

**Behavioral Adjustment of Pre-primary School Children in Tanzania:
The Role of the Teacher-Child Relationship**

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Behavioral Adjustment of Pre-primary School Children in Tanzania: The Role of the Teacher-Child Relationship

Gedragsaanpassing van kinderen in het voorschoolse onderwijs in Tanzania: de rol van de
leerkracht-kind relatie
(met een samenvatting in het Nederlands)

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Chapter 1

General Introduction

Behavioral adjustment in pre-primary school has been reported to be a challenge for children (Bruce, 2004). The new school environment requires the child to develop specific behaviors relating to this environment so that s/he can cope with the demands it imposes. This initial phase is the period in which the child prepares for intellectual stimulation and successful behavioural adjustment, among other educational goals. Children have already learned a lot at home and in peer groups, and each child enters pre-primary school with different strengths and vulnerabilities. The difference in children's strengths as well as their vulnerabilities may mean that each child's behavioural adjustment develops at a different pace, and depends on individual temperament, parental mode of child rearing and the specific characteristics of the new environment compared to the home environment.

Children's Behavioral Adjustment and Adjustment Problems

In this dissertation we refer to behavioral adjustment in broad terms as the child's ability to engage in adaptation processes in the transition from the social environment of the home to the new social environment presented by the pre-primary school. During these adaptation processes, appropriate or well-adjusted and inappropriate or maladjusted behaviors may be observed in forming a relationship with other children and with teachers, developing skills and self-confidence, and accepting and complying with school rules and regulations. Appropriate behaviors include prosocial behavior, while inappropriate behaviors include aggressive and anxious behaviors. Behavioral adjustment is sometimes viewed as an outcome of adaptation processes: when behavior becomes stable, for example, it is referred to as an outcome. In Study 4, for instance, children nominated their peers as prosocial or aggressive. In this case prosocial and aggressive behavior can be regarded as outcomes of adaptation processes. Behavioral adjustment as an outcome needs to be observed over a longer period of time. The concept of behavioral adjustment *problems* in this dissertation refers to teachers' perception of children who behave in an unacceptable manner in pre-primary school. In the study reported in Chapter 2, teachers were asked to mention specific behaviors on the part of children that they perceived as a problem. The concept of behavioral adjustment *problems* is also used when we want to explore teachers' behavioral management strategies.

In the transition from home to pre-primary school children are familiar neither with each other nor with the teacher. More specifically, the transition includes moving from an informal to a formal context, from familiar to unfamiliar people, from a few peers to many peers. In addition, the child's history is not known in pre-primary school, and unlike the home, the school aims to prepare the child academically. During this period the person closest to the

child is often the teacher. For the child the teacher is the one who is there to care, to guide, to solve problems, and to show the way to success.

During the start of schooling some children adjust successfully while others do not. According to Entwistle and Hayduk (1988), this transition is essential for future functioning in school. In this transition period, children display behaviors such as non-compliance and frequent tantrums which are considered as normative in the child's developmental process (Keenan & Wakschlag, 2000). Furthermore, because the school environment is new to the children, some of them may experience fear or anxiety, or become withdrawn or isolated. Any of these behaviors may be common at the start of schooling and are also regarded as part of a developmental process in the child. When they persist or are maintained over time and interfere with the child's social functioning they may be considered as behavioral adjustment problems by teachers (Fox, Dunlar, & Cushing, 2002). At this stage behavioral adjustment is considered an outcome.

Prosocial behavior refers to getting along with peers, helping others, complying with the teachers' instructions and following school rules. Aggressive behavior refers to inappropriate behavioral adjustment which has been reported to be a serious problem among preschool children (Boyd et al., 2005; Hughes, Cavell, & Jackson, 1999; Loeber, 1990). For example, aggressive behavior has frequently been reported to be stable over time (Burk et al., 2011; Silver, Measelle, Armstrong, & Essex, 2005). Research in clinical psychology has shown that early aggressive behavior in children can lead to delinquency and substance abuse as they grow older (Loeber, 1990). Guidance by teachers during the school entry process is crucial to young children's successful adjustment.

Ecological Model

On the basis of previous research (Buyse, Verschueren, Verachtert, & Van Damme, 2009; Curby, Grimm, & Pianta, 2010), we propose in this study that children's behavioral adjustment is the result of an interaction between a child's characteristics and her/his immediate environment (in this case the classroom). Children's behavioral adjustment can be explained in the light of Bronfenbrenner's ecological model (Bronfenbrenner & Morris, 1998), which guides the understanding of the relationships between multiple-level characteristics and children's behavioural adjustment. We used the ecological model as it is applied to the school as a microsystem in order to explain children's behavioural adjustment. Two characteristics have been chosen to study these relationships: teacher-child relationship at child level (or individual level) and classroom emotional support at class level (Perry & Weinstein, 1998).

We also considered time as an important factor in the ecological model. In this study, the interaction between a teacher and a child at dyadic level and at classroom level is considered to be a proximal process which predicts the (in)stability of the child's behavioural adjustment over time.

Because we are aware that a child is a thinking subject we added an active characteristic of the child. Children have their own way of thinking. During interactions with other members of society children interpret their relationships with others, for instance with parents, peers, and teachers. Their thinking and interpretation can be seen in their evaluation and justification of actions in the moral and non-moral domain. According to the ecological model, a child's behavioral adjustment is influenced/shaped by multiple factors that surround the child in her/his environment. In this study teachers' cultural beliefs, child characteristics, teacher characteristics, classroom characteristics, and child's thinking have been considered as factors influencing children's behavioral adjustment.

Theoretical underpinnings of children's behavioural adjustment and factors linked to behavioural adjustment in preschools have been well addressed in Western cultures. Taking into account the developmental process a child goes through, it seems reasonable to assume that children in every culture adjust their behavior at the start of preschool. It is important to examine the behavioral adjustment of children at the beginning of their formal schooling because of the impact on future school functioning. The behavioral adjustments provide information to teachers, parents, and policymakers and may support their establishment of strategic plans for a successful school career for pre-primary school children. In Tanzania, in my experience, parents and teachers advocate good academic performance, such as high marks for their children, as soon as they enter school life. However, they might underestimate or even undermine the issue of behavioural adjustment, which we believe is an important antecedent for whatever success or failure a child encounters in her/his school life. We therefore examined children's behavioural adjustment and its relationship to the teacher-child relationship in the Tanzanian pre-primary school cultural context.

Cultural Context and Teachers' Perception of Behavioral Adjustment

In every culture, children experience their world as an environment of social relationships, and these relationships affect virtually all aspects of their development: intellectual, social, moral, emotional, physical, and behavioural. However, different cultures have different cultural orientations, either more collectivistic or more individualistic, which have an impact on child rearing and consequently on children's behavioral adjustment (Deater-Decker & Dodge,

1997). Furthermore, evidence from the literature shows that the content or definition of children's behavioral adjustment differs between collectivistic and individualistic societies (Killen & Wainryb, 2000; Triandis, 1996), with either more room for respect and obedience, or for autonomous choices in behavioral adjustment.

The Tanzanian culture differs from Western cultures in several ways. For example, child rearing styles differ (Rubin, 1998; Tudge, 2008). Tanzania is a more collectivistic society and, unlike Western individualistic societies, it primarily insists on cooperation, obedience, and respect for elders among other behavioral orientations. As a part of the child-rearing style, Tanzanian teachers emphasize obedience in children and children showing respect to teachers. In addition, pre-primary class sizes in Tanzania have been reported to be large compared to Western preschool classes. These factors may influence children's behavioral adjustment in the Tanzanian cultural context. Teachers' expectations of children's behavioral adjustment are assumed to be embedded in the cultural beliefs of their societies. Tanzanian teachers' cultural beliefs regarding elements of child rearing such as obedience, cooperation, and play were examined to find out whether they relate to children's behavioral adjustment.

During the pre-primary school period, children who break the school rules and fail to comply with teachers' expectations of respect and authority are more likely to be perceived as not well adjusted (Bulotsky-Shearer, Dominguez, & Bell, 2012). Teachers in both cultural orientations, individualistic and collectivistic, may perceive these behaviors from the start of schooling as problems instead of as part of children's developmental process. Teachers further may perceive these children as difficult to manage.

Research has shown that teachers use different strategies to manage children's behavioral problems. Different cultural orientations have been associated with the use of different strategies to manage such problems (Deater-Decker, & Dodge, 1997). For example, in individualistic societies teachers are reported as encouraging relational support among children, being warm to the child, and displaying tolerance towards the child (cf. Baumrind, 1967), while the emphasis on punitive management strategies was reported in collectivistic societies (Elbdour, Assor, Centre, & Maruyama, 1997; Elbedour, Elbassiouny, Bart, & Elbedour, 2012). In the context of this study, these types of behavioral management strategy are regarded as supportive and restrictive strategies respectively.

Teacher-Child Relationship as a Predictor of Children's Behavioral Adjustment

According to the literature, the teacher-child relationship is an important factor in helping the child to adjust successfully to the school context (Birch & Ladd, 1998; Pianta, 2001). The teacher-child relationship has been reported to have a short-term and a long-term impact on children's behavioral adjustment (Birch & Ladd, 1997; Pianta, Steinberg, & Rollins, 1995). A common measure used in addressing the teacher-child relationship is the Student-Teacher Relationship Scale (STRS, Pianta, LaParo, & Hamre, 2008), a questionnaire for teachers focusing on their dyadic relationship with a child. For example, several studies showed that teacher-child closeness is associated with a decrease in aggressive behavior in subsequent years in school (Birch & Ladd, 1998; Hughes & Kwok, 2006; Silver et al., 2005). Furthermore, studies suggest that a warm teacher-child relationship helps children to learn more adaptive behaviors (Myers & Pianta, 2008). Reports on conflictual relationships between teacher and child point in the direction of less behavioral adjustment in children over time (Buyse et al, 2009). Studies also pointed to the role and behaviors of teachers at class level, such as classroom emotional support. For example, teacher sensitivity and positive climate (at class level) have been reported to stimulate behavioral adjustment in children over time (Pianta & Stuhlman, 2004; Rimm-Kaufman et al., 2002). Teacher-child relationship and classroom emotional support have been reported to be among the promising factors in helping the child to adjust successfully to the school context (Pianta & Stuhlman, 2004; Rimm-Kaufman et al., 2002). The contribution of classroom emotional support to children's behavioral adjustment has also been researched in this study.

In the early years, the quality of the teacher-child relationship, both at dyadic and at class level, lays the foundation for a wide range of later developmental outcomes like self-confidence, successful behaviour adjustment, sound mental health, and school achievement (Perry & Weinstein, 1998). However, most studies on the relationship between children's behavioral adjustment and teacher-child relationship at individual level and classroom emotional support at class level have been conducted in Western cultures. There is a lack of research of this nature in a Tanzanian cultural context; hence this is the first study to address children's behavioral adjustment and its relationship with teacher-child relationship in the Tanzanian context.

Children's Evaluation and Justification of Transgressions in the Moral and Non-moral Domain

The literature shows that preschool children evaluate moral transgressions as wrong or right based on considerations of fairness and the welfare of others, whereas they evaluate conventional transgressions as good or bad depending on whether these are allowed by the authority in a particular society (Gasser & Keller, 2009; Nucci & Turiel, 1978; Smetana, 1981). Children's evaluation and justification of transgressions in the moral and non-moral domain have been reported as important factors for their behavioral adjustment. For example, studies found that prosocial children focus on the harm caused by a transgression, while an aggressive child may perceive that s/he has a right to violate moral rules, such as to hit another person (Gasser & Keller, 2009). In such cases, aggressive children may focus on the authority prohibition and/or punishment. In this study we examined the relationships among children's evaluation and justification of transgressions in the moral and non-moral domain, children's social behavior, and the teacher-child relationship. A relationship between children's moral and non-moral evaluation and justification of transgressions and the teacher-child relationship has not been addressed in the literature.

Methods Used to Study Children's Behavioral Adjustment

The literature shows that a range of methods and measures has been used to study children's behavioral adjustment in preschool. These include questionnaires and ratings (Burk et al., 2011; Hughes et al., 1999). For example, teachers have rated behaviors using the Children's Behavior Checklist (CBCL). Another measure used to assess behavioral adjustment problems is the Adjustment Scales for Preschool Intervention (ASPI, Burk et al.; 2011; Lutz, Fantuzzo, McDermott, 2002), which was reported to reveal the prevalence of different behavioral adjustment problems. Other examples of questionnaires used by teachers to report children's behavioral adjustment are the Children's Behavior Questionnaire (CBQ, Behar & Stringfield, 1974) and the pro-social scale for the Preschool Behavior Questionnaire (PPBQ, Tremblay, Vitaro, Gagon, Piché Royer, 1992). Peer nomination has also been used in identifying prosocial and aggressive children (Gasser & Malti, 2012; Hughes et al., 1999; Ladd & Burgess, 1999).

In the present research we used three methods to explore children's behavioral adjustment and adjustment problems in school. First, we used an interview schedule, which was prepared by the researcher for teachers to report on children's behavior (Chapter 2). Second, we used standardized questionnaires – such as the PPBQ (Chapters 3, 4 & 5). Third,

peer nomination was used to explore differences between children with prosocial and aggressive behaviors (Chapter 5). The most often used informant regarding children's behavioral adjustment in this study was the teacher, on the basis of interview and questionnaire. Teachers have been reported to be good informants when it comes to children's behavioral adjustment in school because they stay with children for a longer period (Buyse et al., 2009). Moreover, we used the observations of teachers at classroom level.

Pre-primary Education in the Tanzanian Context

In Tanzania, pre-primary school is the first formal schooling, and it prepares children for primary education (Grade 1). About two decades ago, children in Tanzania would join primary education (Grade 1) without preparation. In 1995, Tanzania's Ministry of Education and Culture (1995) established an education and training policy on preparing children aged under 7 years for primary school and this preparation became mandatory. Under the education and training policy, every child in the country aged 5-6 years has to attend pre-primary school before joining primary education. To implement this policy, all primary schools were supposed to establish a pre-primary class on their premises. In 1995, pre-primary education became part of the formal education system (Tanzania Institute of Education, 2009). The language of instruction in public schools is Swahili (national language) while in private school it is English.

From the beginning steps taken to establish pre-primary school in Tanzania to the present, pre-primary teachers in public schools have been recruited in two ways. First, primary school teachers who have long-standing experience in teaching Grades 1 and 2 are appointed to teach pre-primary classes. These teachers attend short courses in early childhood education in a government teachers' training college. Plan International, a non-governmental organization, has also been organizing training in early childhood education for these teachers, but only a few teachers are benefiting from it. Second, untrained individuals who have a background in ordinary secondary education are recruited to teach. In contrast to teachers in public schools, teachers in private pre-primary schools have attended courses in early childhood education such as the two-year Montessori course and a few are university graduates in early childhood education and psychology (for more detail see Chapters 2 and 3).

Goals of this Dissertation

No studies are available on children's behavioral adjustment among pre-primary schoolers in the Tanzanian context. It would be useful to have a general picture of children's behavioral

adjustment in Tanzania: whether children are well adjusted or not according to their teachers. Because this is the first study in this cultural context, our first goal was to explore teachers' perception of children's behaviors in terms of adjustment and adjustment problems. As a starting point in this cultural context, this gives more insight into what teachers perceive as adjusted or unadjusted behavior in pre-primary schoolers. Children's behavioral adjustment and behavioral strategies used by teachers to manage children's behavior were explored.

Related to teachers' perception of children's behavioral adjustment, taking into account the fact that these children spend a lot of time with teachers in schools compared with time they spend with their parents, the second goal was to examine the role played by the teacher-child relationship in children's behavioral adjustment. Using cross-sectional and longitudinal designs, we examined the role of the teacher-child relationship at child level (dyadic) and classroom emotional support (at class level) in children's behavioral adjustment. The third goal was to examine the moral thinking underlying a child's behavioral adjustment using moral domain theory. Stories on transgressions in the moral and non-moral domain were used. These goals are outlined in Chapters 2 to 5.

This study contributes to the current literature as follows. First, this is the first study to be conducted in the Tanzanian cultural context. So it provides information on teachers' perceptions of children's behavioral adjustment and predictors of this adjustment in the Tanzanian cultural context. The findings are not only relevant to this specific context, but may also have implications for other African collectivistic contexts. Second, instruments such as an interview schedule and a cultural beliefs questionnaire were developed in the Tanzanian cultural context (Chapters 2 and 3). Third, there has to date been no research on the relationship between moral and non-moral domain distinction, children's social behavior, and the teacher-child relationship, so this topic adds to the literature (Chapter 5).

Line and Structure of the Dissertation

This dissertation comprises of six chapters. In this first chapter we present the background, current knowledge about children's behavioral adjustment, factors linked to successful behavioral adjustment, and pre-primary education in Tanzania. The second chapter, Study 1, explores teachers' perception of children's behavioral adjustment and adjustment problems and teachers' behavioral management strategies in Tanzanian pre-primary schools. The third chapter describes Study 2, which examined children's behavioral adjustment as related to the teacher-child relationship and classroom emotional support. This is a cross-sectional and multilevel approach. The fourth chapter refers to Study 3, which examined teacher-child

relationship and classroom emotional support as predictors of children's behavioral adjustment in Tanzania over time. The study also examined bidirectional relationships between the teacher-child relationship and children's behavioral adjustment. The fifth chapter focuses on Study 4, which examined children's evaluation and justification of transgressions in the moral and non-moral domain and their relationship to children's behavior and the teacher-child relationship in Tanzania. In the sixth chapter findings from all the studies are summarized and implications are discussed.

Outline of the Chapters

Study 1. We explored teachers' perception of children's behavioral adjustment and behavioral management strategies using a structured interview, which was prepared by the author. The author also prepared an interview schedule for teachers concerning child rearing in the context of this study, from which we developed a cultural belief questionnaire for the teachers. The cultural belief questionnaire gathered information on teachers' cultural beliefs regarding obedience, cooperation, and play. The structured interview schedule and the teachers' cultural belief questionnaire were administered in three regions of the mainland of Tanzania, categorized into rural and urban. This categorization was important because we wanted to find out whether there were differences between urban and rural schools regarding the value teachers attach to obedience, cooperation, and play. In this study, 120 teachers from 60 schools participated. Class size ranged between 18 and 140 children (Chapter 2).

Study 2. Children's behavioral adjustment was examined as related to the teacher-child relationship and classroom emotional support. This was a cross-sectional and multilevel study at two levels. Level 1 consisted of the teacher-child relationships (closeness and conflict). Level 2 consisted of classroom emotional support (teacher-sensitivity, positive climate, negative climate, and regard for children), teacher's cultural beliefs (obedience, cooperation, authority, and play) and moderator variables: class size and type of school (public/private). We collected data on classroom emotional support through a classroom observation method using the CLASS-Pre-K measure (Pianta et al., 2008). The author was a reliable user of CLASS (Chapter 3).

In Tanzania we have large class sizes and pre-primary school children attend either public or private schools. Because these school types (public/private) differ in terms of class size and number of teachers per class (Chapter 3), we were interested in finding out whether these characteristics moderate the relationship between children's behavioral adjustment and teacher-child relationships. The main concern in this study was to examine the relationship

between children's behavioral adjustment and the teacher-child relationship, classroom emotional support and teachers' cultural beliefs, and whether these relationships were moderated by class size and/or type of school (public/private).

Study 3. This study was an extension of Study 2, this time using a longitudinal design. We examined whether teacher-child relationship and classroom emotional support on children's behavioral adjustment in Tanzanian pre-primary schools using a longitudinal multilevel approach. This was a two-wave study with a one-year time interval, involving 20 teachers and 310 children from 20 pre-primary schools. Because in Tanzania children spend a minimum of two years in pre-primary school, we specifically aimed to find out whether teachers' perception of children's behavioral adjustment was more positive in Year 2. The questionnaires (PPBQ and STRS) and observational measure (CLASS-Pre-K) which were used in Study 2 were also used in this study. The dependent variables were also the same: children's prosocial, anxious, and aggressive behaviors. Studies have shown that teacher-child relationships and children's behavioral adjustment act in a bi-directional way (Carr, Taylor, & Robinson, 1991; Doumen et al., 2008; Myers & Pianta, 2008). We therefore also examined bi-directional relationships between the teacher-child relationship and children's behavioral adjustment.

Study 4. In this study we examined pre-primary school children's evaluation and justification of transgressions in the moral and non-moral domain and their relationship to children's social behavior and the teacher-child relationship in Tanzania. In this study a child is regarded as a thinking, co-constructive and reflective subject. A child does not only receive messages from the teacher but also interprets information in the context of her/his relationship with the teacher and previous experiences. This was studied by investigating how the child evaluates and justifies the violation of moral and non-moral rules in her/his society and, consequently, how the evaluation and justification relate to the child's social behavior and the teacher-child relationship. In other words, this study focuses on the child's perspective.

Methods used in this study were peer ratings and teacher reporting of children's social behavior. In addition, we used an oral interview containing hypothetical transgression stories to elicit children's evaluation and justification. Eight hypothetical transgression stories (four moral and four non-moral) were used with children from ten schools. Eighty children, 40 nominated as prosocial and 40 nominated as aggressive, participated in the interview. Children were interviewed twice, with a one-month time interval, to examine the consistency of their responses. All the stories used in this study were adapted from previous studies. Teachers reported on teacher-child relationship (closeness and conflict) using the STRS measure and on

children's behavioral adjustment using the PPBQ measure. Teachers' reports on children's behavioral adjustment were used to validate children's social behavior as nominated by their peers. The age of the children ranged between 5 and 7 years ($M = 6.04$, $SD = .60$).

Chapter 6 summarizes the findings from these studies and presents some conclusions about children's behavioral adjustment in Tanzanian preschools. In addition, implications and recommendations for educational practice in preschool are presented.

Chapter 2

Teachers' Perception of Children's Behavioral Adjustment in Tanzanian Pre-primary Schools and their Relationship to Teachers' Cultural Beliefs regarding Obedience, Cooperation, and Play

Manuscript accepted for publication in Infants and Young Children

Abstract

This paper addresses teachers' perception of behavioral adjustment in pre-primary school children and how they relate to teachers' cultural beliefs and to the behavioral management strategies used by the teachers. The sample consisted of 120 pre-primary teachers from 60 schools in three regions of the mainland of Tanzania. Teachers' perception of children's behavioral adjustment and teachers' behavioral management strategies were reported by teachers through interviews, while teachers' cultural beliefs were measured by questionnaires. About 70% of the teachers perceived children to display externalizing behaviors in class, which ranged from moderate (13%) to high (60%) proportions of children, and teachers reported applying supportive as well as restrictive behavioral management strategies to stimulate behavioral adjustment in children. Teachers' use of a restrictive behavioral management strategy was positively related to teachers' perception of children's externalizing behaviors. Furthermore, children in urban schools were perceived to display more externalizing behaviors than children in rural schools. It is argued that current urbanization processes are affecting traditional, collectivistic educational strategies in Tanzania. Implications for future research and educational policy are discussed.

Introduction

When children enter preschool they engage in behavioral adaptation processes. The majority of the children adapt successfully, but some children may display inappropriate behaviors. For example, research showed that at school entry behaviors such as noncompliance, frequent temper tantrums, and aggression are normative behaviors among pre-primary school children (Keenan & Wakschlag, 2000, 2002; Wakschlag et al., 2007). These behaviors are regarded as part of a developmental process that pre-primary school children go through as they begin formal schooling. However, some children maintain these behaviors that may persist and significantly interfere with their social functioning in school (Fox, Dunlar, & Cushing, 2002; Keenan & Wakschlag, 2000). For example, behaviors such as prolonged tantrums, aggression and hurting others are considered as behavioral problems when they go beyond the developmentally appropriate (Fox et al., 2002). In preschool these behaviors are perceived and reported by the teachers as adjustment problems.

According to Keenan and Wakschlag (2000) most pre-primary school children are able to understand school rules and control their behaviors. Teachers have expectations of behavioral adjustment of the children as they start pre-primary school. When children do not

adjust their behaviors according to teachers' expectations these children are perceived to display behavioral problems. Findings from developed countries have shown that some pre-primary school children display aggressive, disruptive, reticent, and withdrawal behaviors, which indicate that their adjustment to the school context is problematic (Bulotsky-Shearer, Dominguez, & Bell, 2012; Bulotsky-Shearer, Fantuzzo, & McDermott, 2010). The same behaviors have been reported in developing countries (e.g., Zimbabwe), showing that some pre-primary school children display aggressive and truancy behaviors (Mpofu, 2003). Children's behavioral adjustment problems in pre-primary school have been reported to be associated with long-term problems such as conflictual relationships with teachers, peer rejection, poor academic performance, and school dropout (Arbeau & Coplan, 2007; Baker, 2006; Bornstein, Hahn, & Haynes, 2010; Chen, Cen, Li, & He, 2005; Hamre & Pianta, 2001; Mpofu, 2003; Silver, Measelle, Armstrong, & Essex, 2005).

Pre-primary school children can encounter and develop behavioral adjustment problems as a result of being in a new situation (i.e., pre-primary school), their temperamental characteristics, the support available from teachers, and/or the interaction between these factors. For example, Rimm-Kaufman, Pianta, and Cox (2000) asserted that at school entry children face difficulties in following school rules and directions because these are new to them, which can partly explain their behavioral adjustment and adjustment problems in pre-primary school. In addition, children experience different rearing styles at home and in school: unlike the family, school is a group setting with no shared history and more formal rules. Furthermore, teachers report that some children are difficult for them to handle due to temperamental characteristics, which have an impact on their behavioral adjustment (Mobley & Pullis, 1991; Rudasill & Rimm-Kaufman, 2009). In summary, the transition from the home setting to a relatively more formal school setting poses challenges to children, which may be perceived by teachers as adjustment problems (Arnold, Barlett, Gowani, & Merali, 2007; Keenan & Wakschalag, 2002).

To stimulate children's behavioral adjustment in the new school context, teachers in Western countries and in China have reported using a variety of behavioral management strategies such as being warm and tolerant towards a child, and encouraging relational support among peers (Chang, 2003; Perry & Weinstein, 1998). In line with these behavioral management strategies, Sakellariou and Rentzou (2012a, 2012b) reported that in Greece teachers help children to understand others' feelings, which has been found to stimulate positive behavioral adjustment in children in school. These strategies are categorized as supportive because they stimulate positive behavioral adjustment in children. The strategies

are commonly practiced in Western cultures where adults practice an authoritative parenting style, which is characterized by high warmth and behavioral control (Baumrind, 1967). In line with this parenting style, teachers practice behaviors which aim to engage children with the purpose of attaining specific socialization goals (Baumrind, 1967; Fletcher, Walls, Cook, Madison, & Bridgets, 2008). In contrast, in some countries such as Israel, specifically the Bedouin community, teachers reported to apply punitive control, including corporal punishment over the children.

Punitive control contributed to anxiety and was associated with school dropout among the Bedouin children (Elbedour, Assor, Centre, & Maruyama, 1997; Elbedour, ElBassiouny, Bart, & Elbedour, 2012). Punitive control, a restrictive management strategy, may harm the child physically and psychologically. Restrictive management strategies are common in cultures, in which an authoritarian parenting style is prevalent. This parenting style is characterized by high behavioral control, but low in warmth (Baumrind, 1967; Fletcher et al., 2008). Furthermore, a study by Sakellariou and Rentzou (2012a) revealed that in Greece, teachers applied both supportive and restrictive management strategies. However, studies contend that behavioral adjustment, adjustment problems, and behavioral management strategies should be explained in light of the cultural orientation of a particular society (Auerbach, Goldstein, & Elbedour, 2000; Chang, 2003; Deater-Deckard & Dodge, 1997; Ho, Bluestein, & Jenkins, 2008), culture shapes children's development, including what is viewed as "appropriate" behavior development as well as ideas about "appropriate" behavior management strategies (Super, Harkness, Barry, & Zeitlin, 2011).

The purpose of this study was to explore teachers' perception of behavioral adjustment of children in pre-primary schools in three Tanzanian regions, as well as the relationship between teachers' perception of behavioral adjustment, their behavioral management strategies and cultural beliefs. A study of this nature in a Tanzanian cultural context is needed in understanding the relationship between teachers' cultural beliefs and teachers' perception of children's behavioral adjustment in this culture. Moreover, the cultural context in African schools traditionally differs from a Western cultural context: most Western countries have a more individualistic orientation and most developing countries are categorized as having a collectivistic orientation (Kagitcibasi, 1996).

Ecological Model

Teachers' perception about children's behavioral adjustment and teachers' cultural beliefs can be analyzed and understood through Bronfenbrenner's ecological model. According to Bronfenbrenner (1977), behavior development is examined in the interaction processes in the immediate setting. Settings are arranged in a nested structure from the lowest to the highest level. For pre-primary school children, the immediate settings where they develop behavior are home and school. Bronfenbrenner call these settings as belonging to the microsystem level. In this study, the microsystem level is the school setting where children interact with the teachers. The teachers have their own beliefs on how children should behave, which may be embedded in the larger Tanzanian cultural pattern. Teachers' beliefs may influence the teachers' perception of children's behavioral adjustment and adjustment problems in pre-primary school. The cultural beliefs may also influence children's behavior adjustment, and this level is known as a macrosystem (Bronfenbrenner, 1977). According to Bronfenbrenner's ecological model, the macrosystem encompasses the overall cultural patterns in the society: subculture and culture. The changes, which may occur in the cultural system, may affect individual's perception, in this case teachers' perception of children's behavioral adjustment. We assume that the urbanization process, which is part of macrosystem level, may affect the traditional child rearing practices in Tanzania, thereby, changing from a collectivistic to a more individualistic orientation or practicing an eclectic approach. This may subsequently affect teachers' perception of children's behavioral adjustment in school and the behavior management strategies used to stimulate behavioral adjustment in children who display behavioral problems.

Teachers' Reports of Behavioral Adjustment and Adjustment Problems in Children

In Western cultures, although most children adjust successfully, behavioral adjustment problems in preschool children have been reported frequently. For example, Lavigne et al.'s (1993) study among African-American children as reported by psychologists and pediatricians revealed that, overall, one in seven children aged between 4 and 5 years has significant behavioral adjustment problems in school. A study carried out by Bulotsky-Shearer et al. (2010) among American children aged 3 to 6 years from low-income families, as reported by teachers, showed that one in seven of the children displayed moderately reticent behavior and one in five demonstrated moderately overactive behavior, e.g., aggressive, oppositional, or inattentive behavior. They further reported that about one in nine of the children displayed higher degrees of overactive behavior. However, when less serious behavioral adjustment

problems were also included, the ratio of young children who displayed behavioral adjustment problems rose. For example, findings from Rimm-Kaufman et al. (2000) on kindergarten children from low-income families in the USA showed that almost half of the teachers reported that about half of their children had difficulty in following directions. In addition, one in three teachers' reports showed that children had problems with working independently, while one in five teachers reported that most children displayed immature behaviors. Boys and children from low social economic status (SES) families have been consistently rated as demonstrating higher rates of externalizing behavior such as aggressive behavior than girls (Bulotsky-Shearer et al., 2012; Chen et al., 2005; Chen & Li, 2000; Crowther, Bond, & Rolf, 1981) and children from high SES families. Internalizing behaviors have been reported to be a problem among girls (Chen & Li, 2000; Lösel & Stemmler, 2012). Since no data are available on children's adjustment in a Tanzanian context, this study explores teachers' perception of behavioral adjustment and adjustment problems in children.

