic background, whereas other children (16.92%) belonged to an ethnic minority group (e.g., Turkish)

The Chinese sample consisted of 19 teachers (100% female) from three schools in Zhejiang, China. Teachers had on average 10.5 years of teaching experience (SD = 5.2, range = 4—25 years). All teachers worked full time. Teachers provided reports for 152 children (50% girls). The Chinese children had a mean age of 5.6 years (SD = .5, range = 5—7 years). Teachers indicated that most children (96.05%) had an ethnic majority background (i.e., Han Zu), with the other children (3.95%) having an ethnic minority background (e.g., She Zu).

2.2 | Procedure

In the Netherlands, data were collected by trained bachelor and master students during the second half of the 2018–2019 and 2019–2020 school years. In China, the first author and trained assistants collected data during the second half of the 2018–2019 school year. Schools were contacted via phone and email. After schools agreed to participate, informed consent was gained from teachers and children's parents.

In each participating class, eight children (four boys and four girls) were randomly selected for the teacher to report about. We selected eight children per teacher, to ease teachers' burdens in filling in the questionnaire and thus increase their willingness to participate (Zee & Koomen, 2017; Zee et al., 2018). In some classes, parental consent was not acquired for all children, and thus, some teachers provided reports for fewer children. On average, each teacher provided reports for 6.6 children (SD = 1.9, range = 1—8). Teachers completed a questionnaire about their relationship with each of the selected children and these children's behaviors. In the Netherlands, teachers completed the questionnaire online. In China, teachers completed a paper questionnaire at school. The whole questionnaire took around 40 min for teachers to complete (4—5 min per child).

2.3 | Measurements

2.3.1 | Children's social withdrawal

Teachers reported about each child's level of social withdrawal on two subscales from the Behavior Questionnaire for 2- to 6-year-olds-modified (BQTSYO-M; Thijs et al., 2004). The BQTSYO-M is an adaptation of the Preschool Behavior

Questionnaire (PBQ; Behar, 1977) to the Dutch school context. The Social Inhibition subscale (five items) looks at children's display of reticent and refrained behaviors toward others, for example, "Tries to avoid attention" and "Rather quiet, does not say anything spontaneously." The Solitary Behavior subscale (three items) considers the degree to which children show a preference for being alone. Items are "Does not initiate contact with other children," "Somewhat on his/her own," and "Often plays alone." Teachers rated to what extent each statement applied to a specific child on a 5-point Likert scale, ranging from 1 (*Definitely does not apply*) to 5 (*Definitely applies*).

The two subscales of the BQTSYO-M have shown good reliability, construct validity, and discriminant validity in the Netherlands (Thijs et al., 2004, 2006; Thijs & Koomen, 2009). The English items were translated into Chinese by the first author with a back-translation procedure. In the present study, both the Social Inhibition subscale (Cronbach's alpha = .78 in both samples) and the Solitary Behavior subscale (Cronbach's alpha = .80 in the Dutch sample and = .82 in the Chinese sample) had satisfactory to high reliability. Partial scalar invariance across the Netherlands and China was found for both Social Inhibition (χ^2 (12) = 18.74, p = .095, RMSEA = .056, CFI = .973, SRMR = .059) and Solitary Behavior (χ^2 (3) = .20, p = .977, RMSEA = .000, CFI = 1.000, SRMR = .010), suggesting that both subscales could be used for making meaningful cross-cultural comparisons (Byrne et al., 1989).

The BQTSYO-M originally was developed for children between 2 to 6 years old. In our sample, most children were within this age range, whereas a small percentage of children (13.03%) was seven years old and one child was eight years old. An additional reliability analysis showed that the reliability of the subscales was satisfactory for 7-to-8-year-old children in our sample as well (i.e., Cronbach's alpha = .77 and .89 for social inhibition and solitary behavior, respectively). It thus seems that the BQTSYO-M could be used appropriately for the present sample (cf. Spilt et al., 2010; Thijs et al., 2006; Thijs & Koomen, 2009).

2.3.2 | Teacher–child relationship quality

Teachers reported about their relationship with each child on the Closeness and Conflict subscales from the Dutch short version of the Student-Teacher Relationship Scale (STRS, Koomen et al., 2012; Zee & Koomen, 2017). The Closeness subscale (five items) assesses the degree to which a teacher perceives the relationship with a child as warm, intimate, and open, such as "This child seems to feel secure with me", and "This child openly shares his/her feelings and experiences with me." The Conflict subscale (five items) considers the degree of quarrels, discordances, and struggles between teacher and child, for example, "This child and I always seem to be struggling with each other" and "Dealing with this child drains my energy." Teachers responded to these items on the same 5-point Likert scale as was used for assessing children's social withdrawal, varying from 1 (*Definitely does not apply*) to 5 (*Definitely applies*).