Cultural Beliefs Underlying Teachers' Perceptions of Children's Behavioral Adjustment

Cultural beliefs underlie the behaviors and attitudes of people (in this study, teachers) and the choices they make in their lives. Cultural beliefs influence teacher's perception of children's behavioral adaptations in the school context. Cultural beliefs are part of cultural orientations, which have been categorized as more individualistic or more collectivistic (Harwood, Schölmeric, & Schulze, 2000; Triandis, 1996). Individualistic orientations are mostly identified in Western countries where parents and teachers emphasize independence and autonomy as educational goals. In Western countries, a person can choose and is motivated by his/her own goals (Killen & Wainryb, 2000; Triandis, 1996; Triandis, McCusker, & Hui, 1990). Collectivistic orientations are more prominent in developing countries where aspects of togetherness, cooperation, and interdependence are identified as important values (Steed, Noh, & Heo, 2014) and individuals are motivated to adapt in line with the needs of community members (Killen & Wainryb, 2000). For example, Kagitcibasi (1996) states that orientation of a society towards an individualistic or a collectivistic is embedded in the larger socio-economic settings. In an agrarian society, with little trade and few social services, families are engaged in a struggle to survive. In this context, a child contributes to the family economy, and there will be more emphasis on loyalty and obedience than in a prosperous Western industrial society. In industrialized (or individualistic) societies, not only the individuals themselves but also the families can gain more profit by developing individuals' talents as there are much more opportunities for skilled jobs in these societies than

in a collectivistic or an agrarian society. In addition, cultural beliefs regarding the appropriateness of child rearing strategies differ between collectivistic and individualistic societies.

Different cultural beliefs lead to different management strategies, which relate to the way adults respond to children's behavior in a particular culture (Deater-Decker & Dodge, 1997). Deater-Decker and Dodge (1997) and Ho et al. (2008) argue that the meaning of parenting behaviors – which behavioral management strategies are a part of – may vary among cultures because parenting styles acceptable in one culture may not be acceptable in another. Individualist-collectivist theorists take an eclectic perspective by arguing that each society includes both orientations. Rather than excluding options, the individualistic or collectivistic label simply points to issues being relatively more or less dominant (Harkness, Super, & van Tijen, 2000; Kagitcibasi, 1996, 2005; Raeff, Greenfield, & Quiroz, 2000; Triandis, 1989, 1996; Triandis et al., 1990). In summary, cultural orientations including cultural beliefs guide child-rearing goals and behavioral management strategies, and shape children's behavioral adjustment (Kagitcibasi, 1996; Triandis, 1996). Whether children live in a collectivistic or an individualistic-oriented society, they are expected to adjust their behaviors to the values, norms, and rules of that society.

Tanzania, like many other developing countries, is a more collectivistic-oriented society where children are encouraged to be obedient and show respect towards elders (Lalor, 2004). However, the influence of urbanization and industrialization has led to growth in towns and cities, which may be reducing the degree of collectivism in Tanzanian society, particularly in urban areas. This suggestion is supported by findings from the National Bureau of Statistics (NBS) (2012) showing that a large number of international firms are concentrated in the big cities, with the highest concentration in Dar es Salaam. In contrast, the rural parts of Tanzania are less influenced by forces of urbanization. According to Rimm-Kaufman et al. (2000), preschool children in cities are more prone to externalizing behaviors than their counterparts in rural areas. These researchers observed that town life might expose children to more violence and children may copy violent behaviors. However, there are no data from a Tanzanian context showing a difference between urban and rural schools in terms of children's behavioral adjustment and adjustment problems. This study intends to explore whether there is such a difference.

Teachers' cultural beliefs

Teachers' cultural beliefs guide their ideas, expectations and actions with regard to how children should behave in the school context (Arbeau & Coplan, 2007; Erwin & Kontos, 1998; Rao, NG, & Pearson, 2010; Steed et al., 2014). On the other hand, teachers' cultural beliefs may be influenced by their training as teachers and may therefore differ from the mainstream perspective among parents. With regard to cultural beliefs about child rearing, we restricted our study to cultural beliefs about children's obedience, cooperation among teachers and parents, and children's play. These topics were selected for two reasons. First, they represent strong core values regarding the development and management of young children's behaviors, particularly pre-primary school children (Lalor, 2004). Second, these topics are related to children's behavioral adjustment in collectivistic societies, like Tanzania (Wang & Tamis-Lemonda, 2003; Yaman, Mesman, van IJzendoorn, Bakermans-Kranenburg, & Linting, 2010).

In collectivist societies, obedience for children implies listening and showing respect to elders (Dawes & Biersteker, 2011; Salakana, 1996; Wang & Tamis-Lemonda, 2003; Yaman et al., 2010). For example, if a child follows a parent's instructions and does what he or she is told to do, the child is regarded as obedient. In this study, it further implies that teachers expect children to treat other children nicely, follow teachers' instructions and respect teachers' guidance. In a collectivistic society, child rearing is conceived as a shared task involving cooperation among community members (Rosenthal, 1999; Steed et al., 2014; Yaman et al., 2010). In this study, cultural beliefs about cooperation are expected to relate to cooperation among teachers and with parents in stimulating positive behaviors in children with a focus on promoting successful adjustment among children in schools. For example, if a child displays problem behavior in school a teacher should communicate with the parent about the child's behavior and discuss it. Finally, cultural beliefs regarding play are the basis for the development of important life skills in children, such as cooperation, tolerance, creativity, and are the source of friendship (Rogers, 2011; Salami & Oyaremi, 2012). For example, a teacher who has a positive attitude towards children's play is more likely to nurture play in children, which may indirectly influence learning and behavioral adjustment. The decision to examine teachers' views about play was thus based on the assumption that play fulfills a significant role in a successful educational process, including behavioral adjustment in young children. In this study, play was restricted to children's play inside the classroom. Since empirical studies on teachers' beliefs about children's obedience, cooperation among teachers and with parents, and children's play in Tanzania are lacking, this is an exploratory study.

An Overview of Tanzanian Context and Pre-primary Education

Tanzania is located in the Eastern part of Africa. It has a total area of 945,087 square kilometers. Its population is about 45 million (National Bureau of Statistics, 2012). Agriculture constitutes the most important sector of the economy in the country employing about 80% of its people.

About two decades ago, children in Tanzania joined primary education (Grade 1) without preparation. In 1995, Tanzania established Education and Training Policy of the Ministry of Education and Culture (1995) to prepare young children younger below the age of 7 years and it became mandatory. According to the Education and Training Policy, every child aged 5-6 years in the country has to attend pre-primary school before joining primary education (Grade 1). To implement this policy all primary schools should have a pre-primary class on their premises.

In 1995, pre-primary education became part of the formal education system: 2 years for pre-primary education, 7 years for primary, 4 years for ordinary secondary education, 2 years for advanced secondary education and 3 or more years for higher education (Mtahabwa & Rao, 2010; Tanzania Institute of Education, 2009). In public pre-primary schools, children spend 5 hours a day, from 7:30 am to 12:30 pm, whereas in private pre-primary schools, children spend longer hours and some are in boarding schools. The language of instruction in public schools is Swahili (national language) while in private school it is English.

Pre-primary teachers in public schools are recruited in two ways. First, primary school teachers who have long-standing experience in teaching Grade 1 and 2 are appointed to teach pre-primary classes. These teachers attend short courses in early childhood education in governmental teachers' college. Plan international, a non-governmental organization, has also been organizing training on early childhood education for these teachers. Second, untrained individuals who have a background of ordinary secondary education are recruited to teach. In contrast to teachers in public schools, teachers in private pre-primary schools have attended courses in early childhood like Montessori (a 2 year course) and a few are university graduates in early childhood education and psychology.

The Present Study

The aim of this study was to explore teachers' perceptions of behavioral adjustment and adjustment problems in children and its relationship to behavioral management strategies and teachers' cultural beliefs in Tanzanian pre-primary schools. We also explored how

demographic characteristics (urban/rural location and class size) affect these relationships. The following research questions were formulated to guide this study:

1. What do teachers report of behavioral adjustment and adjustment problems in pre-primary school children?
2. What behavioral management strategies do teachers report to use in pre-primary schools?
3. Are teachers' perceptions of children's externalizing and internalizing behaviors related to behavioral management strategies and their beliefs on obedience, cooperation, and play?
4. How do location (urban versus rural) and/or class size affect these relationships (in question 3)? If they do, what are the differences between urban and rural teachers regarding the value they attach to obedience, cooperation and play?

Method

Participants

Tanzania has 30 regions, 25 on the mainland and five on the islands. Data collection was performed in Tanzanian mainland pre-primary schools selected from three regions: Dar es Salaam, Ruvuma, and Rukwa. Each region was represented by 20 schools and 40 teachers, giving a total of 60 schools and 120 teachers. There was one class in each school. The Dar es Salaam region was selected to represent urban schools, because it is the most industrialized and dense populated area in the country (NBS, 2012), while Ruvuma was selected to represent relatively urban schools because the region is moderately urbanized. The Rukwa region was selected to represent rural schools because it is less industrialized and less urbanized. However, throughout the study we categorized schools as urban and rural because we found that the ten schools from Ruvuma urban centre have urban characteristics and the ten schools located far from the center have rural characteristics.

The number of teachers was limited to two from each school because the staff of a pre-primary school in Tanzania consists of a head of a pre-primary school unit and one or more assistant(s). We asked teachers with more than one year's teaching experience to participate on the assumption that they have experience with different kinds of behaviors displayed by children in schools. Experience with children's behaviors could help them to report children's behavioral adjustment and adjustment problems in school more appropriately. The age range in Tanzanian pre-primary schools is 4 to 6 years. In this study the number of children in the

classes ranged from 20 to 140, with a mode of 23, a median of 53, a mean of 62, and a standard deviation of 31. The class size was positively skewed.

Tanzanian schools have two terms in academic year. The first term starts in January and the second starts in July. Data collection was done in the second term between the end of July and the beginning of October. The majority of the teachers were female (97.5%). In total, the age ranged between 20 and 60 years. In urban schools, teachers' age ranged between 20 and 55 years and in rural schools it ranged between 23 and 60 years. The average age was categorized as follows: below 25 (8.3%), 26-35 (27.5%), 36-45 (43.3%), 46 and above (20.8%). Regarding the educational level, the majority of the pre-primary school teachers (84.2%) had ordinary secondary education, 4.2% an advanced secondary education, 8.3% only a primary education, and 3.3% a university education. Three quarter of the teachers had training in early childhood education (ECE) and had a certificate in ECE, 4.2% a diploma in ECE, 0.8% a degree in ECE, and 18.3% did not attend any training in ECE.

Instruments

Teacher interview schedule with regard to teachers' perception of children's behavioral adjustment

The first author prepared an interview schedule to collect information about teachers' perception of behavioral adjustment in children and behavioral management strategies applied by teachers. The strategy we used to develop an interview schedule in this study has also been used by other researchers in developing questionnaires (e.g., Wang & Tamis-Lemonda, 2003). To ensure content validity, we prepared open-ended questions based on anecdotal experience by interviewing ten teachers in Dar es Salaam region. To avoid interrupting classroom activities, we conducted a face-to-face interview in the classroom after class hours. The interview lasted for 35 to 45 minutes. The interviews were audiotaped and transcripts were extracted. From the pilot interview, we developed categories of answers. Next, we grouped the related reported response outcomes into categories, which formed the basis for teachers' responses in the current study. For example, "How do children behave in your class?" Teachers' responses included answers such as some children show quiet, pro-active, and/or unadjusted behaviors. Teachers' report on being quiet referred to children who did not make much more noise and did not move around in the class. Teachers reported that some children were very active, that they would help the teacher or other children without being asked and that sometimes these children engage in other activities while the teacher is teaching. These children were referred to as pro-active. Unadjusted behaviors were such as fighting, being

naughty, kicking and bullying other children, or did not respect teachers' guidance and instruction. In this study, unadjusted behaviors such as fighting, kicking, and bullying were reported as externalizing behaviors, which is an appropriate concept used to group these behaviors in the professional literature (Deater-Deckard & Dodge, 1997; Mantzicopoulos, 2005; Spilt, 2010). Then we asked teachers how they would like children to behave. They responded that they would like children to be quiet in class. Furthermore, we asked teachers whether boys and girls behave differently in class. Teachers reported that some boys fight, kick and bully other children, while girls were reported to be fearful, passive, and reticent. These behaviors were categorized as externalizing and internalizing respectively (see also Mantzicopoulos, 2005; Spilt, 2010).

After we had interviewed the teachers about behavioral adjustment problems in children we subsequently interviewed them about the strategies they used to manage children's behaviors. Their responses included "discussing the child's problem behavior with the child's parents". We categorized a strategy as a supportive management when it stimulated behavior of the child in a friendly way. Other responses including "asking a child who displays behavior problems to stand while others are sitting" were categorized as a restrictive management strategy because it involved punishing a child who displayed problem behavior with the aim of ending the undesirable behavior.

From the pilot study, we prepared four main questions for a structured interview about teachers' perception of children's behavioral adjustment and two questions about behavioral management strategies, which were used in the main study. Each question had several response categories. In the main study, the teachers reported general behaviors displayed by the children and the behavioral management strategies they used to stimulate positive behavioral adjustment. For example, to answer the question: "What kind of behavioral adjustment and adjustment problems do children display while in the classroom?" we listed behavioral adjustment (3 items) and adjustment problems (5 items) (based on the pilot study), and the teacher responded with yes or no. An example of adjustment problem behavior was: "Children fight in the classroom". Yes-responses were given the value of 1 and no-responses were given the value of 0. Measures for adjustment problem behaviors (externalizing and internalizing) and management strategies were summed and reliability was high (see Table 1). All interviews were held face-to-face at the school with the teacher and conducted by either the first author or a research assistant. The interview lasted for 35 to 45 minutes. The pilot study was carried out in Dar es Salaam region for practical reasons. Teachers in Dar es Salaam

come from different parts of Tanzania, which gave us the opportunity to test our measures with teachers of different regional backgrounds.

Table 1

Descriptive statistics for the teachers' cultural belief questionnaire and the teachers' responses regarding children's behavioral adjustment and management strategies: number of items, minimum, maximum, means, SD and Cronbach's Alpha

Measures	No. of items	Min	Max	M	SD	α
Teachers' cultural beliefs						
Obedience	6	3.33	5.00	4.24	.46	.85
Cooperation	4	2.25	5.00	4.53	.52	.84
Play	4	1	2	1.38	.40	.86
Behavioral adjustment problems						
Externalizing problems	5	0	5	4.09	1.40	.83
Externalizing problems in boys	3	0	3	2.84	.59	.86
Internalizing problems in girls	4	0	4	2.70	.95	.82
Behavior management strategies						
Restrictive management strategies	5	0	5	3.40	1.57	.79
Supportive management strategies	2	0	2	1.85	.40	.81

Development of a cultural beliefs questionnaire

The first author developed a cultural beliefs questionnaire for the teachers. To ensure that the items would be appropriate to the Tanzanian pre-primary school context, we took the following steps: on the basis of literature concerning cultural beliefs and child rearing in collectivistic societies (Killen & Wainryb, 2000; Lalor, 2004; Salakana, 1996; Triandis, 1996; Wang & Tamis-Lemonda, 2003; Yaman et al., 2010), we designed a semi-structured interview consisting of open-ended probes to determine teachers' cultural beliefs, i.e., without offering choices or responses. This strategy has been used by other researchers of cultural beliefs (Wang & Tamis-Lemonda, 2003). Ten pre-primary school teachers in Dar es Salaam were interviewed to explore their cultural beliefs concerning children's behaviors in pre-primary school. The interviews were audio taped and transcripts were extracted. Forty items were created on the basis of the teachers' responses and thereafter sorted and grouped to avoid overlap in meaning, which reduced the total number of items to 16. For example, items like "Children should not move in the classroom" and "Children need to sit quietly on their chairs

and listen to the teacher” were represented by an item which reads “Children need to sit quietly on their chairs and listen to the teacher”. Because the author developed the instruments in English she translated them into Swahili and back translation was checked by two Tanzanian colleagues from the Open University of Tanzania, fluent in both Swahili and English. They also checked if the items were culturally relevant to the Tanzanian context. The items were translated into Swahili because most teachers in Tanzanian schools are fluent in that language and they responded to items in Swahili language.

Items were rated on a 5-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5). A higher score implied a stronger belief in obedience, cooperation, and play, a lower score a less strong belief. Subsequently, using the data of the main study ($N = 120$), we subjected the 16 items to principal component analysis (PCA) using IBM SPSS 20 to check whether the data were suitable for PCA. The correlation matrix of the items revealed many bivariate correlation coefficients of .30 and above. The Kaiser-Mayer-Olkin (KMO) value was significant: $.79, p = .000$. PCA revealed five components with eigenvalues exceeding 1, explaining 30.10%, 18.17%, 12.61%, 7.81% and 6.32% of the variance respectively, with a total of 75.03% variance.

To enable us to make a more accurate decision on the number of factors, Monte Carlo PCA for parallel analysis was calculated and we compared the first eigenvalue from PCA with the corresponding first value generated by parallel analysis. According to Pallant (2007), if the value from PCA is greater than the value from parallel analysis the factor can be retained, but if it is smaller, it can be rejected (Table 2). After parallel analysis, two items revealing less than .30 correlation coefficient values in the communalities were dropped. These items read “Threats are the best way of managing a child who displays problem behavior” and “When a child displays problem behavior, the teacher has the authority to punish him/her.” Consequently, 14 items remained and the KMO measure changed, becoming $.81, p = .00$.

Three components with eigenvalues exceeding 1, explaining 32.28%, 20.21%, and 14.37% of the variance, were found. The three components explained a total of 66.86% of the variance. Oblimin rotation was performed with all items showing a strong loading on one of the three factors; for example, component 1 (.61-.91), component 2 (.79-.87), component 3 (.70-.87). The components were labeled “obedience”, which consisted of 6 items ($\alpha = .85$); “play”, consisting of 4 items ($\alpha = .86$) and “cooperation”, consisting of 4 items ($\alpha = .84$). For number of items, means, standard deviation and reliability see Table 1 and for Pearson correlations between sub-scales see Table 3.

Ethical Procedure

Permission to conduct the research was issued by the Regional Administrative Secretary (RAS) from all three regions (Dar es Salaam, Ruvuma, and Rukwa). Verbal consent to participate in the study was sought from the teachers. We explained the aims and objectives of the study and teachers were free to participate or not. All contacted teachers willingly agreed to participate in the study. Teachers received a small payment for their participation.

Data Analysis

The data were analyzed using descriptive statistics, multivariate analysis of variance (MANOVA), chi-square-tests, and multiple regressions. Descriptive statistics were used to report teachers' perceptions of children's behavioral adjustment in Tanzanian pre-primary schools and other demographic variables. A one way between groups ANOVA was used to find out whether there was a difference in the mean score on teachers' perception of externalizing behavior across groups of class size. We ran MANOVA to test the differences in cultural beliefs between teachers working in urban and rural areas. A chi square test was done to determine whether the perceived externalizing behavior of children was significant different across teachers in rural versus urban settings. We ran multiple regression analyses to investigate the relationship between teachers' perception of children's externalizing behavior and teachers' cultural beliefs on the one hand and behavioral management strategies on the other. A moderation model (Andrew Hayes' process model 1 & 2) (Hayes, 2012) was used to investigate the nature of the relationships. Data were analyzed using IBM SPSS 20 version.

Results

Teachers' perception of children's behavioral adjustment and adjustment problems

Seventy per cent of the teachers perceived that children displayed externalizing behaviors while in class, while 22.5% of the teachers reported that children were quiet, and 7.5% of the teachers reported that children were pro-active (Table 4). Teachers' reports were contrary to their expectations: 90% expected children to be quiet while 9% wished children to be pro-active and one percent wished children to display externalizing behaviors, (Table 4). The teachers reported an overall number of children who displayed externalizing behaviors in their classes, which ranged between 13% and 60%. According to the teachers this implies that children displayed behavioral adjustment problems. Teachers' perception of the differences in behavioral adjustment and adjustment problems between boys and girls were explored.

Generally, teachers reported that boys displayed more externalizing behaviors than girls, while girls were reported to display more internalizing behaviors compared to boys (Table 4).

Table 2

Comparison of eigenvalues from PCA and criterion values from parallel analysis

<i>Component number</i>	<i>Actual eigenvalues from PCA</i>	<i>Criterion values from parallel analysis</i>	<i>Decision</i>
1	4.817	1.681	Accepted
2	2.908	1.525	Accepted
3	2.018	1.413	Accepted
4	1.251	1.307	Rejected
5	1.012	1.225	Rejected

Behavioral management strategies

There was a discrepancy between what teachers experienced and what they would like to see with regard to children's behavioral adjustment. Teachers reported using supportive and restrictive management strategies to stimulate children's behavioral adjustment in class. For example, talking to a child who displayed problem behavior was one of the supportive management strategies, while asking other children to shout at the child who displayed problem behavior was an example of restrictive management strategies (Table 4). Results showed an overlap of percentages indicating that teachers used a combination of both supportive and restrictive management strategies, but in different degrees. Furthermore, we asked teachers whether there were professional management strategic standards for supporting children who displayed problem behaviors. Almost all (99%) of the teachers reported that there were no professional management strategic standards in schools (Table 4).

Table 3

Pearson correlation of variables (bivariate) (N=120)

Constructs	1	2	3	4	5	6	7	8
<i>Teachers' cultural beliefs</i>								
1. Obedience		.25**	-.16	.04	-.07	.02	-.07	-.12
2. Cooperation			-.26 **	.23 **	.07	.00	.09	-.11
3. Play				.17	.05	.07	-.08	.00
<i>Teachers' opinions about children's behavioral adjustment</i>								
4. Externalizing behavior (general)					.27 **	.25 **	.38 **	-.07
5. Externalizing behavior-boys						.19 *	-.01	-.02
6. Internalizing behavior-girls							-.15	.29 **
7. Restrictive management strategy								-.06
8. Supportive management strategy								

Note: * $p < .05$, ** $p < .01$

Table 4

Teachers' responses to children's behavioral adjustment (percentages and frequencies)

<i>Behavioral adjustment items</i>	<i>Response:</i>	
	<i>Agree</i>	<i>Disagree</i>
	<i>% (N)</i>	<i>% (N)</i>
<i>How do children behave in your class in general</i>		
1.Display externalizing behavior	70.0 (84)	30.0 (36)
2.Quiet	22.5 (27)	77.5 (93)
3.Pro-active	07.5 (9)	92.5 (111)
<i>What kind of behavior do you expect from children while in class?</i>		
1.Externalising behavior	01 (01)	99 (119)
2.Quiet	90 (108)	10 (12)
3.Pro-active	09 (11)	91(109)
<i>Behavioral adjustment displayed in class</i>		
1.The children are restless in class	92 (110)	08 (10)
2.The children fight in class	87 (104)	13 (16)
3.Some children bully other children in class	88 (105)	12 (15)
4.Some children kick other children in class	87 (104)	13 (16)
5.The children use abusive language	59 (71)	41 (49)
<i>Report of problem behaviors according to gender</i>		
1.Boys bully other children more than girls	96 (115)	04 (05)
2.Boys are more restless than girls	94 (113)	06 (07)
3.Boys fight more than girls	94 (113)	06 (07)
4.Girls are more passive than boys	88 (106)	12 (14)
5.Girls live in isolation than boys	85(102)	15(18)
6.Girls are reticent	92(111)	08(09)
7.Girls are more fearful than boys	89(107)	11(13)
<i>Strategies used by teachers to manage children's behavior</i>		
1.Talk to the child	92 (111)	08 (09)
2.Discuss the child's behavior with parents	93 (112)	07 (08)
3.Give a child a task to do	77 (92)	23 (28)
4.Make the child stand while others are sitting	82 (98)	18 (22)
5.Pinch the child	79 (95)	21 (25)
6.Allow other children laugh at her/him	72 (87)	28 (33)
7 Threaten the child	30 (37)	70 (83)
Are there clear professional standards for teachers on how to correct a child who displays problem behaviors in class?	01 (01)	99 (119)

Teacher's cultural beliefs regarding obedience, cooperation, and play in urban and rural locations

We examined whether teachers' value attached to cooperation, obedience, and play differed between rural and urban Tanzanian pre-primary schools. Results revealed a statistically significant difference in teachers' cultural beliefs in urban as compared to rural areas (Wilks' Lambda) $F(3, 116) = 3.20, p < .05$). MANOVA was followed by analysis of variance (ANOVA) to find the between-subject values. Since the acceptable significance value for three ANOVAs should be $p < 0.017$ (Field, 2009), the between-subject results showed non-significant differences in teachers' cultural beliefs: play $F(1, 118) = 5.40, p = .022$, cooperation $F(1, 118) = 5.29, p = .023$, and obedience $F(1, 118) = 0.01, p = .846$. A discriminant analysis was run to determine whether teachers' beliefs contributed to group separation. Box's M indicated that the assumption of equality of variance was met: $7.22, p = .32$. Analysis of the structured matrix revealed two significant independent variables, play and cooperation, which were fairly strongly loaded: $r = .74$ and $r = -.74$ respectively, indicating play to be more valued in urban schools and cooperation to be more valued in rural schools. The cross-validation classification showed that an overall 62.5% of the variance was correctly classified.

Relationship between teachers' perception of children's behavioral adjustment and teachers' cultural beliefs, and behavioral management strategies

The correlation matrix (Table 3) showed mostly low to weak correlations, while a few variables were moderately correlated. A moderately positive correlation was revealed between restrictive management strategies and externalizing behaviors ($r = .38, p < .01$), meaning that more frequent reports of the use of restrictive management strategies were associated with more frequent reports of externalizing behaviors in children. No correlation was found between externalizing behaviors and supportive management strategies. In addition, no correlation was found between restrictive and supportive management strategies, implying that more frequent reports of the use of restrictive management strategies were not associated with reporting of more or less use of supportive management strategies (Table 3). Of the three topics in teachers' cultural beliefs, only cooperation revealed a significant but weak positive correlation with externalizing behaviors ($r = .23, p < .01$) (Table 3). This implies that a stronger belief in cooperation was associated with more reporting of externalizing behaviors.

We also examined whether class size and location (urban or rural) affected the relationship between teachers' perception of children's externalizing behaviors and teachers' cultural beliefs, and the relationship between teachers' perception of children's externalizing

behaviors and behavioral management strategies. Using multiple regression analysis (Hayes, model 2) (Hayes, 2012), the interaction effect between teachers' beliefs regarding cooperation and class size was weakly negatively related to teachers' perception of externalizing behaviors in children ($\beta = -.09$, $t(5,114) = -2.50$, $p < .01$) (Table 5). This implies that in classes with fewer children, the relationship between beliefs on cooperation and teachers' reports about their perceptions of children's externalizing behaviors was stronger than in classes with many children. Cohen's effect size value ($d = .45$) suggests a large effect. There was no increase in variance explained by the interaction terms (Table 5). The interaction effect between restrictive management strategies and location (urban versus rural) was weakly and negatively related to externalizing behaviors ($\beta = -.07$, $t (3,116) = -2.27$, $p < .05$) (Table 6). In addition, there was no increase in variance explained by the interaction terms. This result indicates that in urban, the relationship between restrictive management strategies and teachers' perception of externalizing behaviors in children was stronger than in rural areas. Cohen's effect size value ($d = -.14$) suggests a weak effect.

Table 5

Outcome variable: Teachers' perception of children's externalizing behavior

Independent variable: cooperation; Moderator variables: Class size (small, medium and large) and location (urban or rural)

Model summary

R	R-sq	F	df1	df2	p
.5914	.3498	12.2641	5.0000	114.000	.0000

Moderation model:

Model	Coefficient	SE	t	p
Constant	.82	.02	38.41	.00
Class size	.07	.03	2.27	.02
Cooperation	.02	.02	1.25	.21
Cooperation x class size	-.09	.03	-2.50	.01
Location (urban or rural)	11	.03	3.52	.00
Cooperation x location	-.00	.11	-.03	.91

We used a chi square test to determine whether there was a significant difference between the expected and observed results of teachers' perception of externalizing behavior of children between urban and rural settings as would be expected in the general population. This

was the case. There was a significant difference between the expected and observed results of teachers' perception of externalizing behaviors of children between urban and rural schools. The difference was statistically significant $\chi^2 (5) = 28.69, p < .001$. Cohen's effect size value ($d = .79$) suggests a strong effect. A one way between groups analysis of variance was conducted to explore the impact of class size on teachers' perception of externalizing behaviors. Class size was divided into three groups: small, medium, and large. We found a statistically significant difference in mean scores between the groups $F(2, 117) = 12.65, p < .01$. A post hoc comparison using Turkey HSD test indicated that the mean score for group 1 ($N = 17$; range 18 – 40 children) ($M = .63, SD = .38$) was significantly different from group 2 ($N = 16$; range 41 – 60 children), ($M = .85, SD = .24$) and group 3 ($N = 27$; range 61 – 140 children) ($M = .91, SD = .27$). Cohen's effect size value ($d = 1.57$) suggests a strong effect. We did not find a significant difference between group two and group three. In sum, the findings revealed that teachers with smaller class sizes were found to perceive less behavioral adjustment problems in children than those with medium or large class sizes.

Table 6

Outcome variable: Teachers' perception of children's externalizing behavior

Independent variable: restrictive management strategy, Moderator variable: location (rural/urban)

Model summary

R	R-sq	F	df1	df2	p
.5569	.3101	12.597	3.0000	116.000	.0000

Moderation model

Model	Coefficient	SE	T	p
Constant	.82	.02	38.34	.00
Location(rural/urban)	.20	.02	4.75	.00
Restrictive management strategy	.06	.02	3.85	.00
Restrictive management strategy x location	-.07	.02	-2.27	.02

Discussion

The purpose of this study was to explore teachers' perception of behavioral adjustment displayed by children, their relationship with behavioral management strategies used by teachers and teachers' cultural beliefs in Tanzanian pre-primary schools, as well as possible moderators (urban/rural and class size) of these relationships. The teachers' perception of behavioral adjustment and adjustment problems reported in this study reflects a general picture of the existence of these problems in Tanzanian pre-primary schools. We used an explorative approach, which was used earlier by Rimm-Kaufman et al. (2000).

In this study, teachers reported that they perceived children to display behavioral adjustment and adjustment problems in pre-primary schools. Teachers see children as successfully adapting to the new environment. However, a high percentage of teachers reported that children displayed a variety of adjustment problems of externalizing behaviors (Table 4). The teachers' perception of various externalizing behaviors in children reported in this study might be attributed to large class sizes. We found a significant impact of class size on teachers' perception of externalizing behaviors indicating that teachers in classes of small size perceived less externalizing behaviors than teachers in classes of medium or large size. In the latter circumstance a teacher may perceive difficulties in managing children's behavior in classes with large number of children. For example, it is difficult for a teacher to manage and pay individual attention in a class with more than 60 children. This finding is consistent with Elbedour et al. (2012) and Rimm-Kaufman et al. (2000), who argue that overcrowded classrooms contribute to a disruptive environment. The high percentage of teachers reporting perceiving a high degree of externalizing behaviors in children may mean that the job is stressful for teachers.