Previous research has supported the psychometric quality of the short version of the STRS both in the Netherlands and China (M. Chen et al., 2019; Zee et al., 2017; Zee & Koomen, 2017; Zee et al., 2013). In the present study, both the Closeness subscale (Cronbach's alpha = .76 in the Dutch sample and .81 in the Chinese sample) and the Conflict subscale (Cronbach's alpha = .81 in the Dutch sample and .82 in the Chinese sample) presented satisfactory to high reliability. Sufficient measurement invariance of the STRS has been found to make meaningful cross-cultural comparisons of teachers' perceptions of relationships with both upper elementary children (M. Chen et al., 2019) and young children (M. Chen et al., 2023).

2.3.3 | Covariates

As children's gender, age, externalizing behaviors, and teachers' teaching experience are found frequently to be related to teacher-child relationship quality (Nurmi, 2012; see McGrath & van Bergen, 2015 for a review), we included these variables as covariates in the analyses. Children's Externalizing Behavior was rated by teachers on the broad-band Externalizing Behavior scale (10 items) of the BQTSYO-M. This scale measures the display of aggression, bullying,

and antisocial behaviors in children, such as "Destroys things" and "Easily blames others." The Externalizing Behavior scale showed high reliability both in the Dutch sample (Cronbach's alpha = .90) and in the Chinese sample (Cronbach's alpha = .92). Sufficient measurement invariance across the Dutch sample and Chinese sample also was found for the Externalizing Behavior scale, with the partial scalar invariance model showing satisfactory model fit, χ^2 (80) = 145.60, $p < .001$, RMSEA = .068, CFI = .941, SRMR = .072. Children's Gender (0 = boys, 1 = girls) and Age (measured in years) were provided by the schools. Teachers reported their years of Teaching Experience.

2.4 | Data analysis

Data analysis was conducted in Mplus version 7.0 (Muthén & Muthén, 1998–2012). Our data had a multi-level structure, with children being nested in teachers (intraclass correlations = .34 for Closeness and .40 for Conflict). Thus, we employed multilevel linear models to partition variance in teacher-child relationship quality at the child level from variance at the teacher level. Separate models were built for Closeness and Conflict. For both models, we started with an empty model that separated child-level variance and teacher-level variance. Next, Social Inhibition, Solitary Behaviors, and Country (0 = the Dutch sample, 1 = the Chinese sample) were included as independent variables at the child level (Raudenbusch & Bryk, 2002). Children's Gender, Age, and Externalizing Behaviors were included as covariates at the child level and teachers' Teaching Experience was added as a covariate at the teacher level. In the next step, the interaction between Social Inhibition and Country (Social Inhibition X Country) and the interaction between Solitary behavior and Country (Solitary Behavior × Country) were added to the model. We added interaction effects one by one and retained only significant interactions in the final model, following the suggestion of Harrell (2015). Grand mean centering was applied to all continuous predictors and covariates to ease the interpretation of the results. Maximum Likelihood with Robust Standard Errors (MLR) was used for model estimation. In terms of missing values, only .28% were missing for Social Inhibition, Solitary Behavior, and Externalizing Behaviors, whereas for other variables, there were no missing values. Little's MCAR test showed that the missing data can be considered as missing completely at random, χ^2 (2) = 7.68, $p = .681$. In the main analysis, these missing values were handled by Full Information Maximum Likelihood (FIML) in Mplus (Muthén & Muthén, 1998–2012).

3 | RESULTS

Table 1 presents descriptive statistics and correlations between study variables for the two samples separately. Social Inhibition and Solitary Behavior were associated negatively with Closeness in both the Dutch sample and the Chinese sample. Social Inhibition and Solitary Behavior were associated positively with Conflict in the Chinese sample, whereas these associations were not significant in the Dutch sample.

Standardized regression coefficients of the final multilevel models are provided in Table 2. For Closeness, the interactions between Social Inhibition and Country and between Solitary Behavior and Country were not significant ($ps > .05$) and, hence, they were excluded from the final model. In this final model, Social Inhibition was associated significantly and negatively with Closeness ($\beta = -.36$, $p < .001$), whereas the association between Solitary Behavior and Closeness was not significant ($\beta = -.08$, $p = .322$).

With regard to Conflict, the interaction between Solitary Behavior and Country was not significant ($p = .088$) and, hence, it was excluded from the final model. In the final model, Solitary Behavior was linked significantly and positively to Conflict ($\beta = .11$, $p = .018$). In contrast, Social Inhibition was associated negatively with Conflict ($\beta = -.16$, $p = .007$). The interaction between Social Inhibition and Country was significant ($\beta = .15$, $p = .013$). As can be seen in Figure 1, the negative association between Social Inhibition and Conflict was only significant in the Dutch sample ($\beta = -.16$, $p = .007$), whereas it was not significant in the Chinese sample ($\beta = -.01$, $p = .871$).

TABLE 1 Descriptive statistics and correlations between study variables.

	Dutch sample		Chinese sample									
	M	*SD*	*M*	*SD*	1	2	3	4	5	6	7	8
1. Solitary behavior	1.45	.75	1.48	.68	–	.70**	.05	−.06	.24**	.03	−.47**	.40**
2. Social inhibition	1.83	.83	1.86	.81	.62**	–	.04	.07	.18*	.09	−.43**	.34**
3. Child gender (0 = boy)	–	–	–	–	.02	.05	–	.01	−.22**	.00	.17*	−.10
4. Child age	5.86	.75	5.60	.52	.07	.01	−.02	–	.10	.20*	−.18*	.14
5. Externalizing behavior	1.62	.76	1.70	.83	.06	.06	−.32**	.15	–	.17*	−.51**	.72**
6. Teaching experience	17.34	13.37	10.47	5.03	−.17	−.10	.05	−.29**	−.04	–	−.16*	.15
7. Closeness	4.37	.63	4.18	.72	−.29**	−.43**	.18*	−.09	−.38**	.05	–	−.54**
8. Conflict	1.46	.68	1.66	.73	.08	.01	−.25**	.07	.75**	.06	−.30**	–

**$p < .01$.

***$p < .001$. Correlations between study variables are presented for the Dutch sample (below diagonal) and the Chinese sample (above diagonal), separately.

TABLE 2 Multilevel linear models examining the associations between children's social withdrawal and teacher–child relationship quality.

	Closeness *β* (*SE*)	Conflict *β* (*SE*)
Fixed parameters		
Child-level variables		
Gender (0 = boy)	.12 (.04)**	.01 (.03)
Age	−.05 (.06)	.02 (.05)
Externalizing behavior	−.36 (.07)***	.73 (.05)***
Country (0 = Dutch, 1 = Chinese)	−.14 (.07)*	.13 (.07)*
Solitary behavior	−.08 (.08)	.11 (.05)**
Social inhibition	−.36 (.07)***	−.16 (.06)*
Country × Social inhibition	–	.15 (.06)*
Teacher-level variable		
Teaching experience	−.11 (.21)	.20 (.16)
Random parameters		
Child-level variance	.59 (.06)	.41 (.06)
Teacher-level variance	.99 (.04)	.96 (.07)
Interclass correlation	.15	.12
R^2_{within}	.41	.60
$R^2_{between}$	.01	.04

**$p < .01$.
***$p < .001$.

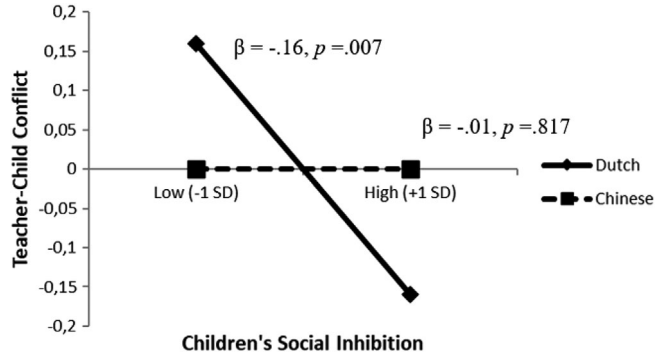

FIGURE 1 The interaction effect of social inhibition and country on teacher–child conflict.