The higher levels of teachers' perception of externalizing behaviors in urban schools might be attributed to children's exposure to urban life. Although findings in this study reflect a general picture of teachers' perception of behavioral adjustment and adjustment problems in the children, they are contrary to Rimm-Kaufman et al.'s (2000) findings of a higher frequency of children's problems behaviors in rural than in urban schools. Nevertheless, Rimm-Kaufman et al. (2000) argue that crowded and anonymous urban environments might be associated with violent and aggressive behavior on the part of adults and children; younger children may easily copy and practice these behaviors in classroom. In addition, urban children might have been more often exposed to social media such as televisions and internet than children in rural areas, from which they might learn and copy different kinds of behaviors including aggression (Anderson & Bushman, 2001; Gentile, Lynch, Linder, & Walsh, 2004;

Huesmann, Moise-Titus, Podolski, & Eron, 2003; Silvern & Williamson, 1987). The difference in teachers' perception of children's externalizing behaviors between urban and rural schools possibly suggests that the urbanization process which is taking place in Tanzanian cities is moving the traditional collectivistic orientation towards a more individualistic orientation.

Our findings show that both supportive and restrictive management strategies were reported to be used in managing children's behaviors. These findings are consistent with the study by Sakellariou and Rentzou (2012a), which indicates that teachers use both strategies, but in different degrees. This may reflect the lack of standard management strategies to stimulate behavioral adjustment in children, a view which can be supported by the fact that 99% of the teachers responded that there were no professional management standards in Tanzanian pre-primary schools.

Reports of using restrictive management strategies were positively related to teachers' reports of their perception of externalizing behaviors in children. This might be the case because a restrictive management strategy may trigger anger in children and children may consequently behave aggressively (e.g., Hasanvand, Khaledian, & Merati, 2012). Similarly, teachers may not tolerate externalizing behaviors, which may force them to respond negatively in the form of punishment (Birch & Ladd, 1998). The relationship may therefore suggest a bidirectional or circular pattern (Doumen et al., 2008; Myers & Pianta, 2008; Patterson, 1977). However, the general report of teachers' perception of externalizing behaviors in this study reflects its status as an exploratory study, which is correlational in nature and cannot establish the direction of the relationship between variables.

Surprisingly, no correlation was found between teachers' beliefs and behavioral management strategies. Behavior management strategies are of course not only influenced by beliefs, but also by the temperament and behavior of the child (cf. Deater-Deckard & Dodge, 1997) as well as characteristics of the teacher and the situation. Also surprisingly, a positive correlation was found between teachers' beliefs on cooperation with parents and their perception of children's externalizing behaviors. This may imply teachers cooperate with parents in reaction to the perceived externalizing behaviors in children. Again, this study was exploratory and cannot come to any conclusion on the direction of effects.

In this study, location, i.e., urban versus rural areas, was introduced to examine if it affected the relationship between restrictive management strategies and teachers' perception of children's externalizing behaviors in schools. This indeed was found to be the case. The findings suggest that teachers were more likely to apply restrictive management strategies in

urban schools than in rural schools. This may be attributed to teachers' perception of children's externalizing behaviors in urban schools as reported in this study. The perceived externalizing behaviors are more likely to attract restrictive management strategies because it may cause anger in the teachers. However, these results should alert teachers and educational psychologists to the fact that restrictive management strategies are more likely to impair children's behavioral adjustment in early years. Moreover, children are unlikely to learn appropriate behaviors from being punished, but they might copy the teacher's punishing behavior. The findings suggest that supportive management strategies might be the best option in stimulating behavioral adjustment in children. This may lessen children's behavioral adjustment problems in subsequent school years (cf. Chang, 2003; Perry & Weinstein, 1998; Sakellariou & Rentzou, 2012a).

We also examined whether class size had an effect on the relationship between teachers' beliefs regarding cooperation and teachers' perception of children's externalizing behaviors. The correlation was significant, but rather low in classes with relatively few children. Though the moderator effect was fairly small, this outcome may suggest that in Tanzanian pre-primary school teachers' beliefs on cooperation play a more significant role in mediating the perceived behavioral adjustment problems in classes with few children as compared to classes with many children.

We examined whether there were differences in cultural beliefs concerning cooperation, obedience, and play between teachers working in urban schools as opposed to those working in rural schools in Tanzania. This partly was the case. Cooperation was more highly valued in rural schools, while play was more highly valued in urban schools. This might imply that teachers in Tanzanian rural schools consider cooperation with parents as an important factor to stimulate behavioral adjustment in children than teachers in urban schools. In addition, Tanzanian rural areas are predominantly collectivist oriented; as a result, cooperation receives more emphasis in rural schools (Kagitcibasi, 2005; Yaman et al., 2010). Within an individualistic orientation and in modern parenting attitudes, play is highly valued and encouraged (Rogers, 2011). This may reflect the urbanization processes taking place in urban areas, which have possibly shifted town life from a more collectivistic to a more individualistic orientation.

Teachers in urban and rural schools did not differ in their beliefs concerning obedience in children. This implies that, although Tanzanian cities like Dar es Salaam are more industrialized, which may give rise to a more individualistic life style, their populations have retained their cultural values, which seem to reflect a more collectivistic orientation, as

exemplified in obedience. However, it may imply that Tanzanian society reflects both orientations, with the collectivistic orientation being dominant (Kagitcibasi, 1996, 2005; Super et al., 2000; Triandis et al., 1990). The high percentage (about 90%) of teachers who expected children to be quiet while in class supports this interpretation (Table 4).

Strengths, Limitations, and Future Direction

This is the first study to address teachers' perception of behavioral adjustment and adjustment problems in children in a Tanzanian pre-primary school context, and their relationship with the management strategies used by teachers and teachers' cultural beliefs. No findings regarding teachers' perception of externalizing behaviors in children, and management strategies reported to be used by the teachers were available for Africa and Tanzania in particular. Our results therefore shed light on the teachers' perception of behavioral adjustment and adjustment problems displayed by pre-primary school children and behavioral management strategies reported to be used by teachers in Tanzania. We developed interviews and a questionnaire for teachers to be used in the Tanzanian cultural context and we used a probing procedure to develop this questionnaire, which has been used before by other researchers (Wang & Tamis-Lemonda, 2003). The questionnaire was found to be reliable (Table 1), which added to the methodological strengths of this study. Furthermore, the same procedure of gaining a general view of the problem behaviors in children has been used by other researchers (see Rimm-Kaufman et al., 2000).

The study has the following limitations. First, teachers in this study reported an overall picture of their perception of children's behavioral adjustment and adjustment problems in the classroom. For example, we used interviews to explore the extent to which teachers perceived behavioral adjustment of children in class. Such data did not exist before, which might have led to guessing and subsequent under-reporting or over-reporting of such behavioral adjustment problems. In addition, large class sizes might have inhibited teachers from reporting an accurate number of children who displayed behavioral adjustment problems. For a clearer picture of behavioral adjustment in children, future research needs to consider reporting on the individual child's behaviors in the class. Second, because the study explored basic information teachers reported several behavioral management strategies without prioritizing the ones they used most. Future research should consider this as well as situations in which they use these strategies. Third, because this study was exploratory it was limited to teacher interviews and questionnaires; we suggest that in order to get a more valid picture of children's behavioral adjustment, future studies should consider a classroom observation

method. Fourth, future research should investigate how children perceive and interpret the behavioral management strategies used by teachers in Tanzania. This may produce more detailed empirical evidence on the role of the behavioral management strategies used in a Tanzanian context. Fifth, we suggest that in future, research into more effective strategies for managing behavior in classes with many (over 40) children is needed.

Implications

To reduce children's behavioral problems in pre-primary schools as perceived by teachers, we suggest that preventive strategies for managing child behaviors, like clear rules and behavioral instructions for teachers, need to be considered in the Tanzanian context in both pre-primary education and teacher training colleges. We suggest that teachers, educational psychologists, and policy makers need to consider children's behavior in early years as an important aspect that needs to be developed and nurtured appropriately, because it is an antecedent of important social and academic developmental aspects that follow in the child's life. Furthermore, short term plans need to be implemented to cope with the current large class size while working with long term plans such as employing more teachers to cope with large class size in the country.

Conclusion

This study highlights a general picture of teachers' perception of behavioral adjustment and adjustment problems of young children in Tanzanian pre-primary schools; an area which is under-researched. Types of behavioral adjustment problems at age 4 to 6 such as externalizing behavior that are reported in this study are the same as those reported in developed countries. Applying both supportive and restrictive behavioral management strategies indicates that in Tanzania teachers apply authoritative as well as authoritarian child rearing styles. To stimulate positive behavioral adjustment in children teachers should learn and apply more supportive behavioral management strategies.

Chapter 3

Children's Behavioral Adjustment in Pre-primary Schools in Tanzania: A Multilevel Approach

Early Education and Development, 25, 356-380.

Abstract

The present study concerns children's behavioral adjustment in the context of pre-primary schools in Tanzania. Twenty teachers and 320 children from 20 pre-primary schools participated in the study. Teacher-child relationship, children's behavioral adjustment and teachers' cultural beliefs were reported by teachers; classroom emotional support was measured through classroom observation. The multilevel findings revealed that high-quality teacher-child relationship and high-quality teacher sensitivity were related to children's prosocial behavioral adjustment. In contrast, observed low quality teacher-child relationships and low-quality teacher sensitivity were found to be related to children's aggression and anxiety. In addition, teachers' cultural beliefs, concerning play in particular, were found to be related to children's anxiety. The findings support the ecological theory regarding the importance of child characteristics and classroom context in shaping the child's behavioral adjustment in schools. *Practice or policy:* The results have implications for pre-primary school teachers in Tanzania, to consider their relationship with children and their sensitivity to children as important aspects for children's behavioral adjustment in schools. They also inform policy makers about the role of pre-primary school teachers in the country.

Introduction

Children start pre-primary school when they have already learned and acquired particular behaviors in their home setting and in their peer-group relationships. Consequently, behavioral adjustment among children in pre-primary schools differs in part due to differing experiences at home. Studies on behavioral adjustment in pre-primary schoolers that investigate the processes of child transition from home to school (Fabian & Dunlop, 2007; Shonkoff & Phillips, 2000) have reported on the risks and opportunities children may encounter in the early years when starting school. Associated risk behaviors such as anxiety, confusion, or worries in a new environment tend to affect children's behaviors and learning if not addressed (Fabian & Dunlop, 2007). The new opportunities for children in school involve positive behaviors, which include sense of togetherness, collaboration, peer affiliation, tolerance and social relationships (Kernan & Singer, 2011).

Once they start pre-primary school, children engage in adaptation processes; they are exposed to a new context where they meet and interact with new adults and peers. These adaptation processes may lead to appropriate or inappropriate behavioral adjustment. Adjusting to the new school context is a challenge for young children, which requires

workable strategies to help them adapt smoothly to the new environment (Bruce, 2004; Fabian & Dunlop, 2007; Fantuzzo, Bulotsky-Shearer, Fusco, & McWayne, 2005; Garcia, Pence, & Evans, 2008).

Many studies have related behavioral adjustment among pre-primary schoolers to the relationship formed between teachers and children (e.g., Baker, 2006; Cadima, Leal, & Burchinal, 2010; Kesner, 2000; Silver, Measelle, Armstrong, & Essex, 2005; Stuhlman & Pianta, 2001). Most of these studies have investigated the contribution of harmonious and disharmonious teacher-child relationship to children's behavioral adjustment using a single level approach. In line with the teacher-child relationship, some studies have reported the contribution of teacher-child interaction at the classroom level. Teacher sensitivity and positive climate have been reported to influence children's prosocial behavioral adjustment as well (Buyse, Verschueren, & Doumen, 2011; Rimm-Kaufman et al., 2002). However, little is known about the influence of both, the individual and classroom level characteristics on children's behavioral adjustment in pre-primary schools. In addition, many of the previous studies on this subject have been conducted in the Western cultural context. To the best of our knowledge, no study has been conducted in an African cultural context, more specifically in Tanzania, which addresses teacher-child relationship and children's behavioral adjustment in pre-primary schools.

Tanzania offers an interesting case when looked at from the perspective that children's behavioral adjustment can be best understood by considering the cultural context in which it is embedded (Rosenthal, 1999). Specifically, the relationships between teacher-child relationship, classroom emotional support and children's behavioral adjustment has to be explained in line with existing cultural aspects of the society in question, in this case Tanzania.

Several Western studies have examined teachers' beliefs by relating these to teachers' practices (Coplan, Hughes, Bosacki, & Rose-Krasnor, 2011; Lynch, 2009; Pajares & Graham, 1998; Rimm-Kaufman, Storm, Sawyer, Pianta, & LaParo, 2006; Sakellariou & Rentzou, 2012). The common reported measure used to study teachers' beliefs among the Western culture is the teacher belief questionnaire. However, there are no known studies examining teachers' beliefs in a Tanzanian cultural context. Consequently, there are no psychometrically sound measures available to suit the Tanzanian context. This study is the first to address cultural beliefs among the pre-primary school teachers in a Tanzanian context. Teachers' cultural beliefs form an important aspect of our study because Tanzania is assumed to have its own ways of orienting children to cultural values, which might contribute to children's behavioral adjustment upon starting schooling.

The present study aims to investigate the relationship between child level and classroom level characteristics, and children's behavioral adjustment in the Tanzanian context. This is a survey and an observational study combined with a multilevel approach. The child level consists of the teacher-child relationship, and its constructs are closeness and conflict, while the child's behavioral adjustment is studied in terms of prosocial behavior, aggression, and anxiety. The classroom level consists of classroom characteristics (teacher/child ratio and types of school), emotional support and teachers' cultural beliefs. Classroom emotional support comprises four constructs, which are positive climate, negative climate, teacher sensitivity, and regard for pupils' perspective. Teachers' cultural beliefs are restricted to cooperation, authoritativeness, obedience, and play. Hence, this study is unique as it combines a cultural perspective with a multilevel approach while studying behavioral adjustment among pre-primary schoolers in a Tanzanian context.

Ecological Model

Bronfenbrenner's ecological model (Bronfenbrenner & Morris, 1998) guides the understanding of the relationship of multiple-level characteristics with children's behavioral adjustment. According to the ecological model, child's development is shaped both by the child's individual characteristics and the context surrounding the child including the home and school (Bronfenbrenner & Morris, 1998). The present study uses ecological model to explain children's behavioral adjustment in pre-primary schools by examining classroom emotional support at classroom level and the teacher-child relationship at individual level. In the light of this model, the teacher-child relationship forms the proximal process. We propose that children's behavioral adjustment in Tanzanian pre-primary schools is a result of the interaction between the child's characteristics and his/her immediate environment, which is the classroom context.

Children's Behavioral Adjustment

Behavioral adjustment has been defined and operationalized differently according to the purpose of the study in question. Several studies define behavioral adjustment as minimizing risks and increasing protective factors (Bellin, Bentley, & Sawin, 2009; Mequald, Kopel, & Nassan, 2001). In the present study, behavioral adjustment is defined as the child's ability to cope with the new social environment presented by the school, involving such aspects as forming new relationships with teachers and other children, withstanding phobia, building confidence, avoiding inferiority, and observing and accepting school rules and regulations.

This definition reflects the Tanzanian pre-primary school context. Behavioral adjustment is an important aspect because moving from home may be stressful even if a person is moving to a more desirable location (Slater & Bremner, 2011). For example, the differences with the home situation lie in the types of relationship, such as life-long versus more short-term relationships, blood-related versus unrelated adults and peers, familiar versus unfamiliar peers, informal versus more formal and a few peers versus groups of peers. Tanzanian pre-primary schools provide a crucial setting for children in that the pre-primary school environment is new to them and they are required to adapt and develop their behaviors in various ways (Bruce, 2004; Garcia et al., 2008). Children therefore, are likely to develop their behaviors as approved by the respective society or not.

In this study, children's behavioral adjustment is studied in terms of prosocial behavior, anxiety, and aggression. Prosocial behavior refers to socially acceptable behaviors in the school context. In a Tanzanian context, a prosocial child is assumed to be obedient and to be able to cope successfully with the school environment. Anxiety has been used synonymously with internalizing problems in Western studies (Birch & Ladd, 1998; Buyse, Verschueren, Doumen, Damme, & Maes, 2008; Spilt, 2010). Fantuzzo et al. (2005) refers to anxious children as withdrawn. In this study an anxious child refers to a child who lives in isolation, worries and is always reticent. According to Western studies, anxiety limits a child's ability to succeed in the school environment in the early years (O'Connor, Dearing, & Collins, 2010). Aggression is viewed as a threatening behavior, which involves harming another person physically or psychologically. Many Western studies have been conducted that address aggression in young children aged 4-6 years and different terminologies have been used to denote an aggressive child. For example, Mantzicopoulos (2005) and Spilt (2010) used the term 'children with externalizing problems', while Fantuzzo et al. (2005) used the term 'children with oppositional behaviors'. In a Tanzanian context, an aggressive child refers to a child who displays unacceptable behaviors like fighting, beating, and kicking other children in the school/classroom. It also refers to a child who does not respect teachers' instructions, school rules and regulations. A child with such behaviors is assumed to face difficulties in getting along in the school context.

Teacher-Child Relationships

Studies have addressed children's behavioral adjustment in school resulting from teacher-child relationships (Baker, 2006; Birch & Ladd, 1997; Cadima et al., 2010; Kesner, 2000; Stuhlman & Pianta, 2001). For example, the findings of Kesner (2000) and Cadima et al.

(2010) indicate that children who have had a positive relationship with their teachers are found to be socially competent and to do better in school than those who have had a negative relationship. The findings further support the influence of the teacher-child relationship on the child's school adjustment in the early years (Baker, 2006; Birch & Ladd, 1997; Howes, Phillipsen, & Peisner-Freinberg, 2000).

Western studies on teacher-child relationship address the relationship in terms of what children perceive to benefit from their teachers and how teachers perceive their relationship in terms of positive or negative gains (O'Connor et al., 2010). The constructs closeness, dependency, and conflict have been used to describe the quality of the teacher-child relationships (Baker, 2006; Mantzicopoulos, 2005; Pianta & Stuhlman, 2004; Spilt, 2010). Closeness has been defined as warmth, healthy, openness or harmony in a social relationship, while conflict has been defined as a disharmonious and or discordant relationship characterized by negative interactions between a teacher and a child (Mantzicopoulos, 2005; Spilt, 2010). Dependency refers to child's clinginess to the teacher. In the present study, a teacher-child relationship has almost the same meaning as what was used in the previous studies, which refers to an interpersonal interaction between a teacher and an individual child in a pre-primary school context. In Tanzanian pre-primary schools, a child should be obedient to the teachers, should listen and abide to teachers' instructions. These behaviors are necessary in forming a harmonious relationship. If such behaviors lack, the relationship is disharmonious. There are no studies of this nature in the Tanzanian context.

Classroom Emotional Support

Emotional support refers to strategies used by teachers to promote a positive interaction between them and children in the classroom (Buyse et al., 2011). Several Western studies have examined the role of classroom emotional support in children's behavioral adjustment (Buyse et al., 2011; Dilalla & Mullineaux, 2008, Pianta & Stuhlman, 2004; Rimm-Kaufman et al., 2002). Hamre and Pianta (2001) found that teachers' emotional support was an important factor in helping children with social and externalizing behavior and other difficult behaviors that arise in the classroom.

The constructs commonly used to study classroom interaction between the teacher and children at classroom level are teacher sensitivity, positive climate, negative climate and regard for student's perspectives (Pianta, LaParo, & Hamre, 2008). Research shows that a sensitive teacher understands children's individual differences, regulates unacceptable behaviors and gives children support and comfort when needed (Pianta, Hamre, & Stuhlman,

2003; Pianta & Stuhlman, 2004). According to Rimm-Kaufman et al. (2002) higher teacher sensitivity is associated with fewer behavioral problems in children. Gazelle (2006) found that a positive climate positively influences children's behavioral adjustment, and that negative climate is detrimental to children's adjustment. A study on emotional support is new in the Tanzanian context; we are therefore, interested in knowing how teachers' classroom support relates to children's behavioral adjustment in Tanzanian classroom context. Emotional support is assumed to help children's adjustment in the school context (Buyse et al., 2011).

Teachers' Cultural Beliefs

Cultural beliefs have been found to have a direct or an indirect influence on children's behavioral adjustment. According to literature, in every culture, children are shaped by the physical and social settings within which they live (Rubin, 1998; Tudge, 2008). In line with the role of cultural beliefs in societies, Rosenthal (1999) contends that an appropriate practice in one cultural setting might be considered as less appropriate in another. Therefore, the cultural beliefs of teachers in Tanzania with regard to child rearing may differ from those found in other countries.

In the present study, cultural beliefs were selected that are supposed to be closely connected with child-rearing and children's behavioral adjustment in Tanzanian pre-primary school. These constructs are obedience, cooperation, authoritativeness and play. As pointed out by Weisz, Sigma, Weiss, and Mosk (1993), obedience is encouraged among African children. In the African context, Tanzania in particular, an obedient child is regarded as one with desirable behaviors and parents put emphasis on bringing up obedient children (Nsamenang, 1992). Authoritativeness involves a high demanding and high responsive rearing style, and an adult person exercises a firm control in combination with a close relationship over the child so as to influence behavioral compliance (Baumrind, 1983). However, authoritativeness in a Tanzanian context seems somewhat closer to authoritarian than in Western literature is the case because of the strong stress on obedience. Cooperation in child-rearing has been identified as a core aspect in the Tanzanian context which should involve community members. As suggested by Rosenthal (1999), child rearing should involve both, the family and the community at large. In our study, the focus is on cooperation between teachers and parents. Furthermore, play was considered to be an important aspect in this study. Rogers (2011) comments that play between the ages of 3-5 years lays the foundation for crucial life skills like empathy, problem-solving, tolerance, kindness, creativity and innovation, and is a source of friendship and socialization. In the Tanzanian context, these life

skills are important for children's behavioral adjustment in schools. However, such studies in the Tanzanian context are lacking. We first highlight the Tanzanian context.

An Overview of the History and Current Context of Pre-primary Education in Tanzania

Tanzania is located in the eastern part of Africa. Its population according to the National Bureau of Statistics (NBS, 2012) is about 45 million. About a decade ago children in Tanzania entered governmental grade one without pre-school preparation. In 1995, Tanzania established an educational system (pre-primary education) to prepare young children below the age of seven. According to the Education and Training Policy (ETP, 1995) every child, aged 5-6 years in the country has to attend pre-primary school before entering primary school. In addition, all primary schools were required to have a pre-primary class on their premises. In 1995, pre-primary education became part of the formal education system (i.e., 2; 7; 4; 2; 3+) denoting 2 years for pre-primary, 7 years for primary, 4 years for ordinary secondary, 2 years for advanced secondary, and 3 or more years for higher education (Mtahabwa & Rao, 2010; Tanzania Institute of Education (TIE), 2009). Pre-primary education was established to prepare children academically and socially in such a way that they can succeed in Grade 1. It is now conditional that every child should attend pre-primary school for two years in order to be promoted to primary school.

In Tanzania, early childhood education is denoted by different terms. Terms such as preschool education, early childhood education, and pre-primary education are sometimes used interchangeably (Mtahabwa & Rao, 2010). Nevertheless, pre-primary education is the official term for ECE in Tanzania. The term has been adapted in this study to refer to the educational services rendered to young children to prepare them for primary school. Contrary to ETP, in many pre-primary schools, children start at the age of four years (Mtahabwa & Rao, 2010). The government is responsible for the education of the teachers (TIE, 2009). However, both, government and private teachers' training centers offer teachers' certificate courses in early childhood education.

Pre-primary teachers in public schools are recruited in two ways. First, primary school teachers who have long experience and interest in teaching grade one and two are appointed to teach pre-primary schools. These teachers attend short courses on early childhood education in governmental teachers' colleges. Plan International, a non-governmental organization, has also been organizing trainings on early childhood education for these teachers. These teachers are paid by the government. Second, untrained individuals in the community are recruited. These teachers have a background of ordinary secondary educational level and they are not

considered as official employee teachers (civil servants). Their payment comes from the money collected from monthly contributions of parents' pre-primary school children. In contrast to the public pre-primary schools, in private pre-primary schools, teachers have attended courses in early childhood like Montessori (a two year course) and some are university graduates in early childhood education and psychology. These teachers are usually paid by the employer.

In Tanzania, many public primary schools have one teacher and one pre-primary classroom, both Year 1 and Year 2 children are mixed in one classroom. In contrast, in private schools, Year 1 and Year 2 children are placed in different classrooms and are taught separately. The number of children per class in our study ranges from 18 to 88, giving a teacher/child ratio of minimum 1:18 and maximum of 1:88. Teacher/child ratio is consistent with a study by Mtahabwa and Rao (2010) in public pre-primary schools, who found that a teacher/child ratio in urban regions ranged from 1:48 to 1:50 and from 1:82 to 1:98 in rural areas. In about 85% of the schools in our sample, the children faced the teacher at all times, when seated. With regard to play, all (100%) pre-primary schools have outdoor play. The commonly observed playing materials were sandpits (100%), which were present in all schools because the materials are locally obtained. Others were swinging (25%), tower climbing (30%), sliding (10%) and balancing (25%). There is no special examination for children to be promoted to primary school. However, a child who has knowledge of literacy is promoted to Grade 1 in primary school.

The Present Study

The present study uses a multilevel approach to investigate the relationships among teacher-child relationships, classroom emotional support, teachers' cultural beliefs and children's behavioral adjustment. The main research question is: How are the teacher-child relationship, teachers' cultural beliefs, and classroom emotional support related to children's behavioral adjustment? Different aspects of these overarching constructs are investigated, and this study also aims to investigate the relationship between these aspects. In addition, interactions between variables at individual level and classroom level are expected. Positive and strong relationships are expected between closeness in the teacher-child relationship and children's prosocial behavior, and between conflict in the teacher-child relationship and children's anxiety and aggression (see Figure 1, relationship a). These expectations are in line with findings from Western countries (Baker, 2006; Birch & Ladd, 1997; Cadima et al., 2010; Ladd, Birch, & Buhs, 1999; Murray & Greenberg, 2000). According to these studies, a

positive teacher-child relationship contributes to a child's positive school adjustment in the early years. Emotional support including a high level of teacher sensitivity, a positive climate, and regard for pupils' perspectives, are assumed to correlate positively with pro-social behavior, whereas a high negative climate is assumed to correlate positively with anxiety and aggression (Figure 1, relationship d). Teacher-child ratio and type of schools (public vs. private) are expected to moderate the relationship between teacher-child relationship and children's behavioral adjustment (Figure 1, relationship b). In summary, the main aim of this paper is to examine the relationship between multiple levels (individual and classroom) and children's behavioral adjustment. Figure 1 represents the nature of the expected relationships between variables.

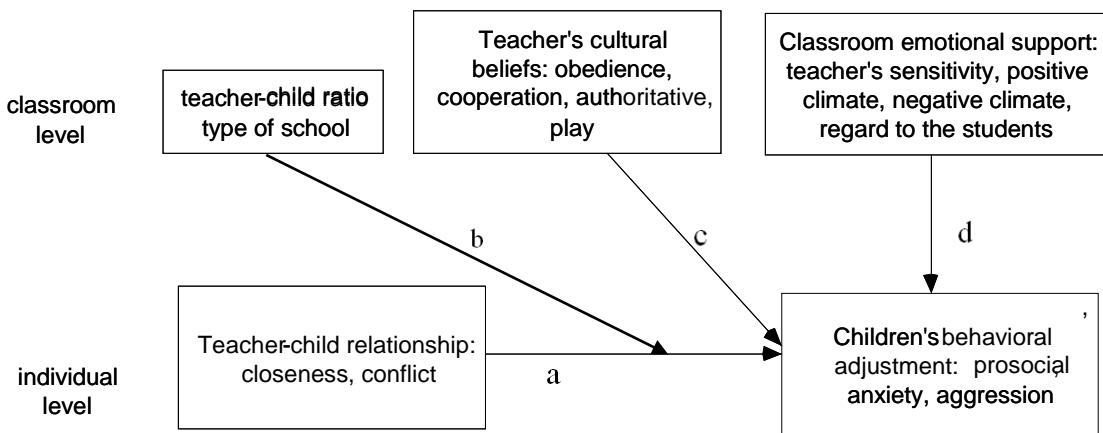


Figure 1: Expected relationships between variables at the individual and classroom level (see text).

We expected the following: (1) The relationship between the teacher-child relationship and children's behavioral adjustment is moderated by teacher-child ratio and by type of school i.e., whether the school is public or private (see Figure 1, relationship a & b);
(2) Teachers' cultural beliefs are related to children's behavioral adjustment (Figure 1, relationship c);
(3) Classroom emotional support is related to children's behavioral adjustment (Figure 1, relationship d).

Method

Participants

The study was done in Ilala municipality, Dar es Salaam region, Tanzania. Dar es Salaam has three municipalities (Ilala, Kinondoni and Temeke). Ilala was randomly selected; all municipalities had an equal chance to be included in the study. Block sampling was established as well as including both, public and private schools. Random sampling was done separately for public schools and private schools so as to have equal number of public and private schools. A sample of 20 pre-primary schools - 10 public and 10 private - were selected from Ilala municipality. One teacher and 16 children from each school participated in the study. Sixteen children were selected from each school; eight females and eight males were selected randomly from year one pupils. The study, therefore, involved a sample of 20 teachers and 320 children.

In Tanzania, each primary, public school has only one pre-primary class therefore there was no selection of classes within schools. Private primary schools have two pre-primary classes; Year 1 and Year 2: Year 1 participated in the study. Because there was only one pre-primary class in public schools and we chose to involve year one in private schools, we opted for a two-level multilevel analysis: child (individual) and class (which in this case is equal to school).

The majority of the teachers were female (95%). Teachers' ages ranged between 20 and 60 years ($M = 32.90$, $SD = 8.78$). The gender distribution among the children was even: 50% male and 50% female. The ages of the children ranged from 4 to 6 years ($M = 4.75$, $SD = .63$). With regard to the teachers' educational level, the majority (70%) had had a secondary education, 15% only primary education and 15% a university education.

In Tanzania, public pre-primary classes have one teacher (who is a coordinator) and one assistant, whereas, in some private schools there is a coordinator and more than one assistant teacher. A coordinator coordinates all activities related to the pre-primary unit. In this study, the coordinator teacher was involved as a main reporter of children's behavioral adjustment and his/her relationship with children because of her/his special roles with regard to children. In addition, the coordinator is more familiar with children's behavior. To reduce bias from using a single teacher report, an assistant teacher from the same school/classroom was used as an independent reporter. This reporter was selected on the basis of the criterion that s/he was working in the school from the time the children started school. This reporter was also familiar with the children's behavior.

Procedure

Permission to conduct research was granted by the Regional Administrative Secretary (RAS) and the teachers willingly agreed to participate in the study via verbal consent. The study instruments-Student-Teacher Relationship Scale (STRS) and Prosocial scale of the Preschool Behavior Questionnaire (PPBQ) were cross-culturally adapted and Classroom Assessment Scoring System (CLASS) was adopted.

Cross-cultural Adaptation of the STRS and PPBQ Measures

This study aimed to collect data on teacher-child relationship and children's behavioral adjustment, which have not been previously studied in Tanzania. Consequently, there were no instruments available to fit in a Tanzanian cultural context. Because of the lack of instruments suitable for the Tanzanian context, available measures were adapted. Several procedures were carried out to make sure these instruments fit the Tanzania cultural context. Questionnaires (STRS and PPBQ) were translated from English into Swahili language. The translator was fluent in Swahili and had an excellent understanding of English language. Thereafter, two university colleagues, from the department of psychology, both fluent in English and Swahili, translated the items back to English to check if items were correctly translated and were culturally relevant in a Tanzanian context. Afterward, the researcher and university colleagues discussed the instruments. It was suggested that "dependency", a construct of teacher-child relationship should be removed because it did not suit the Tanzanian culture. In Tanzanian pre-primary school children are seated in the classroom and it is unusual for a child to cling to the teacher. Some items were rephrased and adapted in the study. For example, "when the child is tempered I know it will be a long, difficult day" was rephrased as "when the child is angry s/he cannot attend the classroom the whole day".

Both questionnaires were introduced into the pilot study to test their reliability and validity. They were tried out in 10 pre-primary schools, 5 of which were publicly owned and 5 of which were privately owned. One teacher of each school completed 6 questionnaires for 6 children on teacher-child relationships and children's behavioral adjustment. Therefore, 60 children were involved in the pilot study. During the pilot phase, the participants were asked to comment on words and sentences that were difficult to understand. All 10 respondents filled out and returned all of the questionnaires. Afterward, a discussion panel was held between the first author and teachers who filled the questionnaires. The respondents reported that items were easy to understand.

Most of the respondents in the main study were Swahili native speakers. The questionnaires therefore were prepared in both language versions (Swahili and English), and the participants were free to choose either of these versions. Thereafter, teachers were given sufficient copies of the questionnaires corresponding to the number of children they were reporting on.

Instruments

Children's Demographic Characteristics

A multiple-choice questionnaire was used to establish children's demographic characteristics such as gender, age, language used in school and at home, and socio-economic status (SES). We administered the child questionnaire in every selected school. Completion of this questionnaire involved us asking questions to each child orally and writing down the responses given by the child. We filled out the child questionnaire because children were too young to do it themselves.

Besides asking simple and straightforward questions we used one or a combination of the following strategies to receive the information needed (i.e., on SES) when administering the child questionnaire. First strategy: we asked a child questions about different features that characterized a particular item. For example, "Do you have a toilet or pit latrine in your home?" We asked whether it was inside or outside the house, whether a tap water and a sink were present. Questions about different features also included who used the particular item. Second strategy: We asked follow-up questions to check whether the child's responses (answers) in the follow-up talk matched or supported his/her initial responses. For more clarification, another follow-up question was: "Do you share the toilet/latrine with neighbors?" So, follow-up questions were used to elicit a response from the child that could help to ascertain the initial child's response ('yes' or no') when the initial question was asked. Third strategy: In some cases when talking to the child, we summarized or paraphrased the information that the child had given in order to check if the child can report the same thing by agreeing or disagreeing. Fourth strategy: we asked a child back and forward, that is asking the children the same question at different moments during the conversation.

Teacher Questionnaires

The teacher questionnaire contained four sections: demographic characteristics, teachers' cultural beliefs, teacher-child relationship, and children's behavioral adjustment. Teachers'

demographic characteristics comprised items such as gender, age, educational background, training, and teaching experience.

Teachers' cultural beliefs is a new measure developed for this study because there was no measure available with the focus on child rearing constructs that fitted the Tanzanian cultural context. The following procedures were carried out to develop the measure. First, a literature review was executed in relation to cultural beliefs and child rearing. From the literature, we designed a semi structured interview. Afterwards, we conducted a 2 hour interview among 10 pre-primary schools teachers in Ilala, Dar es Salaam region. For example, teachers were interviewed about what they view as important aspects in helping children to adjust properly upon starting pre-primary school. Their responses were written down. Based on the responses of the teachers, 40 items were created. The items were sorted and grouped by the first author and reduced to 16 items. Agreement was reached among the author and participants who participated in the initial stage of instrument development. The items formed a questionnaire, which was piloted to 10 teachers, 5 from public and 5 from private schools. Teachers were asked to report difficult items. All questionnaires were returned and were discussed between a researcher and the teachers who filled out the questionnaire.

The 16 items were subjected to principal component analysis (PCA) using IBM SPSS 20. Four components with eigenvalues exceeding 1, explaining 19.55%, 18.05%, 12.84% and 9.65% of variance were revealed. The four components explained a total of 60.11% variance. Varimax rotation was performed with all items loading on one of the four factors. Component 1 cooperation, contained 4 items ($\alpha = .75$). Component 2, obedience, contained 5 items ($\alpha = .78$), Component 3, authoritativeness, contained 3 items ($\alpha = .72$) and component 4, play, consisted of 4 items ($\alpha = .65$).

Beliefs about cooperation included items about childrearing as a shared responsibility: for example, "If the child misbehaves, I have to tell his/her parents". Beliefs about obedience contained items about how a child should behave and should be treated when he/she misbehaves: for example, "A child should listen and not interrupt while in the classroom". Beliefs about authoritativeness comprised items about the responsibility of the teacher to the child. Examples of items are: "Children should respect teachers' instructions", "Children need to sit quietly on the chair to listen from the teacher". Beliefs about play were measured using items about the attitude of teachers towards play in pre-primary schools. Examples of items are: "Pre-primary school children should have more play objects than books", "Children should have more playing hours at school". Teachers were asked to put a tick next to the

response that best represented their opinion of the item on a 5-point Likert scale, which ranged from “strongly disagree” to “strongly agree”.

The STRS, is a measure designed to assess teachers’ perceptions of their relationships with individual children (Pianta, 1994). The measure comprises of three constructs: closeness, conflict and dependency (Pianta, 2001). Coefficient Alpha for closeness was .83 (3 items) .93 for conflict (12 items) and .53 for dependency (2 items) (Pianta, 1994). In this study we adapted two subscales: closeness and conflict. The closeness subscale asked for information about a harmonious relationship between a teacher and a child. Examples of items are: “The child talks to me freely about his/her feelings and experiences”, “Working with this child gives me self-confidence”. The conflict subscale assessed information on the extent to which the teacher-child relationship was characterized by disharmonious interactions and misunderstandings (Spilt, 2010). Examples of items are: “The child and I seem to be in conflict all the time”, “Working with this child costs me a lot of energy”. All items were rated on a 5-point Likert scale ranging from “never” to “always”.

Behavioral adjustment comprised of items that sought information on a child’s behavioral adjustment in the school context. The items were adapted from the Prosocial Scale of the Preschool Behaviors Questionnaire (PPBQ, Behar & Stringfield, 1974; Tremblay, Vitaro, & Gagnon, 1992) to fit the Tanzanian cultural context. The adapted questionnaire comprised of three constructs: prosocial behavior, aggression and anxiety. Prosocial behaviors included items about a child’s behavior that are socially acceptable, or that could help him/her live with minimum problems in the school environment. Examples of items are: “The child likes sharing”, “The child is always happy”. Aggression included items that seemed to limit the children to properly adjust in the school context. Examples of items are: “The child fights with other children”, “The child hits and kicks other children”. Anxiety refers to behavior that is assumed to impede children’s adjustment in the school context. Examples of items are: “The child is always unhappy”, “The child lives in isolation”. A 3-point Likert scale that included the options of “always applies”, “sometimes applies” and “does not apply” were used to rate a child. For number of items, reliability, means, standard deviation see Table 1 and for Pearson correlations between the subscales see Table 2.

Observation Schedule

Classroom observations were carried out to measure classroom background characteristics and emotional support during the interaction between a teacher and children in

the classroom. The observation schedule used to measure emotional support in this study was CLASS Pre-K (Pianta et al., 2008).

Emotional support during teacher-child interaction in the classroom consisted of four dimensions: positive climate, negative climate, teacher sensitivity and regard for children's perspectives. Rating scales for all dimensions ranged from 1 to 7; 1 & 2 indicating low emotional support, 3, 4 & 5 indicating a medium emotional support and 6 & 7 indicating a high degree of emotional support. Behavioral indicators outlined in CLASS Pre-K manual (Pianta, et al., 2008) were adopted in this study. Behavioral indicators for positive climate were teacher smiling, shared laughter, eye contact, and warm voice. Negative climate included negative affects like punitive control and severe negativity of teachers towards their pupils. Behavioral indicators for negative climate were such as unfriendly behaviors like teachers' anger and beating the children. Teacher's sensitivity contained indicators such as teacher awareness, responsiveness to children, and the extent to which a teacher provides comfort and encouragement. Regard for children's perspectives also captured information regarding the degree to which teachers' interactions with children and classroom activities placed emphasis on children's responsibilities and interests.

Table 1

Number of items, Cronbach's α , means, standard deviation for measures

Measures	No.of items	α	M	SD
<i>Teacher's cultural beliefs</i>				
1.Cooperation	4	.85	4.23	.79
2.Obedience	5	.66	2.85	.84
3.Authoritative	3	.51	3.97	.79
4.Play	4	.72	1.76	.73
<i>Teacher-child relationship</i>				
1.Closeness	6	.74	3.88	.74
2.Conflict	5	.63	1.85	.65
<i>Children's behavioral adjustment</i>				
1.Prosocial behavior	11	.80	1.44	.36
2.Anxiety	5	.67	0.67	.42
3.Aggressive	9	.72	0.61	.38

After her CLASS training, the researcher (first author) passed a reliability test within one point of master coders on 81.3% of all codes. This reliability was obtained after scoring four videos. Because there are no CLASS trainers in Tanzania, and CLASS is a relatively new

measure, the above mentioned researcher, being a qualified user of CLASS, trained a research assistant with the goal to check inter-observer reliability. She explained to her the use of CLASS theoretically guided by CLASS Pre-K manual, and thereafter, observed two classes and scored the classroom quality two times,. They held a together discussion to help a research assistant gain more knowledge about the use of CLASS. Thereafter, the research assistant was involved in classroom observation. Both the main researcher and research assistant observed 20% of all classrooms; for inter-observer reliability. The observation involved four sessions in each classroom, with a total of 2 hours per session. The main researcher conducted observations in all 20 classrooms.

The inter-observer intra-class correlation coefficients for teacher sensitivity, positive climate, negative climate and respect for students' perspective were .91, .89, .91, and .87 respectively. These results are consistent with other studies that used the CLASS and reported their inter-observer reliability using ICCs (Pakarinen et al., 2010). These researchers reported intra-class coefficients of .88, .92, .96, and .91 for teacher sensitivity, positive climate, negative climate and regards for children's' perspective respectively. According to Cicchetti et al. (2006), intra-class correlations from .40 to .59 indicate fair agreement; from .60 to .74 indicate good agreement and .75 to 1.00 indicate excellent agreement. Inter-observer agreement in this study therefore, was excellent.

Table 2

Bivariate correlation between subscales

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Cooperation (TCB)		.17**	-.28**	-.13*	NS	-.23**	NS	NS	NS	.13*	.16**	NS	.22**
2.Obedience (TCB)			.54**	NS	NS	.20**	NS	NS	NS	NS	NS	-.17**	-.20**
3.Authoritative (TCB)				NS	NS	NS	NS	NS	NS	-.21**	-.15*	.19**	-.25**
4.Play (TCB)					-.13*	-.22**	NS	-.17**	-.15**	NS	.20**	NS	-.33**
5.Closeness (TCR)						-.39**	.38**	-.41**	-.32**	-.25**	-.13**	NS	.28**
6.Conflict (TCR)							-.55**	.38**	.61**	NS	-.12*	NS	NS
7.Prosocial (CBA)								-.37**	-.56**	-.17**	NS	NS	.16**
8.Anxiety (CBA)									.23**	.11*	NS	NS	NS
9.Aggressive (CBA)										NS	-.56**	.16**	-.12*
10.Positive climate (CES)											.87**	-.82**	NS
11.Teacher sensitivity (CES)												-.78**	.17**
12.Negative climate (CES)													-.32**
13. Respect of students (CES)													

Note. NS means non-significant, TCB refers to teachers' cultural beliefs measure, TCR refers to teacher-child relationship measure, CBA refers to children's behavioral adjustment, CES refers to classroom emotional support

,* $p<.05$; ** $p<.01$,

Plan of Analysis

The variables used in this study were measured on two levels: the individual and the classroom level. Children were nested within classes. Children's behavioral adjustment was predicted as a function of child- and classroom-level characteristics and their cross-level interactions. Data were analyzed by multilevel regression analysis using IBM SPSS 20, which is recommended for analyzing data from different levels using a single data file (Heck, Thomas, & Tabata, 2010; Hox, 2002, 2010).

Predictor variables from Level 1, such as closeness, conflict, gender, and SES were aggregated to the classroom level. These variables were also centered around the grand mean to combat multicollinearity (Hox, 2002).

The multilevel regression analysis was carried out stepwise. First, in the first step a model without explanatory variables, the null model, was tested to obtain the mean achievement scores for all schools using ICCs and intercepts (Heck et al., 2010). In the Tables 3, 4 and 5 the null model is indicated as Model 1. The null model stage is important in multilevel analysis because it allows the researcher to decide whether it is useful to carry out a multilevel analysis or not using a cut-off point of 0.05 of the ICC (Heck et al., 2010).

In the second step (Model 2), each dependent variable (the expected outcome), from the child level was entered separately with each explanatory variable (closeness or conflict) from Level 1. Closeness and conflict were entered separately because each was assumed to have a unique relationship to each dependent variable. Model 2 was used to address the first hypothesis, i.e. the relationship between teacher-child relationship and children's behavioral adjustment see Figure 1, relationship a. Both closeness and conflict were related to all outcome variables and warranted continuation with Model 3. In Model 3 all predictor variables from Level 2 and Level 1 were entered simultaneously. Closeness or conflict was retained as a control variable. Only variables that were significant to prosocial behavior, anxiety, and/or aggression in Model 3 were introduced in the cross-level interaction where independent variables from Level 2 and covariates were nested. Characteristics from the classroom level (teacher/child ratio and type of school) that showed an interaction effect with a covariate variable from Level 1 were regarded as moderator variables. That is to say, only the interaction of variables from different levels was treated as a moderator variable, but not interaction of variables from the same level (Hox, 2002). For example, in the interaction between closeness and gender, gender could not function as a moderator variable because it is measured at the same level as closeness. Parameters of two-level multilevel regression models

for children's behavioral adjustment are presented in three tables based on the outcome variables (prosocial behavior, anxiety, and aggression, respectively).

Results

Results of the hierarchical multilevel regression model for children's behavioral adjustment variables are summarized and presented in Tables 3, 4 and 5. The preliminary analysis (Model 1) warranted conducting a multilevel analysis because of sufficient ICC and significant Wald Z (Heck et al., 2010).

Teacher-child relationship and children's behavioral adjustment (see Figure 1, relationship a)

In Model 2, the relationship between teacher-child relationship and children's behavioral adjustment was explored. Two variables on teacher-child relationship (closeness and conflict) were introduced separately to each dependent variable in the model, and both significantly related to all types of children's behavioral adjustment (see Tables 3, 4, & 5).

Table 3

Multilevel analysis: Dependent variable is prosocial behavior

Predictors	Models			
	Model 1	Model 2	Model 3	Cross-level interaction
Fixed part	Coefficients	Coefficients	Coefficients	Coefficients
ICC	.31			
Wald Z	2.66**			
Reliability	within groups	.87		
Intercept-1	1.44**	1.43**	1.77(.18)**	1.75(.18)**
Closeness		.16(.03)**	.15(.03) **	.14(.04)**
School owner-1			-.20(.07)*	-.20(.07)**
Teacher sensitivity-1			.14(.06)*	.14(.06)*
Positive climate-1			-.19(.06)*	-.19(.07)**
Intercept-2	1.44**	1.44(.03)**	1.44(.03)**	
Conflict		-.30(.03)**	-.30(.03)**	
Random part				
Within group-1	.09	.08	.08	
Between group-1	.04	.03	.03	
Within group-2	.09	.07	.07	
Between group-2	.02	.02	.02	
R ²				
R ² (Within classes)-1		11%		
R ² (Between classes)-1		25%		
R ² (Within classes)-2		22%		
R ² (Between classes)-2		50%		

*Note, *p<.05; **p< .01**Intercept-1= when closeness was introduced in the model**Intercept-2 = when conflict was introduced in the model**Parentheses indicate the standard error**-1 relationship related with closeness**-2 relationships related with conflict*

Table 4

Multilevel analysis: Dependent variable is anxiety

Predictors	Models			
Fixed part	Model 1	Model 2	Model 3	Cross-level interaction
	Coefficients	Coefficients	Coefficients	Coefficients
ICC	.33			
Wald Z	2.75**			
Reliability within groups	.88			
Intercept-1	.67(.05)**	.68	.41(.18)*	.38(.16)*
Closeness		-.24(.03)**	-.25(.03)**	-.34(.09)**
Gender-child-1			.08(.04)*	-.09(.03)**
Teacher/child ratio-1			5.40(1.81)*	6.19(1.59)**
Play-1			-.13(.05)*	-.12(.05)*
School owner-1			.29(.07)**	.29(.07)**
Closeness X school owner-1				.22(.06)**
Closeness X gender-1				.11(.05)*
Intercept-2	.67(.05)**	.67(.05) **	-4.37(1.02)**	-4.15(.86)**
Conflict		.14(.04) **	.11 (.04)**	.71(.17)**
Teacher/child ratio-2			6.13(1.71)**	5.73(1.6)**
School owner-2			.14 (.06)**	.12(.05)*
Teacher/child ratio-2			6.67(1.25)**	5.77(1.08)**
Mean-ses-mean-2			2.45(.61)**	2.37(.51)**
Mean-conflict-mean-2			.34(.07)**	.35(.06)**
Conflict X teacher/child -ratio-2				-.299(1.40)**
Conflict X mean-conflict-mean-2				-.20(.06)**
Random part				
Within group-1	.12	.10	.10	.09
Between grouo-1	.06	.04	.02	.01
Within group-2	.12	.10	.11	.11
Between group-2	.06	.04	.01	.00
R ²				
R ² (Within classes)-1		17%		
R ² (Between Classes)-1		33%		
R ² (Within classes)-2		17%		
R ² (between classes)-2		33%		

Note, * $p<.05$; ** $p< .01$, X = interaction effect, Intercept-1= when closeness was introduced in the model

Intercept-2 = when conflict was introduced in the model. Parentheses indicate the standard error

-1 relationship related with closeness, -2 relationships related with conflict

* indicates interaction effect between variables

Table 5

Multilevel analysis: Dependent variable is aggression

Predictors	Models			
	Model 1	Model 2	Model 3	Cross-level interaction
Fixed part	Coefficients	Coefficients	Coefficients	Coefficients
ICC	.29			
Wald Z	2.68**			
Reliability within groups	.87			
Intercept-1	.60(.04)**	.61(.04)**	.98(.16)**	.98 (.16)**
Closeness		.14(.03)**	.13(.03)**	.12 (.04)**
Gender-child-1			-.07(.03)**	-.07(.03)*
Teacher sensitivity-1			-.24(.07)*	-.24 (.07)*
Positive climate-1			.16(.06)*	.16 (.05)*
Intercept-2	.60(.04)**	.61(.03)**	.61(.18)**	.59(.18)**
Conflict		.35 (.03)**	.35(.03)**	.54 (.14)**
Teacher sensitivity-2			-.06(.02)**	-.06(03)**
Random part				
Within group-1	.10	.09	.09	.09
Between group-1	.04	.03	.02	.02
Within group-2	.10	.07	.07	.07
between group2	.04	.02	.01	.02
R ²				
R ² (Within classes)-1		10%		
R ² (Between Classes)-1		25%		
R ² (Within classes)-2		30%		
R ² (Between classes)-2		50%		

Note, * $p<.05$; ** $p<.01$

Intercept-1 = when closeness was introduced in the model

Intercept-2 = when conflict was introduced in the model

Parentheses indicate the standard error

-1 relationship related with closeness

-2 relationships related with conflict

* indicates interaction effect between variables

It was found that a higher quality of teacher-child closeness was significantly related to prosocial behavior adjustment (Table 3), and a lower quality of teacher-child closeness was significantly related to anxiety (Table 4). It was also found that a conflictual relationship was significantly related to anxiety and aggression (Table 4 and 5), and low conflict was significantly related to prosocial behavior (Table 3). Other variables on the child level such as gender and SES were introduced in Model 3. The gender of the child was significantly related to children's anxiety and aggression when closeness was controlled (Tables 4 and 5). A significant interaction was detected between teacher-child closeness and gender of the child (Table 4). The results showed that the relationship between anxiety and teacher-child closeness was stronger in females than in males (Table 4). SES was not related to children's behavioral adjustment, so the variable was not reported in the tables.

Characteristics of the classroom (Level 2), such as teacher/child ratio, type of school, educational level of the teacher and teaching experience, were introduced in Model 3. Teacher/child ratio was related to anxiety when both closeness and conflict were controlled (Table 4). School ownership (public or private) was related to prosocial behavior and anxiety when closeness was controlled (Tables 3 and 4). Furthermore, the interaction effect between teacher-child closeness and school ownership were related to anxiety (Table 4). The results showed that in private schools, relationships between teacher-child closeness and anxiety were much stronger than in public schools. Another interaction effect between teacher-child conflict and teacher-child ratio was related to children's anxiety (Table 4). Anxiety was found higher in classes with many children compared to classes with few children. In this respect therefore, school ownership and number of children were regarded as moderator variables (refer Figure 1, relationship b). Other variables were not significant and were not included in the table.

Variables measured at individual level (closeness, conflict and SES) were aggregated at classroom level as predictor variables. Only the aggregated conflict variable was related to anxiety (Table 4), indicating that in classes with a higher aggregated mean conflict the relationship between teacher-child conflict and child anxiety was much stronger compared to classes with a lower aggregated mean conflict.

Teacher's cultural beliefs and children's behavioral adjustment (see Figure 1, relationship c)

To explore the effect of the teacher's cultural beliefs on children's behavioral adjustment, we introduced four teacher's cultural belief variables (obedience, authoritative, cooperation and play) in Model 3 as predictor variables. Only play was negatively related to children's

anxiety when closeness was controlled (see Table 4). Other variables were not significant and were not reported in the table. In addition, no mediations were found in the research findings.

Classroom emotional support and children's behavioral adjustment (Figure 1, relationship d)

Four variables from Level 2 (teacher sensitivity, positive climate, negative climate, and regard for children's autonomy) were entered as predictors of children's behavioral adjustment while closeness and conflict were controlled separately. Teacher sensitivity and positive climate were related to children's behavioral adjustment. It was found that a higher quality of teacher sensitivity was related to prosocial behavior adjustment, and low quality of teacher sensitivity was related to children's aggression when both closeness and conflict were controlled respectively (Tables 3 and 5). It was also found that a less positive climate was positively related to prosocial behavior, and a more positive climate was positively related to aggression when closeness was controlled (Tables 3 and 5).

An independent reporter (assistant teacher) was established to report teacher-child relationship and children's behavioral adjustment. The same analyses were carried out to both reporters (main reporter and independent reporter) to prevent bias from using a single reporter. The analyses of both reporters have in general roughly the same relationship.

Discussion

This study examined the relationships among teacher-child relationship, teachers' cultural beliefs, classroom emotional support, and children's behavioral adjustment in preschool using a multilevel approach. Multilevel studies on children's behavioral adjustment in preschool are rare, as are studies on children's behavioral adjustment in Africa, particularly in Tanzania.

The following hypotheses were tested: (a) whether a high quality of teacher-child closeness is related to children's prosocial behavior as opposed to children's anxiety and aggression, and (b) whether conflict between a teacher and a child is related to children's anxiety and aggression as opposed to prosocial behavior (see Figure 1, relationship a). The results supported the hypotheses. A dyadic relationship characterized by closeness between a teacher and a child was related to children's prosocial adjustment. In contrast, the teacher-child relationship characterized by conflict and misunderstanding was related to the child's anxiety and aggression. If the relationship between a teacher and a child is characterized by conflict and misunderstanding, some children may opt for self-withdrawal and become reticent which is associated with anxiety. In contrast, other children may prefer to display overtly their

aggressive tendencies, hence adjusting aggressively. These findings are consistent with Western studies that linked the teacher-child relationship and children's behavioral adjustment in pre-schools (Barker, 2006; Birch & Ladd, 1997, 1998; Buyse et al., 2008; Kesner 2000; Silver et al., 2010; Stuhlman & Pianta, 2001). These studies suggest that a positive teacher-child relationship is positively related to prosocial behavioral adjustment and associated with low levels of aggression and anxiety among school children in the early years. A careful adaptation of teacher-child relationship and children's behavioral adjustment measures that fit the Tanzanian context, linguistically and culturally in such a way that teachers were able to interpret the items may have contributed to the consistency of findings with studies in Western countries. An alternative explanation for our findings could be because of ongoing globalization. Early education in Tanzania is influenced by Western ideas and the teachers are trained using a curriculum that was developed in Western countries. For example, Montessori colleges and Plan International offer training to the pre-primary school teachers that may reflect a Western curriculum.

Results revealed that teacher-child conflict was more strongly related to aggression ($r = .35$) compared to anxiety ($r = .11$) (see Tables 4 and 5). It might be possible that a child's aggression triggers conflict with the teacher, whereas anxiety goes less observed and triggers less conflict. In addition, a quiet child in a Tanzanian context is not associated with anxiety. Because in Tanzania children are required to remain quiet while in the classroom even a reticent child might be conceived as quiet. This can result into underreporting children with anxiety. Furthermore, because of the high teacher/child ratio in Tanzanian pre-primary classes, it might be difficult to identify children with anxiety because they tend to hide compared to aggressive children (O'Connor et al., 2010). Nevertheless, both anxiety and aggression continue to be a problem, because if a child experiences a conflictual relationship with the teacher, he or she will consequently face difficulties in adjusting to schools' environment. In Tanzania, this can lead to child drop-out from school and / or the child hating school.

The gender of the child was significantly related to anxiety. It was found that the relationship between teacher-child closeness and anxiety was much stronger in girls than in boys, suggesting that girls adjust through anxiety more compared to boys (see Table 4). Results are consistent with Western studies showing girls to be more inhibited than boys (Spilt, 2010). Despite the results being consistent with the Western studies, interpretation of anxiety was based on a Tanzanian cultural context which is different from the Western interpretation. Referring to the Tanzanian context this might be attributed to a more strict

childrearing style in school for girls than for boys. Because of a more strict childrearing one would expect girls to experience anxiety more often than boys.

We tested whether school ownership and teacher/child ratio moderated the relationship between teacher-child relationship and children's behavioral adjustment (see Figure 1, relationship b). The results partly supported the hypothesis. We found that the relationship between anxiety and teacher-child closeness was much stronger in private than in public schools. The findings suggest that in Tanzanian private schools teacher-child closeness plays a more significant role than in public schools. On one hand, this is likely to be the case because classes in private schools have fewer children than in those in public schools. With relatively few children teacher-child closeness becomes possible and more meaningful, and when such closeness is lacking, behavioral problems such as anxiety are likely to occur. On the other hand, in classes with many children the problem might be significant, but it may not be reported by teachers because they do not see the importance of closeness. In addition, in a congested classroom it is more difficult to identify children with anxiety than in classes with few children because children with anxiety tend to hide.

We tested whether teachers' cultural beliefs were related to children's behavioral adjustment (Figure 1, relationship c). Only beliefs about play related significantly to anxiety (Table 4). There is a possibility that teacher bias in reporting beliefs regarding childrearing resulted either in underreporting or misreporting information, hence the non-significant results. In addition, in Tanzania, urbanization has resulted in life-style changes that might have affected the way people perceive obedience, parental authoritativeness and cooperation, again leading to non-significant results. For the case of authoritativeness, teachers seem to practice both an authoritative and authoritarian rearing style, which might also have attributed to non-significant results: A strong significant correlation between authoritativeness and obedience ($r = .54$) confirms this. The significant result on play reflected a cultural aspect. The findings can be supported by information from the introduction that indicates that teachers do not encourage children's play in the classroom. They consider play as a free-time activity that might be encouraged during certain periods outside the classroom. Pre-primary school teachers are aware of the importance of the developmental goals of play, such as socialization, tolerance, making friendship, source of cooperation and kindness. However, these teachers do not believe that these characteristics should be stimulated in classrooms. This belief therefore, is likely to increase children's reticence, worry, and fear while in the classroom, which might impair children's behavioral adjustment. However, play in a classroom with more than thirty children would be difficult for teachers to manage. Despite limited studies on the relationship

between play and anxiety, these findings reflect the general attitudes and beliefs of most Tanzanian pre-primary school teachers regarding play, which may have an impact on children's anxiety. These findings are consistent with those of other studies in Tanzania such as that of Mtahabwa (2007) and Mende (1999), which report teachers' negative attitude toward play.

We tested whether classroom emotional support variables were related to children's behavioral adjustment at classroom level (Figure 1, relationship d). The aim was to explore the effect of the interaction of teachers and children in the classroom through classroom observation as a group as opposed to dyadic teacher-child relationship through teachers' reports. Two variables (teacher sensitivity and positive climate) were significantly related to prosocial behavior and a low quality of teacher sensitivity was positively related to aggression. These findings support the hypothesis that high teacher sensitivity at classroom level is an important factor in children's prosocial adjustment in the early years, even when the relationship quality is controlled at the individual level. It is therefore important to note that a sensitive teacher is helpful in regulating children's behaviors and can help them to positively adapt to the school environment. These findings are consistent with those of Pianta and Stuhlman (2004). It was also found that a low quality of teacher sensitivity was associated with children's aggression when closeness and conflict were controlled. These findings indicate that in addition to teacher-child conflict in explaining children's aggression, teacher insensitivity is a potential factor at the classroom level.

We also found that a positive climate was positively significantly related to aggression and negatively significantly related to prosocial mode of adjustment. These findings do not support our hypothesis. The unexpected results might be attributed by the instrument used in data collection, more specifically; the positive climate measure might not suit the Tanzanian cultural context. For example, in Tanzanian classes where teacher/child ratio is high, it might be difficult for a teacher to give attention to each child as required by the CLASS measure. In addition, the unexpected results could mean that a less positive climate is interpreted as a context with strict rules which leads to more prosocial behavior. Furthermore, in a Tanzanian context, every child is required to be quiet and attentive to the teacher while in the classroom, whereas in the Western culture, a teacher should attend every child. However, more research is needed to determine whether and how CLASS needs to be adapted to the Tanzanian cultural context. Maybe domains like positive climate need to be operationalized in a more cultural sensitive way.

Most of the results of the main effect were replicated when we used the behavioral ratings of the independent reporter. The results of both analyses pointed in the same direction. The results of an independent reporter confirmed the results of the main reporter. This confirmation reduces the degree of bias of single teacher reporting of both teacher-child relationship and children's behavioral adjustment. The implication is that the relationship discussed in this study does not depend upon using teacher-child relationship ratings and children's behavioral adjustment ratings from the same person. Western studies used information reported by a single teacher, which was reported as a methodological limitation (Buyse et al., 2008; Buyse et al., 2011). Generally speaking, the findings confirm the important role played by individual characteristics and the context (i.e., school in this study) that surrounds the child in shaping the child's behavior (Bronfenbrenner & Morris, 1998).

Strengths, Limitations, and Future Direction

This is the first study to address children's behavioral adjustment among the pre-primary schoolers in African context, Tanzania in particular. In addition, the study has two methodological advantages. First, we used a multilevel analysis (individual and classroom level) which was able to produce a more credible analysis as opposed to single-level analysis as used in most Western studies. Second, we were able to get the participation of two teachers (main reporter and independent reporter) to rate their relationship with the children and children's behavioral adjustment. This approach has reduced the methodological limitations which have been consistently reported in previous studies. This study therefore, has an added methodological improvement with regard to the literature on teacher-child relationship and children's behavioral adjustment.