4 | DISCUSSION

The present study examined how social withdrawal was linked to the quality of relationships between teachers and young children across the Netherlands and China. As most previous studies only looked at the impact of social inhibition on teacher–child relationships (e.g., M. Chen et al., 2021), this study added to the current literature by investigating how social inhibition and solitary behavior were linked uniquely to teacher–child relationships. Furthermore, we focused on teachers and children in the early school years and our findings can thus shed light on whether previous findings regarding older children's social withdrawal and interpersonal relationships also generalize to young children

and their teachers. Although more research is needed to replicate our findings, some preliminary conclusions can be drawn.

4.1 | Social inhibition and relationship quality

In both countries, social inhibition was associated with less closeness in teacher–child relationships. This association was equally strong across the Netherlands and China. Hence, our findings are in line with M. Chen et al. (2021), who found that the negative association between students' social inhibition and teacher-reported closeness in upper elementary school was equally strong across the Netherlands and China. It thus appears that even in the early school years, social inhibition did not have more positive implications for teacher–child relationships in China than in the Netherlands. A possible explanation may be that due to globalization and Westernization, Chinese kindergarten teachers' views about social inhibition have become more similar to those of teachers in Western countries (X. Chen, 2019; Li, Coplan et al., 2016).

However, the association between social inhibition and conflict did appear to differ across countries. More specifically, children's social inhibition was linked with less teacher-child conflict in the Netherlands but appeared to be unrelated to conflict in China. In line with our findings, some Western studies also found social inhibition to be associated with less teacher–child conflict (Rudasill, 2011; Rudasill & Rimm-Kaufman, 2009; Rydell et al., 2005; Zee & Roorda, 2018), probably because socially-inhibited children are less likely to confront teachers than typically developing children (Rydell et al., 2005; Zee & Roorda, 2018). Consistent with our findings in China, Wu et al. (2015) also revealed a non-significant association between social inhibition and teacher-child conflict in China. In contrast, the only other Chinese study that we know, found social inhibition to be associated with more conflict with teachers (Han et al., 2016). Given the limited number of studies available, more research is needed to explore how social inhibition may impact teacher–child conflict in Eastern countries. So far, our findings suggest that cultural values can play a role in shaping the way how social inhibition affects the degree of conflict between teachers and young children. As such, findings based on teachers and children in Western countries cannot simply generalize to teachers and children in Eastern countries.

4.2 | Solitary behavior and relationship quality

As far as we know, the present study is one of the first to look into the link between solitary behavior and teacher-child relationships. Both in the Netherlands and China, solitary behavior was not associated with teacher–child closeness. As such, our findings suggest that unlike social inhibition, solitary behavior was not detrimental for teacher-child closeness. As a possible explanation, although children displaying solitary behaviors are not inclined to initiate interactions, they do have sufficient social skills to engage in social interactions when teachers initiate contact with them (Coplan et al., 2013). Thus, these children may still have enough interactions with teachers so that the degree of closeness will not be undermined (Bowker & Raja, 2011; Coplan et al., 2015). In contrast, socially-inhibited children are not only less inclined to initiate interactions with teachers but also have difficulties participating in teacher-initiated interactions (Ladd et al., 2011). As such, social inhibition may reduce substantially the amount of interactions that children have with their teachers and thus harm teacher–child closeness (Rudasill & Rimm-Kaufman, 2009).

With respect to teacher–child conflict, solitary behavior was associated with more conflict in both countries. As such, our findings contradict our hypothesis that the association between solitary behavior and teacher–child conflict would be stronger in China than in the Netherlands (X. Chen, 2010, 2019; J. Liu et al., 2015). As our hypothesis was based on research on peer relationships, it seems that findings regarding solitary behavior and peer relationships cannot simply be generalized to teacher-child relationships. A possible explanation is that the underlying processes might be different for peer relationships and teacher-child relationships. More specifically, solitary behavior may be more

problematic for peer relationships in China than in Canada, as it violates the traditional Chinese value of fitting into and connecting with the peer group (J. Liu et al., 2015). For teachers in China, however, solitary behavior may not be very troublesome, as these behaviors are often non-disruptive and sometimes can even be considered as concentrating on their tasks (Li, Coplan et al., 2016). Hence, Chinese teachers may not deem solitary behavior more negatively than teachers in Western countries. In line with this idea, Li, Coplan et al. (2016) found that Chinese kindergarten teachers did not show more irritation and concern about children's solitary behaviors than Canadian teachers (cf., Arbeau & Coplan, 2007; Coplan et al., 2015).