This study has also several limitations. First, we did not observe the whole model in the microsystem, the fact that home and school are nested in the community and are both important in shaping the child's behavior. Second, we did not include children's characteristics, like temperament, that have shown to be important for behavioral adjustment in Western countries (Mobley & Pullis, 1991); further research in this area should consider this. Third, the internal consistency of authoritativeness/authoritarian (.51) was poor to marginal, presumably because of the low number of items (three). This may have affected the relationship that was expected between teachers' cultural beliefs and children's behavioral adjustment. Fourth, some of the variables revealed unexpected results. This presumably indicates that the CLASS measure was purposely designed for Western classes which have a small teacher/child ratio and children who need attention from the teacher. Therefore, more

research is needed to determine how CLASS should be adapted in other cultural contexts outside Western countries. Fifth, the data in this paper were cross-sectional; consequently we were unable to assess the direction of the relationship. For future research, longitudinal data are needed to chart the progress of children's behavioral adjustment in relation to teacher-child relationship and classroom emotional support.

Implications of the Results for Policy and Practice in Tanzania

There is much more to learn from the findings generated in this study concerning the role of teacher-child relationship and classroom emotional support on children's behavioral adjustment in the Tanzanian context. The recommendations are as follows:

In terms of policy in Tanzania, the government should plan strategies for recruiting trained teachers and add extra classrooms to reduce the teacher/child ratio in schools. This will help teachers to have a manageable number of children to attend. For practice, teachers should reconsider their relationship with children as important in helping children to adjust their behavior successfully to school norms.

Conclusion

This study has shown that research with a multilevel approach is needed to improve our understanding of children's behavioral adjustment in pre-primary school. Both children's characteristics, school contextual characteristics, and their interaction play a role in shaping the child's behavior.

Chapter 4

Change and Predictability of Children's Behavioral Adjustment in Tanzanian Pre-primary Schools

Manuscript submitted

Abstract

This study examines the change and predictability of children's behavioral adjustment in Tanzanian pre-primary school. The data were collected twice over a one-year interval: in Year 1 20 teachers and 320 children from 20 schools participated in the study, while in Year 2 the same 20 teachers and 310 children participated. Results showed that children's aggressive behavior and teacher-child conflict decreased in Year 2, whereas teacher-child closeness increased. Prosocial and anxious behaviors remained stable. Multilevel and longitudinal analyses indicated that Year 1 teacher-child closeness and conflict predicted Year 2 aggressive behavior. Year 1 prosocial and anxious behaviors predicted Year 2 teacher-child closeness while Year 1 prosocial, aggressive, and anxious behaviors at the individual level and Year 1 anxious behavior at the aggregated class level predicted Year 2 teacher-child conflict. Findings have implications for future research and training for pre-primary teachers in Tanzania.

Introduction

For some children adjustment to preschool is a temporary issue of learning rules and routines in a new context, whereas for other children it marks the start of a problematic trajectory. Differences in behavioral adjustment at preschool entry may be due to temperamental differences, attachment or parenting styles and/or a combination of these factors (Bates, Pettit, Dodge, & Ridge, 1998; Campbell, Shaw, & Gilliom, 2000). In addition, according to Perry and Weinstein (1998), school and teacher characteristics influence children's behavioral adjustment during their school career.

In preschool, children who tend to react aggressively and/or anxiously may easily encounter difficulties in adjusting to the school context. These children may experience peer rejection and poor social relationships with peers and teachers (Bulotsky-Shearer & Fantuzzo, 2004; Fantuzzo, Bulotsky-Shearer, Fusco, & McWayne, 2005), and school failure (Baker, Clark, Crowl, & Carlson, 2009), while prosocial children adjust easily (Baker, 2006; Sette, 2012). For children who experience difficulties in behavioral adjustment, school (teachers in particular), may solve or aggravate their problems. A warm and supportive teacher may stimulate more adaptive behavior and redirect problematic behavior, while a teacher who cannot pay attention to the child's problem(s) or reacts in a harsh, punitive way, may worsen the child's behavior (Baker, 2006; Palermo, Hanish, Martin, Fabes, & Reiser, 2007).

Research has related children's behavioral adjustment in preschool to the teacher-child relationship and classroom emotional support. Studies have underlined the role played by the child's characteristics and/or the characteristics of the child's immediate environment (e.g., home or school) in shaping the child's behaviors. For example, findings from cross-sectional multilevel studies showed that children's development and specifically children's behavioral adjustment in preschool is a function of child characteristics (individual level) and environmental characteristics (class level) (Buyse, Verschueren, & Doumen, 2011; Buyse, Verschueren, Doumen, Van Damme, & Maes, 2008; Hamre, Pianta, Downer, & Mashburn, 2007; Shavega, van Tuijl, & Brugman, 2014). These studies found teacher-child relationship (individual level) and classroom emotional support, i.e. teacher sensitivity and positive climate (class level) to be associated with children's behavioral adjustment. In addition, teacher-child relationship and children's behavioral adjustment has been reported to relate in a bidirectional way (Myers & Pianta, 2008). However, because of their cross-sectional nature, these multilevel studies are inconclusive with regard to the direction of the relationships between these multilevel characteristics and behavioral adjustment.

Most longitudinal studies have either studied the teacher-child relationship (e.g., Howes, Phillipsen, & Peisner-Feinberg, 2000; O'Connor, Dearing, & Collins, 2010) or classroom emotional support (class level) (Curby, Grimm, & Pianta, 2010) as a predictor of behavioral adjustment among preschool children. One longitudinal study combined both levels, but the study was done at post-kindergarten level (Buyse, Verschueren, Verachtert, & Van Damme, 2009). To our knowledge no longitudinal multilevel study has been conducted on children's behavioral adjustment in preschool. Such a study is needed to understand the multiple predictors of children's behavioral adjustment at different levels in the early years and the (in)stability of problem behaviors.

Longitudinal studies on behavioral adjustment have been carried out in a Western cultural context. It is important to conduct a longitudinal multilevel study in Tanzanian pre-primary schools because no study of this nature has been done in this cultural context, which differs from the Western cultural context. Differences in cultural context can be found in school environment, pre-primary school characteristics, and the way children are brought up at home and in school. For example, in a Tanzanian cultural context, in contrast to Western culture, obedience in children is highly valued and encouraged. Furthermore, in Tanzania children spend a minimum of two years in pre-primary school before they join grade one in primary school (Shavega et al., 2014). In most cases the children are taught by the same teacher(s) during this period. We anticipated that staying with the same child for two years would make teachers more familiar with children's behavioral adjustment and therefore more likely to reliably report behavioral adjustment and their relationship with the child at both time points. There are qualitative studies (e.g., McGillicuddy-De Lisi & Subramanian, 1994) and cross-sectional quantitative studies (e.g., Shavega et al., 2014) on children's behavioral adjustment in Tanzania. For example, Shavega et al. (2014) found that both individual-level and class-level characteristics correlated with children's behavioral adjustment in school. The next step, building on this knowledge, is to examine the relationship among teacher-child relationship, classroom emotional support, and teachers' perception of children's behavioral adjustment over time. In addition we examine whether there is a bidirectional relationship between teacher-child relationship and children's behavioral adjustment.

The purpose of the present study was to investigate whether the early teacher-child relationship and classroom emotional support predict children's behavioral adjustment in Tanzanian pre-primary schools over a one-year time interval. However, literature refers to directionality to this topic we therefore examined whether children's behavioral adjustment predicts teacher-child relationship. This study is a follow-up of the cross-sectional study by

Shavega et al. (2014). The study combines a survey and an observational study using a longitudinal and multilevel approach.

Children's Behavioral Adjustment

Behavioral adjustment is generally defined as the ability of the child to adapt and develop appropriate behaviors and self-concept (Grych & Fincham, 1990). In this study behavioral adjustment is defined as the ability of children to regulate their own behaviors in accordance with the school rules and norms, and to adapt and cope with relatively unfamiliar people, such as new peers and teachers (cf. Shavega et al., 2014). In the current study we assume that in the second year of pre-primary school, children are better able to adapt their behaviors because of the early quality relationship with the teacher.

In the current study teachers' perception of children's behavioral adaptations are investigated in terms of prosocial, anxious, and aggressive behaviors. In this context, prosocial behavior refers to behavior that is acceptable to teachers in the school setting, such as being able to cooperate with other children, being helpful, and following teachers' instructions (Shavega et al., 2014). Aggressive behavior means a range of unacceptable behaviors, which are harmful to others (e.g., kicking, fighting and/or beating other children). A child with such behavior(s) has an unfriendly relationship with other children, does not respect school rules and regulations and may sometimes go against teachers' instructions (cf., Mantzicopoulos, 2005; Shavega et al., 2014; Spilt, 2010). Anxious behavior refers to a situation whereby a child worries about everything, is withdrawn, and sometimes reticent (cf., Birch & Ladd, 1998; Shavega et al., 2014; Spilt, 2010). Aggressive and anxious behaviors have been reported to limit children's ability to adapt to the school context (Baker et al., 2009; O'Connor et al., 2010; Shavega et al., 2014). These behavioral adjustment problems may continue over time in school life (Buyse et al., 2009). A child's attributes such as aggressive behavior may affect the relationship with the teacher (Wang & Chen, 2010), which may provoke a teacher and create conflictual relationship. Therefore, we explored whether reciprocal relationship existed between teacher-child relationship and children's behavioral adjustment.

According to literature teachers consistently reported experiencing higher levels of conflictual relationships with boys than with girls (Hamre et al., 2007; Sette, 2012), which is related to the fact that boys behave more aggressively than girls. In this study we examined whether gender of the child moderate the relationship between teacher teacher-child relationship and children's behavior adjustment.

Children's Behavioral Adjustment and its Relationship to the Teacher-child Relationship

Literature has shown that the early teacher-child relationship is an important factor in regulating children's behavioral adjustment in school (Hamre & Pianta, 2001). Studies showed that children who entered school with higher ratings of behavioral problems were at greater risk of experiencing conflictual relationships with teachers, which continued over time (Graziano, Reavis, Keane, & Calkins, 2007; Jerome, Hamre, & Pianta, 2008). Teacher-child closeness has been found to reinforce behavioral adjustment in children and was reported to be linked to prosocial behaviors such as peer liking (Baker, 2006; Cadima, Leal, & Burchinal, 2010; Palermo et al., 2007; Sette, 2012). In addition, other studies revealed that a supportive teacher-child relationship stimulated positive behavior to children who were at risk of developing poor school adjustment (Baker, 2006; Cadima et al., 2010; Hughes, 2012; Stuhlman & Pianta, 2001). Conversely, teacher-child conflict has been found to reinforce negative behaviors in children and was reported to be linked to aggressive behavior (Doumen et al., 2008; Palermo et al., 2007; Sette, 2012).

Longitudinal studies showed that quality early social relationships with teachers play an important role in laying the foundations for later behavioral adjustment in school (Burchinal, Pesiner-Feineberg, Pianta, & Howes, 2002; Hamre & Pianta, 2001). Children who were reported to experience conflictual relationship with teachers in Year 1, were reported to demonstrate difficulties in behavioral adjustment in Year 2 and/or in the subsequent years in school (Hamre & Pianta, 2001; Hughes & Cavell, 1999; Ladd & Burgess, 1999; Pianta, Steinberg, & Rollins, 1995; Pianta & Stuhlman, 2004; O'Connor, Collins, & Supplee, 2012; Silver, Measelle, Armstrong, & Essex, 2005). For example, Hamre and Pianta (2001) conducted a study from kindergarten to eighth grade to examine teachers' perceptions of their relationship with students and found that teacher-child conflict predicted behavioral problems in subsequent years. Other studies revealed an association between teacher-child conflict and a decrease in prosocial behavior over time (Birch & Ladd, 1998). This study showed that a conflictual teacher-child relationship established when children enter preschool becomes an important early indicator for their later behavioral difficulties. In contrast, some studies reported that teacher-child closeness established early in preschool was associated with a decrease in behavior problems (e.g., aggression) in subsequent grades (Birch & Ladd, 1998; Hughes & Kwok, 2006; Meehan, Hughes, & Cavell, 2003; Pianta et al., 1995; Silver et al., 2005). Furthermore, Myers and Pianta (2008) and Koles, O'Connor, & Collins (2013), comment that a warm teacher-child relationship is important for children to learn more adaptive behaviors.

Studies documented that teacher-child relationships and children's behavioral adjustment act in bidirectional (Carr, Taylor, & Robinson, 1991; Doumen et al., 2008; Myers & Pianta, 2008; Patterson, 1977; Zhang & Sun, 2011). Birch and Ladd (1998) comment that aggressive behavior and a conflictual relationship may relate reciprocally because a child who engages in conflictual relationships is more likely to be motivated to display aggressive behaviors. In turn, teachers may find it difficult to develop and maintain a close relationship with an aggressive child, which may increase the chance of more unadjusted behavior (Doumen et al., 2008; Myers & Pianta, 2008). According to Ladd and Burgess (1999), a bidirectional relationship between a conflictual teacher-child relationship and problem behaviors in children can lead into circles of coercive interaction in which problem behaviors and relational difficulties stimulate each other. However, compliant and prosocial children on the other hand may elicit positive reactions from their teachers and this may stimulate friendship relationship with teacher and furthermore enhance their prosocial behavior (Myers & Pianta, 2008). On the basis of the previous research, in the present study we aim to establish the extent to which the early teacher-child relationship predicts later behavioral adjustment and children's behavioral adjustment predicts teacher-child relationship in pre-primary schoolchildren in Tanzania.

Children's Behavioral Adjustment and its Relationship to Classroom Emotional Support

Studies on the social interactions between a teacher and a group of children in the classroom have shown that teacher sensitivity and a positive climate are related to children's behavioral adjustment (Gazelle, 2006; Mashburn et al., 2008; Rimm-Kaufman et al., 2002). For example, Gazelle's (2006) findings suggest that a lack of emotional support at class level may contribute to anxiety in children, which in turn can lead to school adjustment problems. A sensitive teacher who creates a supportive classroom environment is capable of reducing children's long-term aggression and helping them to adapt their behaviors positively (Pianta & Stuhlman, 2004; Rimm-Kaufman et al., 2002). Curby et al. (2010) and Rimm-Kaufman et al. (2002) emphasize that teachers who are consistently sensitive to children's needs and cues are more likely to regulate children's behaviors in the classroom. According to Brophy-Herb, Lee, Nievar, and Stollak (2007), positive classroom climate and teacher sensitivity may stimulate positive behavioral adjustment in children.

Longitudinal studies revealed that teacher sensitivity and/or a positive climate influence children's behavioral adjustment in preschool over time (Curby et al., 2010). A longitudinal multilevel study by Buyse et al. (2009) from elementary grade one to three revealed that both teacher-child closeness (individual level) as rated by teachers, and classroom relational

closeness (class level) as rated by teachers predicted children's psychosocial adjustment. However, children's behavior problems have also been reported to influence the support children received from adults (Wang, Christ, Mills-Koonce, Garrett-Peters, & Cox, 2013).

To sum up, the aforementioned longitudinal studies point out that the teacher-child relationship and /or classroom emotional support established as soon as the child starts school has an impact on the child's behavioral adjustment at school in subsequent years. Furthermore, the literature revealed that teacher-child relationship and children's behavior adjustment relate reciprocally. However, most of the literature refers to a Western cultural context, which differs from that in Tanzania. For example, a study from Tanzania reports that children were required to be obedient (McGillicuddy-De Lisi & Subramanian, 1994). They furthermore report that in contrast to mothers from USA, Tanzanian mothers believe in direct instructions as a source of child development and social harmony. This may mean that self-determination in the Tanzania pre-primary school context is less emphasized than in Western cultures. This may increase the social distance between teachers and children in preschool, which may subsequently affect teacher-child relationship and children's behavioral adjustment. In sum, there is a lack of longitudinal studies on children's behavioral adjustment in pre-primary school that combine individual and class-level characteristics specifically in a Tanzanian context. In addition, no study addressed bidirectional relationship between teacher-child relationship and children's behavioral adjustment. This study, therefore, aims to fill the gap by examining the effect of early teacher-child relationships and classroom emotional support on children's behavioral adjustment over time and bidirectional relationship between teacher-child relationship and children's behavior adjustment.

In Tanzania, some classes have been reported to be overcrowded (Mtahabwa & Rao, 2010), exceeding the national target of 40 children per class for primary schools (Ministry of Education and Culture (MoEC), 2006; SACMEQ, 2011; UWAZI, 2011). Studies showed that in smaller classes children's behaviors are more easily manageable and teacher-child relationships are more positive (Bain & Achilles, 1986; Blatchford, Bassett, & Brown, 2005) than in larger classes. On the basis of previous research we examined whether class size moderated the relationships between teacher-child relationship and children's behavioral adjustment.

The Present Study

Using a longitudinal and multilevel approach, the present study was designed to examine whether teacher-child relationships and classroom emotional support affect teachers'

perception of children's behavioral adjustment in pre-primary schools over time. It further aimed to examine whether bidirectional relationship between teacher-child relationship and children's behavioral adjustment existed. The study was guided by two main research questions: First, do the quality of the teacher-child relationship (closeness and conflict at child level) and classroom emotional support (teacher-sensitivity and a positive climate at class level) in Year 1 affect teachers' perception of children's behavioral adjustment (anxious, prosocial, and aggressive behaviors) in Year 2? Second, does teachers' perception of behavioral adjustment (prosocial, anxious, and aggressive behaviors) in Year 1 affect teacher-child relationship (closeness and conflict) in Year 2? Gender of the child, and class size were hypothesized to moderate the relationships through cross-level interactions. On the basis of previous research, the following hypotheses guided this study:

1. Teacher-child closeness (individual level), teacher sensitivity and positive climate (class level) in Year 1 were expected to predict an increase in Year 2 prosocial behavior and a decrease in aggressive and anxious behaviors in Year 2, while Year 1 teacher-child conflict (individual level) was expected to predict an increase in aggressive and anxious behavior in Year 2. In addition, closeness and conflict in Year 1 aggregated at class level were expected to predict teachers' perception of behavioral adjustment in Year 2.
2. Teacher's perception of prosocial behavior (individual level) in Year 1, teacher sensitivity and positive climate (class level) in Year 1 were expected to predict an increase of teacher-child closeness in Year 2 and a decrease in teacher-child conflict in Year 2, while anxious and aggressive behaviors (individual level) in Year 1 were expected to predict an increase of Year 2 teacher-child conflict and a decrease of Year 2 teacher-child closeness. In addition, teachers' perception of prosocial, anxious, and aggressive behaviors in Year 1 aggregated at class level were expected to predict teacher-child relationship in Year 2.
3. Gender of the child was expected to moderate the relationship between the teacher-child relationship and behavioral adjustment (we expected a stronger positive relationship between teacher-child closeness and prosocial behavior in girls than in boys and we expected a stronger positive relationship between a conflictual teacher-child relationship and aggressive and anxious behaviors in boys than in girls). Class size was expected to moderate the relationship between classroom emotional support and teacher-child relationship and behavioral adjustment (we expected a higher and more positive relationship between teacher sensitivity and/or positive climate, teacher-child closeness and prosocial behavior in children in smaller classes than in larger classes and we expected a more negative relationship between teacher sensitivity and/or positive climate,

teacher-child conflict, and aggressive and anxious behaviors in children in larger classes than in smaller classes).

Method

Participants

The study was conducted in pre-primary schools in the Ilala district, Dar es Salaam region, Tanzania. The original sample involved 320 children and 20 teachers from 20 schools; ten public and ten private schools participated in this study for Year 1 in June 2012 (for more details on the sampling procedures see Shavega et al., 2014). In this year teachers reported on teacher-child relationships and children's behavioral adjustment, while information on classroom emotional support was obtained through observation using the Classroom Assessment Scoring System (CLASS) (Pianta, LaParo, & Hamre, 2008).

A follow-up study after a one-year interval was carried out in June 2013 with the same teachers and children who participated in the first study. Due to attrition, the sample was reduced to 310 children in the study for Year 2. Of the 10 missing children, one child was reported dead and nine were reported to have moved to other schools. Gender distribution among the children in the Year 2 study was male 156 (50.32%) and female 154 (49.68%). In this year the ages of the children ranged between 5 and 7 years ($M = 5.75$; $SD = .66$ years), which was almost the same in every class. The majority of the teachers were female (95%). Teachers' ages ranged between 20 and 60 years ($M = 32.90$, $SD = 8.78$). With regard to the teachers' educational level, the majority (70%) had received secondary education, 15% only primary education and 15% university education (see Shavega et al., 2014). Generally, class size ranged from 18 to 98 children; in the public schools it ranged from 26 to 98 (average of 47), while in the private schools it ranged from 23 to 57 (average of 35).

Ethical Procedure

Permission to conduct the study was issued by the Regional Administrative Secretary (RAS) and the teachers gave their verbal consent for participation in the study for the second time. The Student-Teacher Relationship Scale (STRS) (Pianta, 1994) and the Prosocial Scale of the Preschool Behavior Questionnaire (PPBQ) (Behar & Stringfield, 1974; Tremblay, Vitaro, Gagnon, Piché, & Royer, 1992) were cross-culturally adapted for this study. For the adaptation procedures see Shavega et al. (2014). CLASS was adopted from the CLASS Pre-K tool (Pianta et al., 2008).

Instruments

The teacher questionnaire comprised questions on the teacher-child relationship and teachers' perception of children's behavioral adjustment. The Student-Teacher Relationship Scale (STRS) is a measure developed to assess teachers' perceptions of their relationship with an individual child (dyadic relationship) in school (Pianta, 1994). The measure consists of three constructs: closeness, conflict, and dependency. In this study we adapted two constructs: closeness and conflict. We did not include dependency because it was not viewed as culturally relevant among Tanzanian pre-primary children (see Shavega et al., 2014). Closeness (6 items) tapped information on friendly and harmonious relationships displayed between teacher and child; for example, "I have a good and warm relationship with this child", "Working with this child gives me self-confidence". The conflict subscale (5 items) assessed information on relationships characterized by disharmony or misunderstanding between teacher and child. An example of an item is "Working with this child drains my energy". The items were rated on a 5-point Likert scale ranging from "never" to "always". For number of items, stability, and change over time of each scale see Table 1.

The behavioral adjustment questionnaire assessed information on teachers' perception of children's behavioral adjustment in pre-primary schools and comprised of three constructs: prosocial behavior (11 items), anxious behavior (5 items), and aggressive behavior (9 items). Prosocial behavior refers to friendly and acceptable behavior, which can help a child to get along with teachers and other children in school successfully. One item on this scale is "This child likes sharing". Anxious behavior refers to uncertainty, which limits a child's ability to get along with other children and adults in the school context. An example of an item is "This child lives in isolation". Aggressive behavior involves a range of unfriendly and hostile behaviors, which limit a child's ability to adjust in a school context, for example "This child fights with other children" (see Shavega et al., 2014). Children were rated using a 3-point Likert scale, which included the options "does not apply", "sometimes applies", and "always applies".

Classroom observations were carried out to observe emotional support. The observation schedule used to measure emotional support in this study was adopted from CLASS Pre-K tool (Pianta et al., 2008). This tool aims to measure teacher-child interaction at class level. Classroom emotional support has four dimensions: teacher sensitivity, positive climate, negative climate, and regard for children's perspectives. Two subscales of classroom emotional support (teacher sensitivity and positive climate) were used in the current study because of the nature of the class size in the Tanzanian cultural context. Rating scales for all

dimensions ranged from 1 to 7; 1 and 2 indicating low, 3, 4 and 5 indicating medium, and 6 and 7 indicating a high degree of emotional support. Behavioral indicators outlined in the CLASS Pre-K manual (Pianta et al., 2008) were used in this study. For example, teacher sensitivity comprises of 7 behavioral indicators, such as whether the teacher is responsive to and aware of the children who need extra support, is ready to assist the children, gives individualized support, offers timely help and allows free participation, and whether children seek support from the teacher, and the extent to which a teacher provides comfort and encouragement to the children. Positive climate comprises of 7 behavioral indicators such as whether the teacher smiles at the child, laughs with the child, has eye contact, and a warm voice.

The first author was an eligible user of CLASS (Shavega et al., 2014). The observation involved four sessions in each classroom with a total of 2 hours per session (see also Shavega et al., 2014). The main researcher and research assistant observed 20% of all classes for inter-observer reliability. Inter-observer intra-class correlations coefficients (ICCs) for teacher sensitivity and positive climate were .91 and .89 respectively, which according to Cicchetti et al. (2006) indicates excellent agreement.

Data Analysis Plan

Teachers' perception of children's behavioral adjustment in Year 2 was predicted as a function of time, child characteristics, and classroom characteristics in Year 1 and their cross-level interactions. In this study variables were measured at three levels: time, child, and class. Data were analyzed using IBM SPSS 20 software. SPSS Mixed model with repeated measures was used to examine changes in behavioral adjustment. We restructured the data file matrix in order to arrange the time-related observations vertically (Heck, Thomas, & Tabata, 2010; Peugh & Enders, 2005; West, 2009). This created two records for each case, representing Year 1 and Year 2. Predictor variables can be identified at child level (closeness, conflict, gender) and class level (teacher sensitivity, positive climate, and aggregated closeness and conflict, and class size). Teacher-child closeness and conflict were centered around the group mean and thereafter aggregated at class level. Gender of the child, and class size were used to build cross-level interactions.

We further explored whether bidirectional relationship existed between teacher-child relationship and children's behavioral adjustment. To establish this relationship we tested whether teacher-child relationship in Year 2 was predicted as a function of time, children's behavioral adjustment (child level) (prosocial, anxious, and aggressive behaviors), classroom

emotional support in Year 1 and their cross-level interactions. This was also tested in a longitudinal and multilevel analysis. Time was nested within the child level (children's behavioral adjustment) and the child level was nested within the class level (teacher sensitivity and positive climate). Procedures of data analysis and file restructuring were the same. Predictor variables were Year 1 child level (prosocial, anxious, and aggressive behaviors), Year 1 class level (teacher sensitivity and positive climate) and the aggregated prosocial, anxious, and aggressive behaviors at class level. Gender of the child, and class size were used to build cross-level interactions.

To test our hypotheses we developed a hierarchical regression model. We ran the null model by calculating the intra-class correlation (ICC) to examine whether there was variance in children's behavioral adjustment and teacher-child relationship to be explained at each level. No predictor variable was added in this model. The null model is a basic condition which helps researchers to decide whether to continue with multilevel analysis or not on the basis of the ICC cut-off of 5% (see Heck et al., 2010). In Model 1, we introduced time as the only predictor variable. Time was used to determine whether teachers' perception of behavioral adjustment and teacher-child relationship variables changed from Year 1 to Year 2, and whether the initial intercept and random slope of time varied within and among individuals and between schools. The statistical significance of time determined further multilevel model testing analysis.

To test Hypothesis 1, we added two predictor variables from the child level; first we added Year 1 teacher-child closeness in Model 2 and subsequently we added Year 1 teacher-child conflict in Model 3 while controlling for Year 1 teacher-child closeness. This was done because we believed that the influence of teacher-child closeness on children's behavior differs from that of teacher-child conflict. Second, we added predictor variables from class level: Year 1 teacher sensitivity and Year 1 positive climate in Model 4, while controlling for variables at child level. Third, we added the aggregated teacher-child closeness and teacher-child conflict variables while controlling for variables of Level 2 and Level 3, which were presented in Model 5. To test Hypothesis 2, first we added predictor variables at individual level; Year 1 prosocial behavior in Model 2 and subsequently we added Year 1 anxious and aggressive behaviors in Model 3. Second, we added predictor variables at class level; Year 1 teacher sensitivity and Year 1 positive climate in Model 4 while controlling for variables at child level. Third, we added the aggregated prosocial, anxious, and aggressive behaviors in Model 5. To test Hypothesis 3, we used two moderator variables, gender of the child and class size, to establish cross-level interaction terms. Only statistically significant variables were

used to build cross-level interactions. Variables in model 2, 3, 4, 5 and their cross-level interactions were used to explain the observed differences in children's initial behavior adjustment level on one hand, and initial teacher-child relationship on the other hand (intercept) and their slopes or growth (linear growth rate). Full maximum likelihood was used to fit the model because it shows how well the regression coefficients and variance estimates fit the sample data (cf. Peugh; 2010; Sheck & Ma, 2011).

Results

Descriptive Information

Stability, mean change, and concurrent relationships among variables

We examined the stability of variables from Year 1 to Year 2. The findings revealed that all variables were relatively stable over time, ranging from $r = .45, p < .01$ to $r = .64, p < .01$ (see Table 2). According to Cohen (1992), these correlations are in the range from moderate to high. This implies that children who were prosocial remained prosocial, as was the case for those who were aggressive and anxious. In addition, children who had a close relationship with their teacher maintained this relationship and those who experienced conflicts continued with less positive relationships ($r = .64, p < .01$ and $r = .47, p < .01$ respectively).

The mean score was used to examine the change in the variables from Year 1 to Year 2. There was a slight increase in the mean levels of teacher-child closeness and positive climate in Year 2, while there was a slight decrease in the mean levels of teacher-child conflict and aggressive behavior in Year 2. There was no change in the mean levels of prosocial and anxious behaviors, and teacher sensitivity (see Table 1). On the one hand, the findings indicated stability of individual differences, and on the other a slight positive growth in the group as a whole.

Concurrent relationships showed that most correlations between teacher-child relationship (closeness and conflict) and children's behavioral adjustment (prosocial, anxious, and aggressive behaviors) were in the expected directions (see Table 2). Contrary to our expectation, we found negative bivariate concurrent relationships between teacher-child closeness and teacher sensitivity and positive climate at both time points (see Table 3).

Results of zero order correlations (see Table 2) showed that, overall, the relationships between teacher-child relationships in Year 1 and children's behavioral adjustment in Year 2 were stronger than vice versa. Whether the teacher-child relationship in Year 1 has an influence on children's behavioral adjustment in Year 2 and whether children's behavioral adjustment has

an influence on teacher-child relationship was tested in Hypothesis 1 and 2 in the longitudinal multilevel models.

Table 1

Psychometric characteristics of the measures, descriptive statistics and change over time (N teachers = 20, N children = 310).

Measures	Reliability				Change over time		
		<i>N</i>	α 1(320)	α 2(310)	<i>M1(SD)</i>	<i>M2(SD)</i>	<i>T(M1-M2)</i>
Closeness (TCR)	6	.74	.81	3.88(.74)	4.01(.74)	-3.46**	
Conflict (TCR)	5	.69	.73	1.85(.65)	1.62(.56)	6.36**	
Prosocial behavior (CBA)	11	.80	.85	1.43(.36)	1.45(.39)	-.73	
Anxiety (CBA)	5	.67	.70	.64(.44)	.63(.44)	.11	
Aggression (CBA)	9	.72	.81	.60(.38)	.55(.32)	2.55**	
Teacher sensitivity (CES)	7			4.78(1.04)	4.86(.99)	-1.26	
Positive climate (CES)	7			4.81(1.08)	5.38(.86)	-9.49**	

N = number of items, TCR refers to teacher-child relationship, CBA refers to children's behavioral adjustment, CES refers to classroom emotional support

Note: * $p < .05$; ** $p < .01$

Table 2

Zero order correlation of variables between child level characteristics (level 1) and dependent variables

Variables	1	2	3	4	5	6	7	8	9	10
1. Closeness T1	—									
2. Conflict T1	-.39**	—								
3. Prosocial T1	.38**	-.55**	—							
4. Anxiety T1	-.39**	.37**	-.39**	—						
5. Aggression T1	-.32**	.61**	-.56**	.27**	—					
6. Closeness T2	.64**	-.30**	.32**	-.22**	-.26**	—				
7. Conflict T2	-.30**	.47**	-.25**	.25**	.31**	-.19**	—			
8. Prosocial T2	.30**	-.38**	.52**	-.26**	-.35**	.35**	-.33**	—		
9. Anxiety T2	-.29**	.35**	-.33**	.45**	.21**	-.21**	.32**	-.46**	—	
10. Aggression T2	-.33**	.36**	-.33**	.22**	.53**	-.24**	.35**	-.46**	.22**	—

** $p < .01$ *Bold shows stability of variables from Year 1 to Year 2*

Table 3

Bivariate correlations of key variables across two measurement occasions (closeness and conflict are centered and aggregated at classroom level)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Level 2, time 1														
1. Closeness	-													
2. Conflict	-.48**	-												
Outcome variables at time 1														
3. Prosocial	.32**	-.39**	-											
4. Anxiety	-.30**	.39**	-.39**	-										
5. Aggression	-.29**	.44**	-.56**	.27**	-									
Level 3 at time 1														
6. Teacher sensitivity	-.17**	-.18**	-.02	.05	-.23**	-								
7. Positive climate	-.33**	.09	.17**	.14*	.05	.87**	-							
Level 2 at time 2														
8. Closeness	.85**	-.48**	.27**	-.19**	-.26	-.08	-.14**							
9. Conflict	-.51**	.47**	-.18**	.35**	.31**	-.21**	-.07	-.49**	-					
Outcome variables at time 2														
10. Prosocial	.24**	-.33**	.52**	-.26**	-.35**	.13**	.02	.33**	-.27**					
11. Anxiety	-.27**	.31**	-.33**	.45**	.21**	.06	.04	-.26**	.26**	-.46**				
12. Aggression	-.29**	.33**	-.33**	.22**	.53**	-.06	.00	-.24**	.42**	.46**	.23**	-		
Level 3 at time 2														
13. Teachers sensitivity	-.38**	-.08	.02	.02	-.11	.49**	.53**	-.34**	.25**	.06	.00	.05	-	
14. Positive climate	-.42**	-.16**	.00	.02	-.11	.45**	.45**	-.23**	.17**	.07	-.07	.06	.81**	-

Note: * $p < .05$; ** $p < .01$

Bold shows stability of variables from Year 1 to Year 2

Inferential Analyses

Before testing the hypotheses, we examined in the preliminary analysis the unconditional mean model (null model), which revealed a significant grand mean for all behavioral adjustment variables (anxious, prosocial and aggressive behaviors) and teacher-child relationship variables (closeness and conflict) and a sufficient ICC for each level, which was above the cut-off point of 5%. In Model 1, we introduced time, in order to examine whether children's behavioral adjustment variables and teacher-child relationship variables changed from Year 1 to Year 2. In the first analysis only aggressive behavior revealed a significant change in Year 2: it decreased. In the second analysis both teacher-child closeness and conflict revealed a significant change in Year 2. Teacher-child closeness increased and teacher-child conflict decreased. The findings are in line with mean score output which indicated a slight decrease in the mean level of aggressive behavior and teacher-child conflict and an increase of teacher-child closeness (see Table 1). Results of the longitudinal multilevel regression models for aggressive behavior are summarized and presented in Table 4. Prosocial and anxious behaviors did not reveal a significant change in Year 2. Further, multilevel analysis was therefore not performed for these variables. Results of the longitudinal multilevel regression model for teacher-child closeness and conflict are summarized and presented in Table 5 and 6 respectively.

Hypothesis 1: Year 1 teacher-child relationship (individual level) and Year 1 classroom emotional support (class level) as predictors of Year 2 children's aggressive behavior

We tested whether Year 1 teacher-child closeness and Year 1 teacher-child conflict predicted Year 2 aggressive behavior in children. To test Hypothesis 1 we introduced level two variables (individual level) (Year 1 teacher-child closeness and Year 1 teacher-child conflict). Because we believed that closeness and conflict had a different influence on aggressive behavior we first introduced Year 1 teacher-child closeness; the results showed that Year 1 teacher-child closeness significantly predicted Year 2 aggressive behavior in children (see Table 4, Model 2). Then we introduced Year 1 teacher-child conflict, while controlling for Year 1 teacher-child closeness. Results indicated that Year 1 teacher-child conflict significantly predicted Year 2 aggressive behavior, while the relationship between Year 1 teacher-child closeness and Year 2 aggressive behavior in children weakened (see Table 4, Model 3). In Model 4 we introduced level three variables (class level): Year 1 teacher sensitivity and Year 1 positive climate while controlling for variables at Level 2 to examine whether they predicted Year 2 aggressive behavior at the class level in addition to variables at

the individual level (Table 4, Model 3). Only Year 1 teacher sensitivity predicted Year 2 aggressive behavior in children (see Table 4, Model 4). No relationship was found between positive climate and aggressive behavior; this was therefore not reported in Table 4.

In Model 5 we tested whether the aggregated teacher-child closeness and conflict in Year 1 predicted children's aggressive behavior in Year 2, while controlling for teacher-child relationship (closeness and conflict) at individual level and teacher sensitivity at class level. Results indicated that not only time, and teacher-child closeness and conflict were significant predictors, but also the aggregated teacher-child conflict predicted Year 2 aggressive behavior in children (see Table 4, Model 5). This indicates that in classes with a higher class-level mean of Year 1 teacher-child conflict, Year 2 aggressive behavior increased compared to classes with a lower class-level mean of conflict (see Table 4, Model 5). However, after introducing the aggregated teacher-child conflict in Model 5, the relationship between Year 1 teacher sensitivity and aggressive behavior disappeared. The aggregated teacher-child closeness was not significant; it was therefore not reported in the table.

Table 4

Model summary for longitudinal and multilevel data: outcome variable is Year 2 aggressive behavior

<i>Parameters</i>	<i>Null model</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
	β (<i>SE</i>)					
Fixed part						
ICC-1 = 47.8						
ICC_2 = 26.4						
ICC_3 = 25.8						
intercept	.58(.05) **	.60(.0) **	.61(.05) **	.60(.05) **	.80(.20)**	.84(.15)**
Time		-.06(.20) *	-.05(.02) *	-.05(.02) *	-.05(.02)*	-.05(.02) *
Year 1 Closeness			-.13(.03) **	-.07(.03) *	-.07(.03)*	-.07(.03) *
Year 1 Conflict				.23(.03) **	.23(.03) **	.23(.03) **
Year 1 Teacher sensitivity					-.20(.08) *	-.04(.07)
Conflict aggregate						.24(.09) *
Random part						
Residue	.08(.01) **	.07(.00) **	.07(.00) **	.07(.00) **	.07(.00) **	.07(.00) **
Variance	.04(.01) *	.04(.00) *	.04(.00) *	.04(.01) *	.02(.00) *	.03(.01) *
Variance	.04(.00) **	.04(.00) **	.03(.00) **	.02(.00) **	.02(.00) **	.02(.00) **
Model Summary						
-2 Restrictive log	436.659	430.260	411.731	361.770	356.810	343.739

Note, * $p < .05$; ** $p < .01$,

ICC = intra-class correlation coefficient,

ICC_1 for level 1,

ICC_2 for level 2,

ICC_3 for level 3

Hypothesis 2: Year 1 children's behavioral adjustment (individual level) and classroom emotional support (class level) as predictors of Year 2 teacher-child closeness and conflict.

We tested Hypothesis 2 to find out whether teachers' perception of anxious, prosocial, and aggressive behaviors in Year 1, and teacher sensitivity and positive climate in Year 1 predicted Year 2 teacher-child closeness and conflict. We introduced Level 2 variables (Year 1 prosocial, Year 1 anxious, and Year 1 aggressive behaviors) in the model. First, we introduced Year 1 prosocial behavior in Model 2; results showed that Year 1 prosocial behavior significantly predicted both Year 2 teacher-child closeness and conflict (see Tables 5 and 6; Model 2). Thereafter, we introduced Year 1 anxious behavior and Year 1 aggressive behavior in Model 3, while controlling for Year 1 prosocial behavior. Results showed that Year 1 anxious behavior predicted Year 2 teacher-child closeness (see Table 5, Model 3), but did not predict Year 2 teacher-child conflict (and was therefore not reported in Table 6). Year 1 aggressive behavior predicted an increase in Year 2 teacher-child conflict (see Table 6, Model 3), but did not predict Year 2 teacher-child closeness (and was therefore not reported in Table 5). In Model 4 we added class level variables; Year 1 teacher sensitivity and Year 1 positive climate. Both variables were not significant (the results were therefore not reported in Tables 5 and 6).

We tested whether the aggregated prosocial, anxious, and aggressive behaviors in Year 1 predicted teacher-child closeness and conflict. Result showed that only aggregated anxious behavior predicted teacher-child conflict. This indicates that in classes with a higher class level mean of Year 1 child anxiety, Year 2 teacher-child conflict increased more than in classes with a lower class level mean of child anxiety (see Table 6, Model 3). The aggregated prosocial and aggressive behaviors were not significant: these variables were not reported in Tables 5 and 6.

Table 5

Model summary for longitudinal and multilevel data. Outcome variable is Year 2 teacher-child closeness

<i>Parameters</i>	<i>Null model</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
	β (<i>SE</i>)			
Fixed part				
ICC-1 = 38%				
ICC_2 = 34%				
ICC_3 = 28%				
intercept	3.94(.10)**	3.75(.11)**	2.99(.17)**	3.31(.18)**
Time		.13(.03)**	.13(.03)**	.13(.03)**
Year 1 Prosocial			.49(.09)**	.32(.10)*
Year 1 Anxiety				-.29(.07)**
Random part				
Residue	.21(.01)**	.20(.01)**	.20(.01)**	.20(.00)**
Variance	.19(.01)*	.19(.06)*	.15(.00)*	.14(.05)*
Variance	.15(.02)**	.16(.02)**	.13(.02)**	.13(.07)**
Model Summary				
-2 Restrictive log	1133.613	1121.242	1090.117	1073.254

Note,* $p<.05$; ** $p<.01$,

ICC = intra-class correlation coefficient,'

ICC_1 for level 1, I

CC_2 for level 2

ICC_3 for level 3

Table 6

Model summary for longitudinal and multilevel data: outcome variable is Year 2 teacher-child conflict

<i>Parameters</i>	<i>Null model</i> β (<i>SE</i>)	<i>Model 1</i> β (<i>SE</i>)	<i>Model 2</i> β (<i>SE</i>)	<i>Model 3</i> β (<i>SE</i>)	<i>Model 4</i> β (<i>SE</i>)	<i>Cross-level interaction</i> β (<i>SE</i>)
Fixed part						
ICC_1 = 65%						
ICC_2 = 21%						
ICC_3 = 14						
intercept	1.74(.07)**	2.08(.09)**	2.08(.08)**	2.17(.17)**	1.29(.56)**	1.29(.56)*
Time		-.23(.03)**	-.23(.03)**	-.23(.03)**	-.19(.03)**	-.19(.03)**
Year 1 prosocial			-.56(.07)**	-.32(.08)**	-.31(.07)**	-.32(.07)**
Year 1 Aggressive				.40(.07)	.33(.07)**	.06(.20)
Anxiety aggregated					.56(.20)**	.56(.21)*
Year 1 Aggressive X class size						.30(.14)*
Random part						
Residue	.28(.07)**	.19(.01)**	.19(.01)**	.19(.01)**	.13(.01)	.14(.01)**
Variance	.09(.03)*	.09(.03)*	.06(.00)*	.03(.01)*	.01(.00)	.01(.01)*
Variance	.06(.01)**	.08(.01)**	.05(.01)**	.03(.01)**	.04(.01)**	.04(.01)**
Model Summary						
-2 Restrictive log	1039.069	1000.274	948.073	919.978	612.608	608.511

Note, * $p < .05$; ** $p < .01$

ICC = intra-class correlation coefficient

ICC_1 for level 1

ICC_2 for level 2

ICC_3 for level 3

X denotes cross-level interaction

Hypothesis 3: Gender of the child and class size as moderator variables

We introduced gender of the child and class size to build cross-level interactions. We aimed to examine whether child gender moderated the relationships between the teacher-child relationship and children's behavioral adjustment within classes, and whether class size moderated the relationship between classroom emotional support, teacher-child relationship and children's behavioral adjustment between classes. Results revealed an interaction effect between aggressive behavior and class size (see Table 6, interaction effect). The relationship between Year 1 aggressive behavior and Year 2 teacher-child conflict was higher in classes with larger class size than in classes with smaller class size. (see Figure 1). No interaction effect was found in other variables. These results were therefore not reported in Table 6.

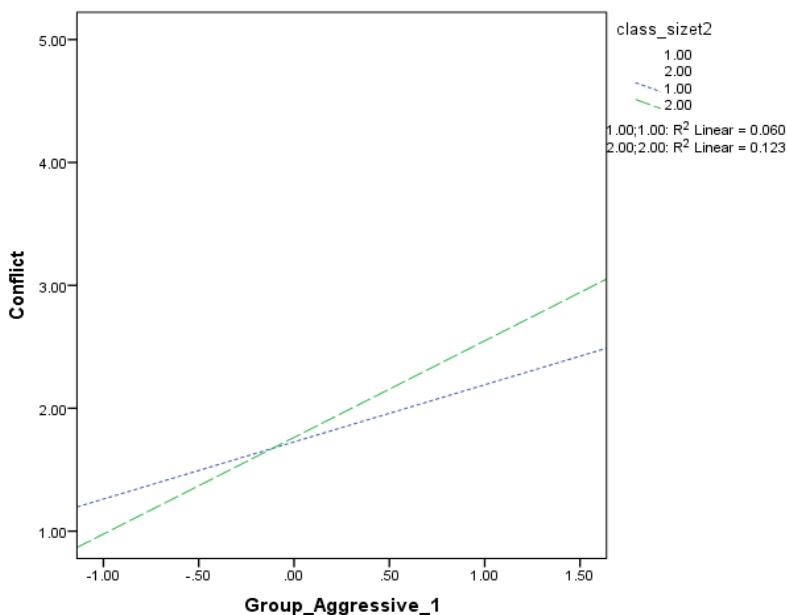


Figure 1; interaction effect between aggressive behavior and class size

1. Represents class size from the lowest through 40
2. Represents class size from 41 through the highest

Discussion

The current study extends the previous cross-sectional study by Shavega et al. (2014) by using longitudinal data in addition to a multilevel design. The study examined the relationships among teachers' perception of children's behavioral adjustment, teacher-child relationships, and classroom emotional support in a Tanzanian pre-primary school context over the time-span of one year. This study aimed to determine the extent to which the teacher-child relationship and classroom emotional support established in Year 1 enabled children to adapt their behaviors in a positive way in Year 2. The study also aimed to establish the extent to which children's behavioral adjustment in Year 1 predicted teacher-child relationships over time. The study further aimed to establish whether teacher-child relationship and children's behavioral adjustment act in a bidirectional relationship. No longitudinal multilevel studies are available on teachers' perception of preschoolers' behavioral adjustment, especially among children in Tanzania.

We hypothesized that teacher-child closeness (individual level) in Year 1, teacher sensitivity and positive climate (class level) in Year 1 would predict an increase in prosocial behavior and a decrease in aggressive and anxious behaviors in Year 2, and that teacher-child conflict in Year 1 would predict an increase in aggressive and anxious behaviors in Year 2. The results partially supported our hypotheses. The variable "time" consistently indicated a slight decrease in aggressive behavior from Year 1 to Year 2 (Table 4). On average children improved their aggressive behaviors due to positive factors such as Year 1 teacher-child closeness (see Table 4, Model 2). Year 1 teacher-child closeness was associated with a slight decrease in Year 2 aggressive behavior in children, which remained significant, but weakened after controlling for Year 1 teacher-child conflict (see Table 4, Model 3). This means that teachers who were able to establish harmonious and friendly relationships in Year 1 enabled children to adapt their behaviors appropriately in the subsequent year (Hamre & Pianta, 2001). The result suggests that harmonious relationships established early upon school entry enabled teachers to redirect difficult behaviors in children, which revealed a positive impact on aggressive behavior in Year 2. The finding is consistent with findings from longitudinal studies conducted in a Western cultural context (Hughes & Kwok, 2006; Silver et al., 2005).

Year 1 teacher-child conflict predicted an increase in Year 2 aggressive behavior. This is consistent with Western longitudinal studies (Birch & Ladd, 1998; Hamre & Pianta, 2001; O'Connor et al., 2012), which found that a conflictual teacher-child relationship exerted a strong influence on aggressive behavior in children. If the Year 1 teacher-child relationship is characterized by misunderstanding, anger, discordance, and conflict, especially when

associated with harshness on the teacher's part may lead to more aggressive behavior by the child in the subsequent year. Other studies support this interpretation (Palermo et al., 2007; Sette, 2012). Year 1 teacher-child conflict proved to have a strong relationship with aggressive behavior as its introduction in the model reduced the strength of Year 1 teacher-child closeness

We further hypothesized that Year 1 classroom emotional support would predict a decrease in Year 2 aggressive behavior. We examined the influence of the interaction between teacher and children in class as a group through observation, rather than looking at a dyadic teacher-child relationship through teacher's reports. After the inclusion of Year 1 individual closeness and conflict scores, Year 1 teacher sensitivity had a negative relationship with Year 2 aggressive behavior. The outcome implies that having a sensitive teacher in Year 1 was related to less aggressive behavior in Year 2. However, after the introduction of the aggregated teacher-child conflict in the model, Year 1 teacher-sensitivity no longer predicted Year 2 aggressive behavior. This implies that aggregated teacher-child conflict has a stronger relationship with Year 2 aggressive behavior than Year 1 teacher sensitivity and that their effects on Year 2 aggressive behavior overlapped.

We also hypothesized that teacher-child closeness and conflict in Year 1 aggregated at the class level would predict children's behavioral adjustment in Year 2. Our findings partly supported this hypothesis. We found that Year 2 aggressive behavior was much stronger in classes with a higher class-level mean of conflict than in classes with a lower class-level mean of conflict (see Table 4, Model 5). In classes with more conflictual relationships with the teacher, children showed more aggressive behaviors compared to classes with less conflictual relationships with the teacher. This indicates that in a Tanzanian culture the behavioral adjustment of an individual child is not only predicted by a conflictual relationship with the teacher at individual level but also at class level. A negative classroom atmosphere such as numerous conflictual relationships in a class may contribute to poor adjustment in many children in the class, despite positive teacher-child relationships at individual level (Birch & Ladd, 1997). If a large proportion of children experience a conflictual relationship with the teacher in class, the dyadic teacher-child relationship cannot buffer aggressive behavior in the child. A teacher may find it difficult to help children with behavioral adaptation problems (i.e., aggressive behavior) in a class with a higher class-level mean of conflict (cf. Pianta & Stuhlman, 2004).

We further hypothesized that Year 1 prosocial behavior (individual level), and Year 1 teacher sensitivity and Year 1 positive climate (class level) would predict an increase in Year 2

teacher-child closeness and a decrease in Year 2 teacher-child conflict and that Year 1 anxious behavior and Year 1 aggressive behavior would predict an increase in teacher-child conflict and a decrease in teacher-child closeness over time. The time variable indicated a slight increase in teacher-child closeness and a decrease in teacher-child conflict from Year 1 to Year 2 (see Table 5 and 6) respectively. Year 1 prosocial behavior predicted an increase in Year 2 teacher-child closeness (see Table 5, Model 2), while it predicted a decrease in Year 2 teacher-child conflict (see Table 6, Model 2). This implies that children who had prosocial behaviors as early as they started schooling were more likely to elicit positive reactions from their teachers, which might have stimulated positive and warmth relationships with teacher over time. The findings are consistent with other studies from Western cultures (Cadima et al., 2010; Birch & Ladd, 1997).

Aggressive behavior in Year 1 predicted an increase in Year 2 teacher-child conflict: i.e., children who were rated having aggressive behavior in Year 1 experienced teacher-child conflict in Year 2 in school. This may imply that aggressive behavior in children during school entry stimulated conflictual relationship with a teacher (see also Doumen et al., 2008; Myers & Pianta, 2008). Findings in this study showed that teacher-child conflict and aggressive behavior related in bidirectional way over time. This implies that a child with aggressive behavior during school entry is more likely to provoke a teacher, which may elicit conflictual relationship with a teacher, which in turn may motivate a child to display aggressive behaviors (cf. Birch & Ladd, 1998). This further suggests that a conflictual teacher-child relationship and aggressive behavior may stimulate each other, which may lead into circles of coercive interaction over time (cf. Ladd & Burgess, 1999). In addition to scores on aggressive behavior at individual level in the prediction of teacher-child conflict, the aggregated child anxious behavior at the class level also predicted an increase in Year 2 teacher-child conflict. When a class has many children with anxious behavior it may contribute to disharmonious relationship between children and a teacher

Cross-level interaction revealed that the relationship between teacher-child conflict and aggressive behavior was stronger in classes with a larger class size compared to classes with smaller class size. This implies that in large classes it is difficult for a teacher to manage children with aggressive behavior, which may subsequently lead into conflict between teacher and children (see also Blatchford et al., 2005). In Tanzania this might be the case as studies reported large class size in pre-primary schools (Mtahabwa & Rao, 2010), which exceeds the normal limit of 40 children for primary level (MOEC, 2006).

Among the unexpected findings in this study was a negative bivariate correlation between teacher-child closeness and teacher sensitivity on the one hand, and positive climate on the other hand. We further explored the bivariate correlations at item level. We found one item of teacher-child closeness, which reads “The child seems to feel secure and confident while he or she is with me”, which was moderately significantly and negatively related to teacher sensitivity ($r = -.41, p < .01$) and positive climate ($r = -.39, p < .01$). This item might have affected the overall bivariate correlation among the variables. Maybe this is a cultural sensitive item, better applicable in smaller classrooms than in the overcrowded Tanzanian classrooms.

We further compared means of these variables as obtained in this study with those obtained in a Western context. For example, the mean for teacher-child closeness in this study was $M = 4.01, SD = .74$; in the Western study was $M = 4.40, SD = .61$ (Mashburn, Hamre, Downter, Pianta, 2006). The mean for teacher sensitivity in this study was $M = 4.86, SD = .99$ and for positive climate was $M = 5.38, SD = .86$. In Western studies the mean for teacher sensitivity was $M = 5.13, SD = .93$ (Jamison, Cabell, LoCasale-Crouch, Hamre, & Pianta, 2014) and for positive climate was $M = 5.54, SD = .63$ (Hamre et al., 2012). These results show that mean of teacher-child closeness, teacher sensitivity, and positive climate in Tanzania seem to be lower than in Western cultures. Cohen’s effect size values ($d = -.57, -.67$, and -21 respectively) suggest medium and small effects. Nonetheless, in the multilevel longitudinal model, teacher sensitivity predicted aggressive behavior in the expected direction. The classroom emotional support and teacher-child closeness variables may need to be examined more closely to check if they are operationalized in a way that is appropriate to the African context, and more specifically, to Tanzania.

In sum, both individual-level (teacher-child relationship/children’s behavioral adjustment) and class-level characteristics in Year 1 predicted Year 2 aggressive behavior in children and Year 2 teacher-child relationship respectively. The significant effect of Year 1 teacher-child relationship (individual level) and aggregated teacher-child conflict (class level) on aggressive behavior in Year 2 indicates the importance of early relationships with the teacher for later behavioral adjustment in children in school (see also Hamre & Pianta, 2001). In this study the relationship between teacher-child conflict and aggressive behavior was found to relate in a bidirectional way. Findings confirm that the initial teacher-child relationship (individual level) (Hamre & Pianta, 2001) and aggregated conflict at class level had a significant relationship with children’s aggressive behavior over time. Also, children’s behavioral adjustment (individual level) and aggregated anxiety and cross-level interaction had

significant relationship with teacher-child conflict over time. Both, relational difficulties and aggressive behavior in a child may reinforce more aggressive behavior in a child over time (Myers & Pianta, 2008). Moreover, for a child with aggressive behavior who experiences a conflictual relationship with a teacher may become more difficult for a teacher to manage over time. This study emphasized the importance of considering both individual characteristics and environmental (i.e. classroom characteristics) in explaining children's behavioral adjustment in school over time.

Strengths and Weaknesses

This is the first longitudinal and multilevel study on teachers' perception of children's behavioral adjustment in the Tanzanian cultural context. The study highlighted the prediction of the early teacher-child relationship (individual level) and aggregated teacher-child conflict (class level) on aggressive behavior over time. This study also confirmed that teacher-child conflict and aggressive behavior act in bidirectional way. We used teacher reports and observation methods in contrast to the other longitudinal multilevel study (Buyse et al., 2008), which used teacher reports only. Using different informants and methods indicates methodological strength. We were able to have teachers and children participating in this study at both time points. It was our assumption that the teacher was familiar with the children's behavioral adjustment and was therefore able to report appropriately on their behavioral adjustment and his/her relationship with a child at both time points.

The present study is an extension of the previous cross-sectional study (Shavega et al., 2014). In the current study we investigated the in(stability) and direction of teachers' perception of children's behavioral adjustment over time. In addition, we explored whether teachers' perception of children's behavioral adjustment are predicted by teacher-child relationship and classroom emotional support. Obviously, these questions could not be addressed in a cross-sectional study.

This study also has weaknesses: first, teachers rated both teacher-child relationship and children's behavioral adjustment, which may be associated with informant bias. To avoid this bias in the future independent measures are needed, e.g., parents should provide information about their relationship with their children. Second, a one-year interval is relatively short for a longitudinal study. To have a clearer picture of children's behavioral trajectory in the future, a multi-wave study is needed. This might also create the possibility of children's behavior being rated by different teachers. Third, further examination of the use of CLASS tool in an African context, with large class sizes and a different children upbringing style is necessary. In future,

when CLASS tool is applied outside a Western (individualistic) cultural context it should be adapted rather than being adopted. Fourth, on the one hand the findings indicated stability of individual differences, and on the other a slight positive growth of the group as a whole. These findings do not take into account the fact that the teacher's standards might change from Year 1 to Year 2. It might be that teachers expect higher levels of adaptive behavior in children and their relationship with children in Year 2 than in Year 1 in order to rate the children the same way in Year 2. If the standards set by the teachers are higher, there might be an improvement in children's behavior, even though they do not seem to change according to teacher ratings (cf. prosocial and anxious behaviors). Independent observations that are blind to class level can solve this problem.

Implications for Practice

The study has highlighted the prediction of teacher-child relationship at the individual level and classroom emotional support at the class level on teachers' perception of children's behavioral adjustment in pre-primary schools over one year period. This study suggests that an initial teacher-child relationship characterized by conflict and lack of emotional support at individual level and at classroom level is a significant predictor for aggressive behavior during pre-primary school, which may last longer than observed in the current study. Furthermore, this study suggests that teacher-child conflict and aggressive behavior relate in bidirectional way. In addition, it suggests that many children who experience a difficult relationship with teacher (such as conflict) in class may affect the classroom atmosphere negatively, which in turn can have a negative influence on the children who are less difficult. Persistence of a coercive relationship between teacher-child conflict and aggressive behavior may cause peer rejection, truancy, perform poorly academically, and/or become more aggressive, which may lead into maladaptive behaviors during their school career. Teachers should therefore be aware that the classroom environment, especially teacher-child interaction at both the individual and the class level, may negatively affect a child even when they have a positive relationship at dyadic level.

To enhance positive behavioral adjustment in children, teacher training should focus on the importance of establishing a good teacher-child relationship at the outset and providing a positive classroom environment for the children. We suggest that the teacher-training curriculum should include contents of quality of the teacher-child relationship at individual level and at class level. Furthermore, given the knowledge of children's behavioral trajectories, preventive interventions can be targeted to improve teacher-child relationships,

which is more likely to stimulate positive behavioral adjustment for children. Specific attention to early teacher-child relationships at individual level and teacher-child interactions at class level should focus on helping children who are showing early signs of behavioral adjustment problems, notably aggressive behavior.

Chapter 5

Aggressive and Prosocial Children's Evaluation and Justification of Transgressions and their Relationship to the Teacher-child Relationship in Tanzania

Manuscript submitted

Abstract

This cross-sectional study examines the evaluation and justification of transgressions in the moral and non-moral domain of aggressive and prosocial children and their relationship to the teacher-child relationship. Eighty children from ten pre-primary schools, 40 nominated as prosocial and 40 as aggressive by their peers, evaluated hypothetical transgression stories in the moral and non-moral domain. Children from both groups evaluated moral transgressions as more wrong than non-moral transgressions. Children nominated as prosocial more frequently evaluated the moral transgressions as wrong compared to children nominated as aggressive. Children displaying prosocial behavior more frequently justified moral transgressions on the basis of intrinsic factors, whereas both groups more frequently justified non-moral transgressions on the basis of non-moral factors. Evaluation in the moral domain and teacher-child closeness were related to children's peer-nominated social behavior. Evaluation in the moral domain partly mediated the relationship between teacher-child closeness and children's social behavior. This implies that the way teachers deal with transgressions in the moral and non-moral domain may affect the relationship with the child and the child's behavior. The implications of these findings are discussed.

Introduction

Recently, I had a telephone conversation with my 9-year old daughter. The conversation was as follows: (Me) How was your day at school? (Daughter) My day at school was bad. (Me) Why? (Daughter) The teacher whipped me (using a small/thin stick), because I did not put on a neck-tie. (Me) You should always put on a neck-tie because it is part of your school uniform; by not putting on a neck-tie you violated the school rule. (Daughter) Mom!!!! I thought you could have sided with me against my teacher's whip because it was not fair to whip me simply for not putting on a neck-tie. It was only one day - today - which I did not put on a neck-tie. For sure, it was unfair for the teacher to punish me. She should have given me a warning because it was a first time mistake. (Me) I hope next time you will remember to put on a neck-tie.

According to the child quoted above, whipping (using a stick) was unfair in this case. Whipping inflicts physical harm. The Tanzanian Law of the Child Act No. 21 (2009) prohibits whipping, which underlines the seriousness of the teacher's punishment. The child was aware that not putting on a neck-tie is a violation of a school rule. However, in her view the violation of this particular school rule merited a warning (in this case, because it was the first time). An action which deliberately inflicts harm on others is a moral transgression (Nucci, 1981; Nucci & Turiel, 1978; Smetana, 1981, 1999; Turiel, 1983, 2008). Moral transgressions are violations of the system of rules that regulates social interaction between individuals on the basis of justice, rights, fairness, and welfare of others (so beating others is wrong). Thus if a teacher whips a child, this can be regarded as a moral transgression. Not putting on a neck-tie on the other hand can be seen as a conventional transgression. The conventional domain involves issues of accepted customs and traditions such as uniformity in behaviors, expectations about appropriate behaviors, values, and norms which guide social interaction with others in a particular society or institution, an example being 'not putting on a neck-tie, which is part of the school uniform, is wrong' (see also Smetana, 1981, 1998). Furthermore conventional rules, unlike moral rules, can be modified and/or changed (Nucci, 1981).

The conversation above exemplifies the perception of moral and non-moral transgressions among children in school. In this example, a conventional (non-moral) transgression by the child was responded to with a moral transgression by the teacher which was recognized as such by the child. This was an important starting point for an exploration of how young children in Tanzania evaluate and justify transgressions in the moral and non-

moral domains. Evaluation means judging or considering actions as right or wrong. Justification refers to the explanation as to why the action is considered to be right or wrong.

Research has established a relationship between teacher-child relationships and children's behavioral adjustment (Baker, 2006; Hamre & Pianta, 2001; Myers & Pianta, 2008). Our example also shows that this relationship might be affected by children's domain interpretation of their teachers' behaviors. A relationship between domain interpretation of transgressive behavior and prosocial and antisocial behavior has been established in children and adolescents (Arsenio & Lemerise, 2004; Nucci & Herman, 1982; Smetana, 1995). However, research on the relationships between children's domain interpretation, the teacher-child relationship, and children's social behavior is lacking. This study aims to investigate these relationships in a sample of pre-primary school children in Tanzania.