On a final note, solitary behavior also appeared to have unique link with teacher-child conflict that differs from the link between social inhibition and teacher-child conflict. More specifically, solitary behavior was associated with more conflict in both countries. In contrast, social inhibition was not linked to conflict in China, and was even associated with less conflict in the Netherlands. A possible explanation could be that children with solitary behaviors may push teachers away or move against teachers, sometimes even acting with anger and aggression (cf. Sette et al., 2017). Hence, these behaviors may increase the conflict they have with teachers. On the other hand, children displaying social inhibition may be less likely to confront and challenge teachers. Hence, these children may not have more conflict and sometimes even have less conflict with teachers than typically developing children (Rudasill & Rimm-Kaufman, 2009; Rydell et al., 2005).

4.3 | Limitations and future directions

We acknowledge several limitations of the present study. First, a cross-sectional design was employed to answer our research questions and, hence, we cannot draw definitive conclusions about the causality of the associations between social withdrawal and teacher–child relationships. Hence, future research could use a cross-lagged design to examine the causal influence of social withdrawal on teacher–child relationship quality.

Second, teachers provided reports for both children's social withdrawal and teacher–child relationship quality, which may have led to common method bias. Harman's single factor test, however, did not flag substantial common method bias between teacher-reported social withdrawal and relationship quality (<34.12%; Podsakoff et al., 2012). Nevertheless, it may be beneficial for future research to include other informants as well, for instance, by asking children to report on the relationship quality.

Third, we focused on teachers and young children in the Netherlands and in Zhejiang, China (a relatively developed region in China). Thus, our findings may not simply generalize to other countries or other regions in China. Future research is encouraged to examine the generalizability of our findings to other countries or regions.

4.4 | Implications and conclusion

Based on our findings, some suggestions and implications are provided for research and school practice. First, children's social inhibition and solitary behaviors were found to have unique links with teacher–child relationship quality. As previous research often only examined the influence of social inhibition on teacher-child relationships (e.g., Acar et al., 2018; Sette et al., 2019), researchers are suggested to also include solitary behavior when investigating the associations between social withdrawal and teacher–child relationships. For school practice, it means that teacher training programs could be made more specific and efficient, to help teachers deal with these two subtypes of behaviors in different ways. For instance, teachers may be trained to focus more on establishing close relationships with children who are socially inhibited and on reducing conflict with children displaying solitary behavior.

Second, our findings suggested that social inhibition is harmful to teacher-child closeness in both countries. Although social inhibition traditionally was appreciated in China (X. Chen, 2010, 2019), Chinese teachers now also may need help to improve their relationships with socially-inhibited children. As far as we know, such an intervention is

not yet available in China. Related interventions developed in Western countries for teachers to improve relationships with children (e.g., Bosman et al., 2021; Roorda et al., 2013; Spilt et al., 2012), can be used as good starting points to develop interventions for teachers and children in China, with careful adjustment to the Chinese context. In addition, the present study found that solitary behavior may raise teacher–child conflict both in China and the Netherlands, and thus related interventions seem to be needed in both countries. However, to our knowledge, such interventions are still lacking. Researchers are thus encouraged to pay more attention to helping teachers deal with children's solitary behaviors.

Third, the association between social inhibition and teacher-child conflict was found to differ across countries, indicating that cultural context plays a role in shaping the way how social inhibition is associated with teacher-child relationships. Hence, caution is needed when applying research findings based on one country to another country.

To conclude, the present study found that social inhibition and solitary behavior had unique links with teacher-child relationships. Social inhibition was associated negatively with closeness and solitary behavior was associated positively with conflict, and both associations were equally strong across the Netherlands and China. One association differed across countries: Social inhibition was associated negatively with conflict in the Netherlands, whereas this association was not significant in China. Therefore, it seems that research findings from one country cannot be generalized to other countries. Future research is recommended to include both social inhibition and solitary behavior, and study their unique influences on teacher-child relationships, so as to help school practice and interventions to be more specific.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data and materials used in the research cannot be publically shared because data contain confidential information of the participants, whereas data and used materials are available upon request, by emailing: Dr. Mengdi Chen (mengdichen@um.edu.mo), or Dr. Debora Roorda (d.l.roorda@uva.nl).

ETHICS APPROVAL

Data collection involved in the present study is approved by the ethical committee of University of Amsterdam (file number: 2018-CDE-9440). All the research meets the ethical guidelines, including adherence to the legal requirements of the study countries.

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