Evaluation and Justification of Transgressions in the Moral and Non-moral Domain

Research has shown that children as young as three can evaluate and justify prototypical moral, conventional, and personal actions (Nucci & Turiel, 1978; Smetana, 1981, 1985, 1999; Turiel, 2002; Yau & Smetana, 2003). For example, Nucci and Turiel (1978) pointed out that young children aged 2.10 to 5.2 years evaluated moral transgressions as wrong and their justifications were based on factors intrinsic to actions such as harming others physically or psychologically; their evaluation and justification of conventional transgressions were based on whether societal rules were violated or not. In other words, 'whether the transgression is wrong or not, is evaluated based on the beliefs of a particular society' (see also Gasser & Keller, 2009; Malti et al., 2009; Nucci & Turiel, 1978, 1993; Smetana, 1981, 1985; Smetana et al., 1999; Turiel, 2008). After the age of four or five years, children's evaluation of moral and non-moral transgressions becomes much more systematic (see also Yau & Smetana, 2003). Between the ages of six and ten, children use rules more systematically in evaluating moral and non-moral actions (for example, transgressions) (Loke, Heyman, Forgie, McCarthy, & Lee, 2011). This implies that as children grow older, they learn to generalize and to reason why the action is right or wrong. Children have been reported to evaluate personal transgressions (choosing a friend, for instance), as individual matters rather than actions that are right or wrong because they do not require the approval of adults such as parents or teachers (Killen & Smetana, 1999; Nucci, 1981; Nucci & Herman, 1982; Yau & Smetana, 2003). In the present study conventional and personal transgressions are regarded as non-moral transgressions.

All the studies mentioned above were carried out in a Western context. No study has been conducted of children's evaluation and justification of moral and non-moral transgressions in the Tanzanian context, a society whose cultural norms differ from those in Western cultures. Tanzania is predominantly a collectivistic, conformist society, which practices an eclectic (authoritarian and authoritative) child rearing approach (Shavega, Brugman, & van Tuijl, 2014). Being a dominantly collectivistic society, it expects children to be obedient and pay respect to authority figures such as parents and teachers, and puts emphasis on cooperation and interpersonal relationships (see also Song, Smetana, & Kim, 1987; Yau & Smetana, 2003). Because obedience in children is strongly encouraged in the Tanzanian culture, children may justify not only conventional but also moral transgressions on the basis of adult (dis)approval instead of intrinsic factors, i.e. whether actions harm others physically and/or psychologically. In sum, this cultural orientation may affect children's ability to evaluate and justify moral and non-moral transgressions.

We extended the research on domain evaluation and justification by relating it to children's social behavior in pre-primary schools. In the current study, one of our goals is to examine the relationship between children's evaluation and justification in the moral and non-moral domain and children's social behaviors in pre-primary schools as nominated by peers.

The relationship between children's evaluation and justification in the moral and non-moral domain and their social behavior

In the social context of preschool, children with prosocial behavior are regarded as well-adjusted, while children with aggressive behavior are regarded as poorly adjusted (Baker, 2006; Fantuzzo, Bulotsky-Shearer, Fusco, & McWayne, 2005). Prosocial behavior refers to positive social interactions that promote harmonious relationships with others, such as helping, sharing, cooperating, and comforting (Carlo, Fabes, Laible, & Kupanoff, 1999; Eisenberg, Cumberland, Guthrie, Murphy, & Shepard, 2005; Scourfield, John, Martin, & McGuffin, 2004). Others benefit from prosocial behavior, which has been also reported to share some characteristics with moral acts (Carlo et al., 1999). In contrast, aggressive behavior refers to behavior that harms others physically and/or psychologically (Goldstein, Tisak, & Boxer, 2002; Nelson, Robison, & Hart, 2005; Vitaro, Brendgen, & Barker, 2006).

Research has shown that children's evaluation of moral and non-moral transgressions plays a fundamental role in their behavioral regulation (Arsenio & Lemereise, 2004). Smetana (1985) states that in kindergarten children's evaluation of transgressions in the moral and non-moral domain plays a significant role in regulating their behavior. Moral and non-moral

hypothetical transgression stories have been used to explore children's ability to evaluate and justify these types of transgression. Studies have revealed that children in kindergartens and adolescents who evaluated moral transgressions in the direction of the non-moral (conventional or personal) domain have been reported to display aggressive behavior (Leenders & Brugman, 2005; Malti, Gasser, & Buchman, 2009; Nucci & Herman, 1982). Nucci and Herman (1982) have argued that children in preschool who display aggressive behavior are looking for authority sanctions to guide their decision making. Conversely, a child who displays prosocial behavior may focus on the harm produced by a moral transgressor (Gasser & Keller, 2009; Harvey, Fletcher, & French, 2001; Leenders & Brugman, 2005; Nucci & Herman, 1982). The present study focuses on young children aged between five and seven years, and examines the relationship between children's evaluation and justification of transgressions in the moral and non-moral domain and their social behavior (prosocial versus aggressive) as nominated by peers. Moreover, the study was extended to the teacher-child relationship.

Relationship between children's evaluation and justification in the moral and non-moral domain and the teacher-child relationship

Research has shown that adult-child interactions may have implications for children's evaluation of moral and non-moral transgressions (Lagattuta, Nucci, & Bosacki, 2010). According to Buzzelli (1996), children experience the concepts of moral and non-moral through their relationship with their teachers, more specifically through teacher-child discourse. Teachers guide children in attaining acceptable behaviors in the school context which are assumed by the teachers as morally and/or conventionally right. Teachers are responsible for ensuring children's welfare, protecting their rights, and helping them to treat each other fairly (Smetana, 1995). However, empirical literature on the relationship between children's evaluation and justification in the moral and non-moral domain and the teacher-child relationship is scarce. This gap will be covered in this study.

Some studies point to characteristics of teachers and children that can be assumed to be linked to the teacher-child relationship. Teacher's guidance on treating each other fairly may influence the way children evaluate and justify the violation of moral and non-moral rules. This may subsequently affect children's behavioral adjustment because children will normally view teachers' guidance as right. Narvaez and Lapsley (2008) suggest that a teacher is expected to model respectful behavior. They insist that a caring teacher is more likely to encourage respectful behaviors and discourage aggressive behaviors in children, while a harsh

teacher may implicitly encourage or neglect of moral and non-moral rules and stimulate aggressive behaviors in children.

However, the child's behavior can also be the starting point for a reaction from the teacher: if a child violates moral rules (e.g., hits other children) and/or school norms (e.g., the child does not wear a neck-tie, or is late arriving in class), this may affect her/his relationship with the teacher(s). The teacher may dislike the behavior and punish the child. Studies have shown that a child displaying aggressive behavior may violate both moral and conventional rules, which can lead to a disharmonious, conflictual relationship between the child and authority figures such as teachers (Gasser & Keller, 2009; Nucci & Herman, 1982). Nevertheless, we would argue it is the task of the teacher to establish a harmonious, close relationship with every child and guide each child in regulating her/his own behavior by stimulating moral development through helping them to evaluate transgressions in the moral and the non-moral domain and to understand and present justifications accordingly. This educational viewpoint implies that children's evaluation and justification in the moral and non-moral domain are related to the teacher-child relationship, and children's social behavior. To the best of our knowledge there is no empirical study available on this proposed relationship.

Relationship between the teacher-child relationship and children's social behavior

Evidence from the literature showed that the teacher-child relationship is associated with children's behavior (Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta, 1994; Pianta & Stuhlman, 2004). Closeness between a teacher and a child has been reported to be associated with prosocial behavior in children, whereas conflict has been reported to be associated with aggressive or reticent behavior. For example, children reported as experiencing a poor-quality relationship with their teacher(s) were found to display difficult behaviors, such as aggressive behaviors in the subsequent years in school (Hamre & Pianta, 2001; Ladd & Burgess, 1999; Pianta & Stuhlman, 2004). Other studies reported that a close relationship between a teacher and a child was associated with a decrease in aggressive behavior by the child in the subsequent years in school (Stuhlman & Pianta, 2001).

In sum, through their relationships with children, teachers are expected to help them to respect moral and non-moral rules in school and support them in distinguishing between moral and non-moral transgressions. Moral transgressions are more serious than the violation of conventional rules. If a teacher's punishment is too harsh, that is to say inappropriate given the

child's transgression (e.g., whipping for not wearing a neck-tie), this may affect the teacher-child relationship in a negative way.

This study examines the relationships between children's evaluation and justification of transgressions in the moral and non-moral domain, children's social behavior, and the teacher-child relationship. Empirical evidence shows that a harmonious teacher-child relationship is associated with social behavior (i.e., prosocial or aggressive behaviors) in children (Hamre & Pianta, 2001). And we may assume that these children's social behaviors are related to their evaluation and justification of transgressions in the moral and non-moral domain (Gasser & Keller, 2009; Leenders & Brugman, 2005). We furthermore hypothesize that their evaluation and justification of transgressions in the moral and non-moral domain are associated with the teacher-child relationship, although currently there are no empirical studies available on this issue. This hypothesis is based on the role of the teacher: to educate and correct children's thinking, such as pointing out the consequences of maladjusted behavior. Furthermore, we assume that a child is an active, co-constructive and reflective subject; he/she does not only receive messages from the teacher, but also interprets them and relates them to previous experiences. For example, in the story above the child thought that being whipped for simply not putting-on a neck-tie was unfair (i.e., morally wrong). In the light of this assumption, it is important to explore whether children's evaluation and justification of transgressions in the moral and non-moral domain mediate the relationship between the teacher-child relationship and children's social behavior.

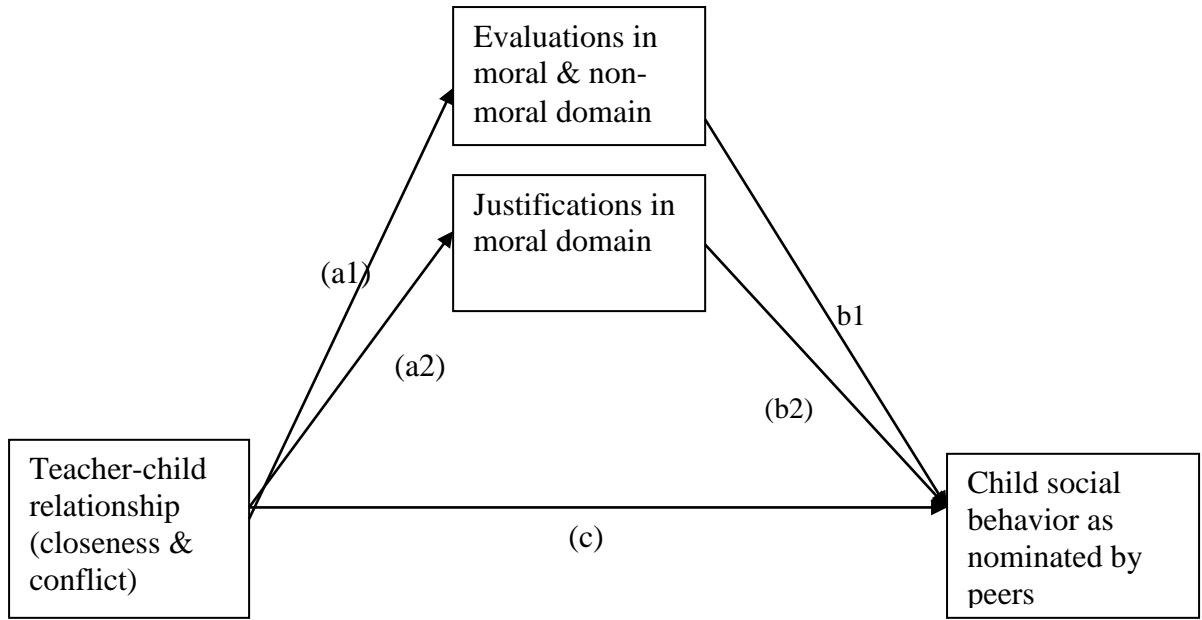


Figure 1: Conceptual framework of the hypothesized relationships between variables

The conceptual framework in Figure 1 presents the hypothesized relationships in the current study. The dependent variable is children's social behavior as nominated by peers. The independent variable is the teacher-child relationship (closeness and conflict), and the mediator variables are children's evaluations and justifications of transgressions in the moral and non-moral domain.

The arrows a1, a2, b1, b2 and c form a process model for mediation. Arrow (a1) indicates a relationship between the teacher-child relationship and children's evaluation of transgressions in the moral and non-moral domain. Arrow (a2) indicates a relationship between the teacher-child relationship and justification of moral and non-moral transgressions.

Arrow (b1) indicates a relationship between children's evaluations in the moral and non-moral domain and children's social behavior, and (b2) indicates a relationship between children's justifications in the moral and non-moral domain and children's social behavior as nominated by peers (Arsenio & Lemerise, 2004; Nucci & Herman, 1982). Arrow (c) represents a direct effect of the teacher-child relationship on children's social behavior, which has been widely discussed elsewhere (Hamre & Pianta, 2001; Birch, & Ladd 1997; O'Connor, Collins, & Supplee, 2012). This completes the mediation model.

The Present Study

We examined Tanzanian pre-primary school children's evaluations and justifications of transgressions in the moral and non-moral domain and whether their evaluations and justifications showed the same pattern as in Western cultures. In the latter pattern, transgressions in the moral domain are considered both by children displaying prosocial behavior as well as those displaying aggressive behavior as more wrong (more non-permissible, more serious, less authority-contingent, and more generalizable) than transgressions in the non-moral domain. The pattern further implies that the difference in the way moral and non-moral transgressions are evaluated is greater in children displaying prosocial behavior than in children who display aggressive behavior, as nominated by their peers. Furthermore, the study aims to examine whether children's evaluation and justification of transgressions in the moral and non-moral domain relate to their social behavior and teacher-child relationship. The study is guided by three main research questions: first, are Tanzanian children (aged between five and seven years old) able to evaluate and justify hypothetical transgression in the moral and non-moral domain differently? Second, is children's evaluation of transgressions in the moral and non-moral domain related to their social behavior and the teacher-child relationship? And third, is the relationship between children's social behavior and the teacher-child relationship mediated by children's evaluation and justification of transgressions in the moral and non-moral domain? On the basis of previous research, the following hypotheses are tested in this study.

1. We expected children nominated by classmates as prosocial or aggressive to evaluate moral transgressions as being more wrong than non-moral transgressions. Furthermore, we expected them to justify moral transgressions on the basis of intrinsic factors and to justify non-moral transgressions on the basis of punishment avoidance, conventional acts or personal preferences. In addition, we expected differences between the two groups: differences between the evaluation of moral and non-moral transgressions will be greater in children nominated as prosocial than in children nominated as aggressive; children displaying prosocial behavior were expected to justify moral transgressions more frequently on the basis of intrinsic factors while children exhibiting aggressive behavior were expected to justify moral and non-moral transgressions more frequently on the basis of non-moral factors.
2. We expected children's evaluation and justification of transgressions in the moral and non-moral domain to relate strongly and positively to their social behavior (peer nomination) and teacher-child closeness, and negatively to teacher-child conflict.

3. Children's evaluation and justification of transgressions in the moral and non-moral domain were expected to mediate the relationship between the teacher-child relationship (closeness and conflict) and children's social behavior.

Method

Participants

The study was carried out among pre-primary school children in Ilala municipality, Dar es Salaam region, in Tanzania. This was a two-wave study with a one-month interval to find out whether children's responses on moral and non-moral transgressions were consistent. A sample of 10 schools, 10 teachers, and 80 children (40 children nominated as displaying aggressive behavior and 40 children nominated as displaying prosocial behavior) participated in this study. Children in both the prosocial and in the aggressive group were evenly distributed with regard to gender (50% male and 50% female) respectively. There was no attrition of participants in the second wave. The age of the children ranged between five and seven years at the first measurement ($M = 6.04$, $SD = .60$). All teachers were female.

Pilot Study

A pilot study was conducted to test whether children between the ages of five to seven could respond to an interview. We also aimed to test whether children could understand the stories and whether the stories would elicit responses (evaluating and justifying transgressions in the moral and non-moral domain). The 16 children who participated in the pilot study responded to all hypothetical transgression stories. These children did not participate in the main study.

Procedure

Permission to conduct the study was issued by the Regional Administrative Secretary (RAS). Teachers gave verbal consent to participating in the study. Children who participated in the study were allowed by their parents following their teachers' verbal consent.

Selection procedure

First, we selected children who were able to respond to questions about prosocial and aggressive behaviors. Of the 379 children from 10 classes who were present on that particular day, 276 passed the selection process. All the children were first asked to mention as many prosocial behaviors (e.g., sharing, helping, and comforting), and aggressive behaviors (e.g.,

fighting, hitting, and/or bullying other children, using abusive language) they had experienced in their class as they could. Only children who were able to mention behaviors in both categories (prosocial and aggressive) were considered for participation in the nomination process. Children who did not mention any behaviors (e.g., shy children) were excluded from the study because we assumed that they could not respond effectively during the interview to questions concerning the evaluation and justification of moral and non-moral transgressions. In total 103 children (27%) were not accepted for participation. This procedure of peer nomination has also been used by other researchers (Babcock, Marks, Crick, & Cillessen, 2014; Gasser & Malti, 2012; Verlinden et al., 2014).

Second, 276 children from a total of 379 participated in the oral interview in the nomination phase. The participation percentage ranged between 60% and 82% per class ($M = 74$, $SD = 7.36$). The 276 selected children were interviewed to nominate peers showing more prosocial or more aggressive behaviors. Each child was individually interviewed in a separate classroom. During the interview the child was asked to nominate peers who showed either prosocial or aggressive behavior in their class. We emphasized that for a child to be regarded as displaying prosocial or aggressive behavior, the behavior should occur repeatedly. Children were first asked to nominate peers who displayed prosocial behavior followed by peers who displayed aggressive behavior. Each interview lasted for five to seven minutes. Children were assured that the names they gave would be treated as confidential. Children who were reported as displaying prosocial or aggressive behavior were recorded through tallies. A few children who were mentioned in both categories were excluded. Children who received many tallies in one of the categories were labeled as children showing prosocial or aggressive behavior respectively. However, children within each group were not homogeneous.

Third, children nominated as displaying prosocial behavior ($N = 40$) and children nominated as displaying aggressive behavior ($N = 40$); 8 children from each class were asked to evaluate and justify hypothetical transgression stories in the main study. These children were interviewed individually in a separate classroom one week after the nomination phase. The interview was arranged after class hours to avoid interruption of lessons. The first author conducted the interview and coded the responses for each child. The interview lasted for 25 to 30 minutes.

The first author and a research assistant interviewed 20% ($N = 16$) of the participants for inter-observer reliability. The inter-observer intra-class correlation coefficients for the evaluation of transgressions in the moral and non-moral domain were .96 and .94 respectively. Moral justifications based on intrinsic and non-moral factors were .86 and .92 respectively and

non-moral justifications based on intrinsic and non-moral factors were .96 and .98 respectively. According to Cicchetti et al. (2006) this is an excellent agreement.

Measures

Children's evaluation and justification of transgressions in the moral and non-moral domain

Eight hypothetical transgression stories were used to elicit children's evaluations and justifications of moral and non-moral transgressions. Four hypothetical stories focused on moral transgressions: hitting, teasing, stealing, and not helping a young girl who was injured. Two hypothetical stories that focused on conventional transgressions were: not greeting an elderly woman and calling a teacher by her first name. Two stories focused on personal transgressions: choice of playmates and choice of place to play during recess time. We combined conventional and personal transgressions and regarded them as representing the non-moral domain. The images and materials used in the stories (for example, children making structures in the sand) were appropriate to the Tanzanian cultural context. All of the hypothetical transgression stories were adapted from previous studies and contextualized for the present study. For example, stories about hitting, stealing, teasing, and calling a teacher by her first name instead of title were adapted from Killen and Smetana (1999), Nucci and Turiel (1978), Smetana (1981, 1985) and Smetana et al. (1999). Stories about choosing a friend and choice of a place to play were adapted from Yau and Smetana (2003). A story about not greeting an elderly woman was adapted from Song et al. (1987) and a story about not helping a child who had injured her knee was adapted from Miller, Eisenberg, Fabes, and Shell (1996). Each story described the unique occurrence of a transgression: some were depicted as occurring in the classroom context, while other occurred outside the classroom. All stories depicted a Tanzanian context.

Story-telling to children is not a new phenomenon in Tanzania. Stories have traditionally been used to educate children. Elders are responsible for telling real and hypothetical stories aimed at teaching children about obedience, hard work, tolerance, fun, and respect for elders, in this cultural context (see also Salakana, 1996). National television (Tanzania broadcasting cooperation) is currently broadcasting throughout the country a story-telling program which attracts many children. This justifies our use of this measure in a Tanzanian cultural context. An interviewer read each hypothetical story to the child and the child then responded to the following questions:

1. “Is it wrong or right to do such a thing?” This addressed the permissibility/acceptability of the action (evaluation 1). The responses to this question were coded as follows: ‘wrong’ was assigned a score of one (1) and ‘right’ was assigned a score of zero (0).
2. How bad is it to do such a thing? This question addressed the severity of the action (evaluation 2). Responses regarding severity were coded on a 3-point scale ranging from 1 (not at all bad), 2 (a little bad), and 3 (very bad).
3. “Why is it bad/not bad?” This question addressed their justification for their evaluation. Coding of the justification of the responses for wrongness was adapted from previous research (Smetana et al., 1999). The answers were grouped in seven classes as follows: (1) Intrinsic consequences included child’s responses such as it hurts, causes harm or loss, makes other children feel sad, etc. (2) Punishment avoidance and authority prohibition included responses such as an action is wrong because it is forbidden by the teacher/parent; it is against school rules, or will result in punishment by authorities e.g., teachers or parents. (3) Conventional act: appeal to politeness, status differences, or cultural or local norms or expectations e.g., she is older than you, so she knows better than you; it is impolite; that is the way we do it here; the action is wrong because it violates social norms. (4) Personal preferences; action reflects personal choice or individual preferences e.g., because she likes it; it is OK to choose your own friend. (5) Mixed personal; the action is personal as long as it does not have practical consequences e.g., it is up to her/him as long as it is safe. (6) Prudential, the action has consequences for the child’s health. (7) Undifferentiated, the action is bad or wrong for unspecified reasons. The child’s response about her/his justification matched with at least 1 among the 7 classes, which was assigned a score of 1 and the rest were assigned a score of 0.
4. If nobody knew that the action would take place, would it then be right or wrong? This question addressed the absence of rules (evaluation 3). Responses about the absence of rules were coded as follows: ‘wrong’ was given a score of one (1) and ‘right’ was assigned a score of zero (0).
- 5 If the teacher did not tell the child that the action would not be acceptable, would it be right for the child to....? This question addressed children’s evaluation of authority contingency (or authority independence) such as adult approval (evaluation 4); a ‘wrong’ response was assigned a score of one (1) and ‘right’ was assigned a score of zero (0).
6. If everybody were doing such things, would it then be wrong or right? This question addressed generalizability (evaluation 5). ‘Wrong’ was given a score of one (1) and ‘right’ was given a score of zero (0).

7 Have you ever been involved in this action? If yes how often? This question addressed the child's involvement in the transgression. To investigate how often the child was involved in the transgression we used a 4 point Likert scale, ranging from "never" (1) to "always" (4).

Evaluation items (20) addressed non-permissibility, absence of rules, authority independence, and generalizability, while response on severity focused on the evaluation of being not at all bad, bad, and very bad. Cronbach's alpha's ranged from .88 for evaluation in the non-moral domain at both time points to .93 for evaluation in the moral domain at Time 2. Because scoring for the severity items differed (1, 2, 3 vs 0/1 of the other items), we transformed means for severity variables to 0-1. Response on the behavioral prevalence item was analyzed separately. Justification categories (reasons for evaluation, e.g., why is it wrong) for each justification criterion were summed from the moral and non-moral separately. The responses were presented on the basis of the frequency with which intrinsic factors, punishment avoidance, conventional acts, personal preferences, mixed personal, prudential, and undifferentiated reasons were reported and were differentiated according to domain. When answers were based on the welfare of others, such as fairness and rights of others, the justification was scored as intrinsic. When justification was based on customs, traditions, punishments, rule of authority or personal factors, the justification was scored as non-moral (see also Leenders & Brugman, 2005). The sum scores of justification based on intrinsic and non-moral factors were computed separately. A high score in each category indicated more frequent use of justifications in the moral and/or non-moral domain and a low score indicated less frequent use of justifications in the moral and/or non-moral domain respectively.

Student-Teacher Relationship Scale (STRS)

STRS is a measure designed to measure teacher's perceptions about her/his relationship with a child (Pianta, 1994). Teachers rated their relationship with the children who were nominated by their peers as showing prosocial or aggressive behavior. The rating was done during the first stage of the hypothetical transgression stories interview. The measure comprises three constructs: closeness, conflict and dependency (Pianta, 2001). Two constructs (closeness and conflict) were adapted for this study (see also Shavega et al., 2014). Dependency was not included. Closeness refers to the extent to which a teacher experiences a harmonious relationship with the child in school, an example being "Working with this child gives me self-confidence". Conflict refers to the extent to which a teacher experiences misunderstanding with the child in school, for example "This child argues a lot with me". All items were rated on a 5-point Likert scale ranging from "never" (1) to "always" (5) (mean

scores were calculated). These measures have been used earlier in the Tanzanian context and their internal consistency was sufficient; for closeness Cronbach's alpha was .74 and for conflict .63 (Shavega et al., 2014). For the number of items, means and reliability for this study see Table 1 and for bivariate correlations see Table 4.

Preschool Behavior Questionnaire (PBQ)

Teachers reported on children's behavioral adjustment using the PBQ (Behar & Stringfield, 1974; Tremblay, Vitaro, Gagnon, Piché, & Royer, 1992). The rating was done at the first stage of the hypothetical transgression stories interview. We used two subscales for behavioral adjustment: prosocial and aggressive behavior. Prosocial behavior comprised items such as "This child likes sharing", while aggressive behavior included items such as "This child fights with other children". The items were rated on a 3-point Likert scale with the options "does not apply" (0), "sometimes applies" (1), and "always applies" (2). For the number of items, means and reliability see Table 1 and for bivariate correlations see Table 4.

Table 1

Descriptive information: number of items, Cronbach's alpha, Mean and SD of teacher-child relationship and children's behavior as rated by the teacher for children displaying prosocial (n=40) and aggressive (n=40) behavior as nominated by peers, and effect size (Cohen's d) for the difference between these two nominated groups.

Variables	n(items)	α	Prosocial children as nominated by peers <i>M(SD)</i>	Aggressive children as nominated by peers <i>M(SD)</i>	Cohen's <i>d</i>
<i>Teacher-child relationship</i>					
Closeness	6	.95	4.44(.36)	2.26(.79)	3.55
Conflict	5	.80	2.27(.40)	3.27(.69)	-1.77
<i>Children's behavior as rated by the teachers</i>					
Prosocial	8	.80	1.67(.28)	.91(.23)	2.57
Aggressive	5	.73	.60(.34)	1.39(.30)	-2.46

Peer nomination

Peer nomination was based on peer perception of prosocial or aggressive behavior, which was recorded through tallies. Tallies ranged between 10 and 16 for prosocial children

and 10 and 25 for aggressive children, which was partly due to the number of children who participated in the nomination process in each class. The mean nomination score for each child per class was calculated, ranging from 10 to 12. During standardization children nominated as prosocial were assigned a positive score and children nominated as aggressive were assigned a negative score. We calculated the single-item reliability for prosocial behavior and for aggressive behavior using a procedure which has been used by other researchers (Babcock et al., 2014; Verlinden et al., 2014). In this study, Cronbach's alpha coefficient for prosocial behavior was .72 and for aggressive behavior was .88. According to the literature (Babcock et al., 2014), reliability for single-item for peer nomination is suggested to be .60 and above. These reliabilities were therefore substantial, indicating that peer raters agreed more on aggressive behaviors and less, but still sufficiently, on prosocial behavior.

Data Analysis Plan

We calculated the means and standard deviations for the evaluation criteria for each domain at both time points. Moral evaluation refers to responses in the moral domain (4 stories) and non-moral evaluation refers to responses in the non-moral domain (4 stories). Because children were re-interviewed after a one-month interval, the results are presented at both time points for each domain, differentiated for children showing prosocial and children showing aggressive behavior. We ran mixed between-within subject analysis of variance to assess the impact of children on evaluation and justification in the moral and non-moral domain across two time points. Spearman's rank order correlations were used to investigate correlations among the variables and the stability of children's evaluation and justification in the moral and non-moral domain from Time 1 to Time 2. Stability was used for validation purposes.

We ran hierarchical regression analyses to examine whether the teacher-child relationship and evaluation and justification in the moral and non-moral domain were related to children's social behavior. Teacher-child closeness was entered as a predictor variable in Step 1. Evaluation in the moral domain and justification in the moral domain based on intrinsic factors were entered at Step 2. Bootstrapping procedures (using the process macro for SPSS; Model 4; Hayes, 2012; Preacher & Hayes, 2008) were used to examine whether the indirect effect of the teacher-child relationship through children's evaluation and justification in the moral domain based on intrinsic factors were significant. In addition, conflict and non-moral evaluation and justification were not included in the model because they were not significantly correlated with other variables. Justification in the non-moral domain based on

intrinsic factors was not included in the model because it has a perfect negative relationship with justification in the moral domain based on non-moral factors. Data were analyzed using the IBM SPSS 20 version.

Results

Reliability

The evaluation and justification of transgressions in the moral and non-moral domain were measured in two waves with a one-month time-interval. The internal consistency (Cronbach's alpha) of the evaluation scales was good, ranging from .88 to .93. We compared children's evaluation and justification of transgressions in the moral and non-moral domain between the two waves to obtain indexes of test-retest reliability. Spearman's correlation coefficients were computed. The stability of evaluations between the two waves ranged from moderate to strong: evaluations in the moral and non-moral domains were stable ($r = .81, p < .01; r = .94, p < .01$ respectively). Justifications in the moral and non-moral domain based on intrinsic factors were moderately stable ($r = .49, p < .01; r = .44, p < .01$) respectively, as were justifications in the moral and non-moral domain based on non-moral factors ($r = .46, p < .01, r = .41, p < .01$ respectively). Means of evaluations in the moral and non-moral domain for children displaying prosocial and aggressive behaviors are presented in Table 2.

Evaluation and justification of transgressions in the moral and non-moral domain

In line with our first hypothesis, pre-primary school children, both children nominated as prosocial and children nominated as aggressive by their peers, evaluated moral transgressions as more wrong than non-moral transgressions at both time points (see Table 2). Furthermore, these groups differed from each other in their differential evaluation of transgressions in the moral and non-moral domain. On average, as expected, the differences between the evaluation of transgressions in the moral and non-moral domain were larger within the group of children displaying prosocial behavior than within the group of children displaying aggressive behavior. Cohen's effect size values (d) suggested strong effects (see Table 2). Children nominated as prosocial evaluated transgressions in the moral domain as more wrong than children nominated as aggressive at both time points. Transgressions in the non-moral domain were evaluated as more wrong by the prosocial group than by the aggressive group at Time 1 but not at Time 2.

Children displaying prosocial behavior mentioned many more intrinsic factors as justifications for transgressions in the moral domain than children displaying aggressive behavior, whereas the latter group used non-moral factors more often to justify moral transgressions than their prosocial counterparts. In the non-moral domain, children displaying prosocial behavior infrequently used intrinsic factors in their justifications, but slightly more than children displaying aggressive behavior did. Both types of children frequently used non-

moral factors to justify non-moral transgressions. Another unexpected finding which does not answer any hypothesis but is worth reporting, was that children in both groups justified moral and non-moral transgressions more frequently on the basis of non-moral factors, except for children displaying prosocial behavior at Time 1. This finding contradicts the pattern found in Western countries. However, children nominated as displaying aggressive behavior justified moral and non-moral transgressions more frequently on the basis of non-moral factors than did their prosocial counterparts (Table 2).

Table 2

Mean and Standard Deviation of evaluation and justification of moral and non-moral transgressions, and behavioral prevalence for children displaying prosocial or aggressive behaviors as nominated by peers; effect size (Cohen's d) for the difference between these two nominated groups.

Scales	Moral domain			Non-moral domain		
	Prosocial children	Aggressive children	Cohen's <i>d</i>	Prosocial children	Aggressive children	Cohen's <i>d</i>
	<i>M(SD)</i>	<i>M(SD)</i>		<i>M(SD)</i>	<i>M(SD)</i>	
<i>Evaluation scales</i>						
Evaluation T1	.84(.18)	.58(.30)	1.09	.67(.17)	.56(.21)	.57
Evaluation T2	.89(.15)	.64(.31)	1.02	.67(.15)	.65(.22)	.11
<i>Justification scales</i>						
Intrinsic factor T1	2.02(1.12)	.22(.61)	1.99	.05(.22)	.00	.32
Intrinsic factor T2	1.92(.97)	.70(.68)	1.46	.27(.71)	.22(.77)	.07
Non-moral factors T1	1.97(.12)	3.77(61)	-1.99	3.25(.71)	3.12(.46)	.22
Non-moral factors T2	2.50(.19)	3.62(.63)	-1.22	3.70(.72)	3.87(1.01)	-.23
<i>Behavioral prevalence</i>						
Behavioral prevalence T1	1.02(.08)	2.61(.35)	-6.26	1.22(.26)	2.25(.24)	-4.11
Behavioral prevalence T2	1.16(.23)	2.29(.27)	-4.51	1.51(.26)	2.01(.29)	-1.81

T1 refers to time point one

T2 refers to time point two

Results of mixed between-within subjects analysis of variance

Mixed between-within subjects analysis of variance was conducted to assess the impact of two children nominated as displaying prosocial or aggressive behavior on evaluations and justifications in the moral and non-moral domain across two time points. We found two significant interaction effects; both for justifications in the moral domain (see Table 3). First, an interaction effect of time and children's social behavior as nominated by the peers (prosocial or aggressive) on intrinsic-factor justifications for moral transgressions. For the interaction effect, see Figure 2. Another interaction effect of time and children's social behavior as nominated by peers was found on non-moral-factor justifications for moral transgressions. For the interaction effect see Figure 3. The lines do not cross but means of each group differs and over time the lines differ in direction, showing an increase or a decrease.

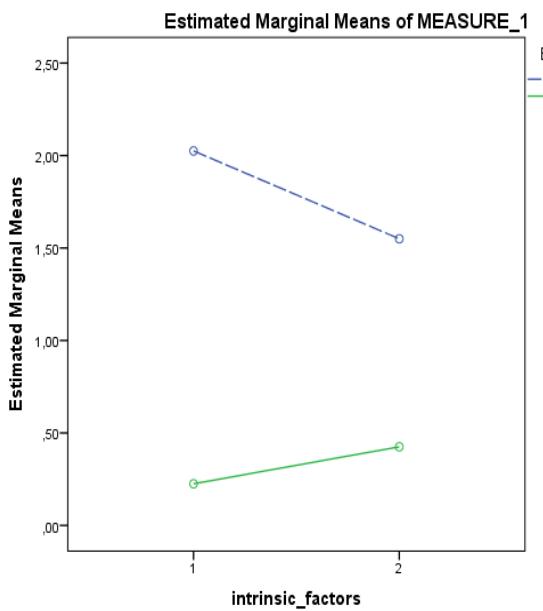


Figure 2 Interaction effect of time and children's social behavior as nominated by peers (prosocial or aggressive) on intrinsic-factor justifications for moral transgressions

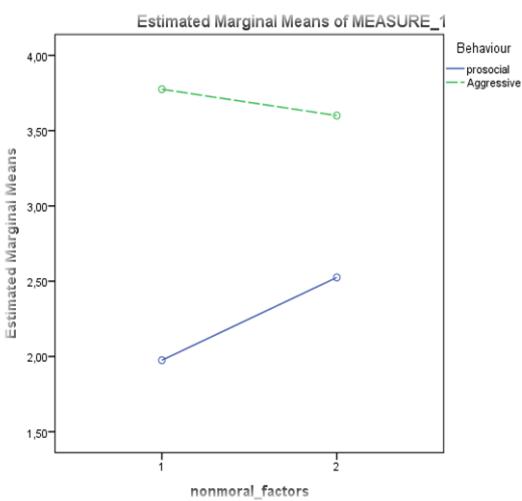


Figure 3
Interaction effect of time and children's social behavior as nominated by peers (prosocial or aggressive) on non-moral-factor justifications for moral transgressions

We found five main effects of time and behaviors (Table 3). First, there was a substantial main effect of time on the evaluation in the moral domain, suggesting that all

children evaluated transgressions in the moral domain at Time 2 as more wrong compared to Time 1. Partial eta was .15, indicating a substantial effect. Second, there were substantial main effects of behavior on evaluation in moral and non-moral transgressions, suggesting that children nominated as displaying prosocial behavior evaluated transgressions in the moral domain as more wrong than children nominated as aggressive at both time points. Partial eta was high (.22), indicating that the effect was meaningful, and lower (.08) for evaluation in the non-moral domain, indicating a smaller effect. Third, there were two main effects of time of justification in the non-moral domain based on intrinsic and non-moral factors respectively. This suggests that children used intrinsic and non-moral-factor justifications in the non-moral domain more frequently at Time 2 than at Time 1. Partial etas were .11 and .07, indicating small effects respectively.

Table 3

Results of mixed between-within subject analysis of variance on scale level: evaluation and justification in the moral and non-moral domain

Evaluation and justification	Wilk's Lambda	Time <i>F</i> (<i>df</i> = 1, 78)	η^2	Behavior <i>F</i> (<i>df</i> = 1, 78)	η^2	Time Behavior <i>F</i> (<i>df</i> = 1, 78)	\times η^2
<i>Evaluation (scale level)</i>							
Evaluation in the moral domain	.85**	13.19**	.15	22.25**	.22	.00	.00
Evaluation in the non- moral domain	.99	.05		6.44*	.08	.02	.00
<i>Justification (scale level)</i>							
Justification in moral domain - intrinsic factors	.98	1.06		.87**	.53	6.44*	.01
Justification in non- moral domain -intrinsic factors	.89*	9.30**	.11	.28		.00	.00
Justification in moral domain - non-moral factors	.98	1.80		84.07**	.52	6.73*	.08
Justification in non- moral domain - non- moral factor	.93*	5.59*	.07	.94		.35	.00

Note: * $p < .05$; ** $p < .01$

Relationships between children's evaluation and justification in the moral and non-moral domain, teacher-child relationship, and children's social behavior as nominated by peers

A bivariate correlation was run among the variables. The results showed that many variables were correlated with each other. Conflict, evaluation in the non-moral domain and justification in the non-moral domain based on intrinsic factors, however, were not correlated with many variables (Table 4). Since intrinsic factors and non-moral factors are mutually exclusive the correlation was perfectly negative. Justification of moral transgressions based on non-moral factors and justification of non-moral transgressions based on non-moral factors were not reported in the table because they have an opposite relationship of the same strength as justification of moral transgressions based on intrinsic factors and justification of non-moral transgression based on intrinsic factors. Hierarchical linear regression was run to assess whether teacher-child closeness, children's evaluation in the moral domain, and justification in the moral domain based on intrinsic factors predicted children's social behavior. This was the case: the three variables explained a total of 68 % of the variance. In the final model, the beta values of closeness and evaluation of moral domain were statistically significant, with teacher-child closeness remained higher ($\beta = .62, p < .01$) and evaluation in the moral domain recording a lower beta value ($\beta = .20, p < .01$), while the beta value of justification in the moral domain based on intrinsic factors was not statistically significant.

Table 4

Bivariate correlations between variables (Spearman's Rho): children's social behavior as nominated by peers, teacher-child relationship, evaluation, and justification of transgressions in the moral and non-moral domain.

Variables	1	2	3	4	5	6	7
1. Child behavior (peer nomination)	-	.69**	-.57**	.44**	.28**	.63**	.17
2. Closeness		-	-.62**	.24*	.19	.65**	.06
3. Conflict				-.18	-.17	-.58**	-.13
4. Evaluation in the moral domain					.57**	.43**	.07
5. Evaluation in the non-moral domain						.28*	.18
6. Justification in moral domain based on intrinsic factors							.18
7. Justification in non-moral domain based on intrinsic factors							

Note: * $p < .05$; ** $p < .01$

Table 5.

Indirect effect of closeness on children's peer-nominated social behavior through evaluation of the moral domain and justification of the moral domain based on intrinsic factors.

Model summary

R	R-sq.	F	df1	df2	p
.82	.68	75.29	3.000	76.00	.0000

Mediation model:

Model	Coefficient	SE	t	p	Boots confidence interval	95%
Constant	-1.34	.12	-10.76	.00	-1.58 to -1.09	
Closeness	.27	.04	6.67	.00	.19 to .35	
Evaluation moral domain	.39	.17	2.27	.02	.05 to .74	
Justification moral (intrinsic factor)	.07	.04	1.82	.07	-.07 to .14	
Total effect of X on Y	.34	.02	11.83	.00	.28 to .35	

Indirect effects are based on unstandardized coefficients

Dependent variable is children's social behavior

Independent variable is closeness

Mediation variables are evaluation in the moral domain and justification in the moral domain based on intrinsic factors

We tested whether children's evaluation in the moral domain and justification in the moral domain based on intrinsic factors mediated the relationship between teacher-child closeness and children's social behavior. To test mediation effect we used the process macro, model 4 (Hayes, 2012). The results showed that evaluation in the moral domain partially mediated the relationship between teacher-child closeness and children's social behavior, while justification in the moral domain based on intrinsic factors did not reveal a significant mediation effect. This indicates that the indirect effect of closeness on children's social behavior through evaluation in the moral domain was significant.

Discussion

In this study we used hypothetical transgression stories to explore how Tanzanian pre-primary school children evaluate and justify transgressions in the moral and non-moral domain and whether their evaluation and justification show the same pattern as found in Western cultures. We furthermore examined whether the relationships between children's evaluation and justification of transgressions in the moral and non-moral domain, teacher-child

relationship, and children's social behavior and whether children's evaluation and justifications of transgressions in the moral and non-moral domain mediated the relationship between the teacher-child relationship and children's social behavior as nominated by peers. A study of this nature, particularly in Tanzania, has been lacking in the literature. It is important to conduct a study of this nature to examine how a pre-primary child evaluates and justifies transgressions in the moral and non-moral domain. This may help to plan educational strategies for interventions to improve behavioral adjustment in the school context.

In this study, children nominated by their peers as displaying prosocial and those nominated as displaying aggressive behaviors both consistently evaluated moral transgressions as more wrong than non-moral transgressions. The finding is in line with research results from Western cultures (Gasser & Keller, 2009; Nucci & Turiel, 1978, 1993; Smetana, 1981, 1985). This indicates that pre-primary school children in the Tanzanian culture evaluate moral transgressions according to the same pattern as was revealed in Western cultures. Research from collectivist societies also reported the same pattern for evaluation of the moral domain, for example in China (Yau & Smetana, 2003). This finding is consistent with the claim of cultural universality for the moral domain (e.g., Graham et al., 2012), unlike the non-moral domain.

Our findings revealed that children nominated as displaying prosocial behavior evaluated moral transgressions more frequently as more wrong and justified moral transgressions on the basis of negative intrinsic consequences that occur from inflicting harm on others more frequently than children with aggressive behavior. This might be attributed to the fact that children displaying prosocial behavior have been consistently reported to be more concerned with the welfare of others (Nucci & Herman, 1982), compared to children displaying aggressive behavior (Gasser & Keller, 2009; Leenders & Brugman, 2005). On the basis of this finding we can conclude that children showing prosocial behavior do distinguish in their justifications between moral and non-moral transgressions, whereas children showing aggressive behavior rarely make this distinction. The findings may imply that emphasis on children's obedience and respect for elders in the Tanzanian culture does not affect this general pattern of evaluation of transgressions in the moral domain for children displaying prosocial behavior. In this study children nominated as aggressive less frequently evaluated moral transgressions as wrong, presumably in favor of their own transgressive moral behavior. This line of reasoning is supported by our results on the prevalence of transgressive behavior among children displaying aggressive behavior versus those displaying prosocial behavior: children in the first group were reported to engage in moral and non-moral transgressions

more frequently than their counterparts who were nominated as prosocial (see Table 2, behavioral prevalence).

We found that both children displaying prosocial and those displaying aggressive behaviors justified non-moral transgressions more frequently on the basis of non-moral factors. These findings are consistent with findings from Western cultures (Gasser & Keller, 2009; Leenders & Brugman, 2005; Malti et al., 2009; Smetana, 1985). This implies that children are aware of the customs and traditions of their culture, in which the violation of conventional rules depends on whether the society in question allows or does not allow certain behaviors. This may mean that children focus on authority approval for their decision making (see also Nucci & Herman, 1982).

Children in both groups frequently justified moral and non-moral transgressions on the basis of non-moral factors, except prosocial children at Time 1. In the Tanzanian cultural context this may reflect the emphasis on obedience and respect for adults. In addition, in Tanzania the issue of morality is a broad one because in the African context morality is closely related to religion, while in Europe religion and morality are much more independent (cf. Michael & Verhoef, 1997). For example, during the interview children were asked “Why is hitting wrong?”, many children responded that it was against God’s will and or was prohibited by teachers or parents. When they were asked “Why is not greeting an adult wrong?”, many children responded that it was bad manners, or it was not allowed. All these responses were recorded as non-moral-factor justifications because God is an external authority and the moral domain only refers to consequences intrinsic to behavior. However, in most cases in the African context, any action which children believe to be against God’s will is considered as a violation of a moral rule. This may imply that the definition of morality in African culture is broad compared to that in Western culture. We speculate that belief in God may be a step further from a conventional authority in the direction of the moral domain.

We hypothesized that children’s evaluation and justification in the moral and non-moral domain would relate strongly and positively to children’s social behavior (as nominated by peers) and closeness with the teacher, but negatively to conflict with the teacher. This was the case. Bivariate correlation revealed significant relationships in the expected direction among these variables, with a few exceptions (see Table 4). Using hierarchical regression we found that closeness and evaluation in the moral domain were associated with children’s social behavior. Both variables in the model explained 68% ($R^2 = .68$) of the variance, indicating that they contributed substantially to the child’s social behavior. However, in the final model closeness had more effect on the child’s social behavior in preschool compared to her/his

evaluation in the moral domain. This implies that the teacher-child relationship plays a more important role in preschool children's social behavior than do their evaluations in the moral domain.

Furthermore, we hypothesized that children's evaluation and justification in the moral and non-moral domain would mediate the relationship between the teacher-child relationship and children's behavior. We found a partial mediation effect: evaluation in the moral domain mediated the relationship. This implies that a child interprets the teacher's actions, which may subsequently affect her/his social behavior and the relationship with teachers. The association between the teacher-child relationship and children's social behavior is dependent on the way teachers support children in their evaluation and justification of transgressions. For example, when a child interprets an action as a violation of moral rule it may affect the relationship between that child's social behavior and the teacher-child relationship because he or she may not obey a teacher who has violated moral rules. When the child interprets the action or behavior of the teacher as right, he or she is more likely to adapt his/her behavior appropriately. In sum, the findings show that each variable has its own unique contribution to the explained variance in social behavior and there is some overlap. Nevertheless, the mediation effect should be interpreted in a correlational way in this cross-sectional study, in which there was a small time lag between the administration of the measures.

Strengths, Limitations and Future Direction

This study has several strengths. First, the study of evaluation and justification of transgressions in the moral and non-moral domain is the first in the Tanzanian cultural context. Second, this is the first study on the relationships between children's evaluation and justification in the moral and non-moral domain, the teacher-child relationship, and children's social behavior. To date there is no literature on this topic, so this study is a contribution to the scientific literature in this field. Third, the nomination of children as displaying prosocial and aggressive behaviors through peer ratings was validated by the teacher ratings. This was a methodological strength of the study because the dependent variable in this study was based on another informant than the independent variable, teacher-child relationship.

This study has certain limitations. First, we used teacher ratings to report on their relationship with the children. Information from a single informant may be associated with bias because a teacher can minimize or exaggerate information for her/his own interests. It would have been better if we could also have asked the children about their relationship with their teachers. To avoid biases in the future, children should report on their relationship with

their teachers. The use of non-moral-factor justifications by children displaying prosocial behaviors together with mentioning God in the basis in this particular cultural context may imply that in Africa, and in Tanzania in particular, the moral domain is viewed in a broader way than in Western cultures. In future, research on what Tanzanian children consider as the moral domain is needed.

Implications

In pre-primary school a teacher is a significant adult in relation to the child. The teacher should provide a good example, for example by being positive and teaching good behavior, to support the child's moral development. This implies that in the case of non-moral transgressions by the children, the teacher should not her/himself react with a moral transgression. Children may copy behavior from teachers, which may support them in their moral development if teachers are able to distinguish between moral and non-moral transgressions. In sum, the transition to pre-primary school marks a period of behavioral, moral and academic development for children. Teachers therefore have a substantial role to play in supporting the children in a positive way, so as to help them develop appropriate behaviors and moral insight which may subsequently lead to a better academic performance in school.

The sample in this study was fairly small. Although it was sampled from a number of schools, they are all located in the same urban area in Tanzania, which limited the generalization of the findings to the country as a whole. In future we suggest a large study to be sampled from both urban and rural locations which will permit the generalization of the findings in the Tanzanian context.

Conclusion

The study highlighted the fact that pre-primary children (age five to seven) in Tanzania are already able to evaluate moral transgressions as more wrong than transgressions in the non-moral domain. Only children nominated as prosocial were able to justify moral transgressions on the basis of intrinsic factors. Both children displaying prosocial and aggressive behaviors justified transgressions in the non-moral domain on the basis of non-moral factors. Another finding was that in this Tanzanian context, children justified transgressions in the moral and non-moral domains on the basis of non-moral factors, which may reflect a cultural orientation based on obedience and respect for authority in the

Tanzanian culture. Furthermore, it was argued that children's interpretation of teachers' actions may affect their relationship with teachers and their social behavior.

Chapter 6

General Discussion

The purpose of this study was to explore and examine teachers' perceptions of children's behavioral adjustment in relation to the teacher-child relationship in Tanzanian pre-primary schools. This purpose was addressed by setting three goals which were accomplished in four empirical studies. The first goal was to explore teachers' perception of children's behavioral adjustment (Chapter 2). This was an explorative stage because no study of behavioral adjustment in children has previously been carried out in the Tanzanian cultural context. Teachers' perception of children's behavioral adjustment was explored in the light of teachers' cultural beliefs in Tanzania. The second goal was to examine the role of the teacher-child relationship on children's behavioral adjustment using a cross-sectional (Chapter 3) and a longitudinal research design (Chapter 4). We examined whether children's behavioral adjustment was related to the teacher-child relationship (dyadic relationship) and to classroom emotional support at class level and whether the relationship and emotional support influenced children's behavioral adjustment over time. The third goal was to examine the moral thinking underlying children's behavioral adjustment using moral domain theory (Chapter 5). We examined children's thinking through their evaluation and justification of transgressions in the moral and non-moral domain. In this last chapter, we summarize and discuss the main findings of the four empirical studies. Furthermore, we discuss the strengths and limitations of the research, point out the practical implications of our findings and make recommendations for future research.

Recent Statistical Figures about Pre-primary Education in Tanzania

In Tanzania all primary schools are supposed to have pre-primary classes in their school premises (URT, 2009), but the number of pre-primary classes and children enrolled in these classes is not known (Bakuza, 2014). Consequently, the data on pre-primary children and teachers in the country are not clear. According to BEST (2012), enrollment for pre-primary education was 1,034,729 (8.9%), but the number of children eligible to be enrolled in pre-primary school has not been documented. Our research found that class sizes ranged from 18 to 140 children in private schools and public schools. This finding was consistent with recent findings by Bakuza (2014) who found a teacher-child ratio of 1:114, well above the approved ratio of 1:25.

Our research also showed that some teachers in public schools were employed by the head teacher, so they were paid from contributions made by the children's parents. Evidence from the literature also shows that the Tanzanian government does not allocate funds for early childhood education (Bakuza, 2014; BEST, 2012). In most cases early childhood education in

the country is taken care of by parents, head teachers and private organizations, which may further imply that many teachers working in public schools are not well trained (cf. Bakuza, 2014). The characteristics of pre-primary education, such as class sizes, were found to affect children's behavioral adjustment in this particular culture.

Summary of Findings

In **Study 1** we aimed at gaining a general overview of teachers' perceptions of children's behavioral adjustment in pre-primary schools. Using an explorative approach we designed instruments in a pilot study which were then used in the main study. Teachers from three different regions in the Tanzanian mainland reported different behaviors which reflected children's adaptation in the school context. Each teacher reported practically the same range of behavioral adjustments children go through in their schools. For example, they reported that some children were active, quiet, and proactive, which suggested successful behavioral adaptation in these children, as perceived by the teachers. By contrast, teachers also reported that some children displayed aggressive behaviors: they fought a lot with other children. Moreover, they were hyperactive and restless. These behaviors were regarded as externalizing behaviors. Other children were reported as being withdrawn, isolated and reticent; these behaviors were regarded as internalizing behaviors. Externalizing and internalizing behaviors were perceived by the teachers as behavioral adjustment problems. A high percentage (70%) of teachers reported that children frequently displayed externalizing behaviors, which became the most pronounced behavior in Study 1 as a behavioral adjustment problem.

In **Study 2** we examined three types of behavioral adjustment (prosocial, anxious, and aggressive) in children, and we examined how they related to the teacher-child relationship and classroom emotional support through a multilevel approach. We found that teacher-child closeness, teacher sensitivity, and positive climate were positively related to prosocial behavior, whereas teacher-child conflict, low quality of teacher sensitivity and less positive climate were associated with aggressive and anxious behaviors. These findings are consistent with results in Western studies (Pianta & Stuhlman, 2004; Silver, Measelle, Armstrong & Essex, 2010; Stuhlman & Pianta 2001). The multilevel approach revealed that the shared variance (R^2) between class level ranged between 25% and 50% and within class level ranged between 10% and 30%. This implies that both the teacher-child relationship and classroom emotional support related to children's behavioral adjustment as perceived by the teachers. A cross-level interaction showed that the relationship between aggregated (class level) teacher-child conflict and aggressive behavior was stronger in classes with a large number of children

compared to classes with a small number. This relationship was correlational because of our cross-sectional design.

In **Study 3** we examined whether the teacher-child relationship and classroom emotional support in Year 1 predicted children's behavioral adjustment in Year 2. This was a two-wave study combined with a multilevel design. We found that some variables were time variant while others were time invariant. Teacher-child closeness and positive climate increased in Year 2, while aggressive behavior and teacher-child conflict decreased in Year 2. Prosocial behavior, anxiety, and teacher sensitivity remained stable. This implies that in the teachers' perception, children's behavioral adjustment improved especially among the aggressive children and the quality of their relationship with the children also revealed an improvement. In a longitudinal multilevel analysis we found that teachers' perception of aggressive behavior in Year 2 was predicted by closeness ($\beta = -.13, p < .01$) and conflict ($\beta = .23 p < .05$) in Year 1, both at individual and at aggregated class level. Since the literature mentions about bi-directionality in the association between children's behavioral adjustment and teacher-child relationship, closeness and conflict were also examined as dependent variables. Teacher-child closeness in Year 2 was predicted by prosocial behavior in Year 1 as perceived by the teachers. In addition, we found that teacher-child conflict in Year 2 was predicted by prosocial behavior ($\beta = -.56, p < .01$) and aggressive behavior ($\beta = .40, p < .01$) in Year 1 as perceived by the teachers. Large class size was found to moderate the relationship between teacher-child conflict and aggressive behavior in this cultural context.

In **Study 4**, using hypothetical transgressions in the moral and non-moral domain, we found that children in Tanzania – like children from Western cultures – evaluated moral transgressions as more wrong than non-moral transgressions (Nucci & Turiel, 1978). They also used in their justifications intrinsic factors for transgressions in the moral domain, not in the non-moral domain. We found a similar pattern of evaluations and justifications to that reported in other Western literature (Smetana, 1981, 1985; Turiel, 2003) and in some collectivistic cultures, such as in China (Yau & Smetana, 2003), but only for prosocial children. The pattern for the use of non-moral justifications for both moral and non-moral transgressions found in this study is different from that found in other studies. In this study the children often made reference to God (a non-moral factor). Children's evaluation and closeness were related with their social behavior; however, the final model revealed that teacher-child closeness was highly correlated with children's social behavior. Children's moral evaluation positively mediated the relationship between closeness and their social behavior.

Similarities and differences between (Western) individualistic cultures and the (Tanzanian) collectivistic culture

Literature which raises the issues of children's behavioral adjustment and its relationship to the teacher-child relationship is mostly based on research done in Western cultures. As far as we know, no study has been conducted in Africa or in Tanzania in particular. The findings are discussed in a broader perspective by looking at similarities and differences between Western contexts and the Tanzanian context, which are culturally different.

Children's behavioral adjustment

This dissertation examined children's behavioral adjustment in the pre-primary school context. Regarding behavioral adjustment, we found that according to the teachers' perception some children had problems adjusting to the pre-primary school context. Children with prosocial behavior were perceived as well-adjusted while children with aggressive/and or anxious behavior were perceived as unadjusted. Aggressive behavior has been consistently reported in Western cultures as a behavioral adjustment problem as perceived by the teachers (see also Birch & Ladd, 1998; Hughes & Cavell, 2003). Behavioral adjustment problems reported in this study for children aged 4 to 6 years were very similar to those reported in Western cultures. This similarity implies that between the ages of 4 and 6 years, children experience more or less the same pattern of behavioral adjustment problems across cultures. What teachers perceive as adjustment problems in children at this age might be part of children's adaptation to the new school context instead of unadjusted or stable behavioral problems.

Factors associated with children's behavioral adjustment

In our research, we found that in the Tanzanian context, environmental factors and child factors play role in behavioral adjustment in children in pre-primary school. Environmental factors included behavioral management strategies, teacher-child relationship, classroom emotional support, class size and urban versus rural location. Child factors included children's evaluation and justification of transgressions in the moral and non-moral domain. These factors were found also in the Western cultures.

Behavioral management strategies

Regarding management strategies we aimed at exploring management strategies used by Tanzanian teachers to manage children who they perceived as displaying behavioral adjustment problems. Teachers reported using supportive strategies, such as discussing the child's problem with her/his parents or guardians, and restrictive strategies, such as asking other children to shout at the child who was perceived as misbehaving. These strategies were intended to stimulate more adjusted behaviors in the child and have been also reported to be applied by teachers in other cultures. In individualistic culture teachers reported to apply more supportive strategies (Baumrind, 1967; Chang, 2003; Perry & Weinstein, 1998), whereas in collectivistic cultures teachers reported to apply both strategies (cf. Elbedour, EIBassiouny, Bart, & Elbedour, 2012). When teachers apply both behavioral management strategies (as in the Tanzanian culture) it depends which child rearing style (authoritative or authoritarian) is being used. This may also imply that teachers are practicing both cultural orientations, individualistic and collectivistic, but at a different degree. What we do know is that the use of restrictive management strategies was positively related to children's externalizing behaviors as perceived by the teachers. This may suggest that restrictive strategies, such as punishment, are counter-effective in helping a child to adjust her/his behavior both in the Western and Tanzanian context. These strategies may affect the child negatively, i.e., instead of solving a problem they may either maintain or aggravate it because the child may copy punishing behavior. This has been reported to be common in collectivistic cultures.

Teacher-child relationship

Regarding teacher-child relationship we aimed to examine whether it is related with children's behavioral adjustment and whether it predicts children's behavioral adjustment over time. In a cross-sectional study teacher-child closeness was found to be associated positively with prosocial behavior and associated negatively with aggressive and anxious behaviors, while conflict was found to be associated positively with aggressive and anxious behaviors and related negatively with prosocial behavior. These relationships were also reported in research in the individualistic Western cultures (cf. Hughes, 2012). Accordingly, we found that a child who experienced a harmonious relationship with the teacher showed better behavioral adjustment (i.e., prosocial behavior) in the school context whereas a child who experienced a conflictual relationship with the teacher showed maladjusted behaviors (i.e., aggressive and or anxious behavior) in that context (Baker, 2006; Hamre & Pianta, 2001).

In the longitudinal study teacher-child conflict was reported to be the strongest predictor of aggressive behavior over time, implying that a disharmonious relationship at the start of schooling predicted aggressive behavior in the child over time. We also found a bidirectional relationship between teacher-child conflict and aggressive behavior. Findings from individualistic (Birch & Ladd, 1998) and collectivistic (Zhang & Sun, 2011) cultures revealed the same results. This implies that when a teacher perceives that the child is displaying aggressive behavior he/she may find it difficult to establish a harmonious relationship with her/him regardless of culture. On the other hand a conflictual relationship between teacher and child may stimulate aggressive behavior in the child. If such a situation persists, it may lead to coercive cycles, enhancing the association between aggressive behavior and conflict (cf. Ladd & Burg, 1999), which may lead to more aggressive behavior on the part of the child. If the situation continues the child may experience self-rejection, which may lead to maladjustment within the school in future and/or delinquent behavior.

On the basis of our studies we can conclude that predictors showed an overlap in predicting behavioral adjustment, but one predictor contributed relatively much more compared to other predictors. The teacher-child relationship was found to be a more important predictor of teachers' perception of children's behavioral adjustment than classroom emotional support. More specifically, teacher-child conflict was found to be the most important predictor of aggressive behavior as perceived by the teachers. This finding is in line with findings from Western contexts (Buyse et al., 2009). Regarding teacher-child relationship, the results found in this study are comparable to Western cultures, which indicates that child support at ages of 4 to 6 years is import in every culture because these children are still adapting their behaviors. However, children's support in the Tanzania culture may differ from that of Western culture depending on the strategies used to manage behavior and beliefs in child rearing.

Classroom emotional support

We aimed to find out whether classroom emotional predicted children's behavioral adjustment. Our findings from the cross-sectional study showed that teachers' sensitivity and positive class climate were associated with prosocial behavior. In the longitudinal study teacher sensitivity predicted aggressive behavior, which was reported also in Western, individualistic cultures (Myers & Pianta, 2008). This implies that a sensitive teacher can help children with behavioral problems to learn more adaptive behavior. This implies that a teacher who is warm towards the children, loves them, and responds to them in a positive tone is more likely to stimulate behavioral adjustment. In contrast, a relationship characterized by

harshness, anger, and punishment may stimulate inappropriate adaptation, such as aggressive behavior and/or withdrawn and reticent behavior in the child. This situation may cause the child's behavioral adaptation process to deteriorate during her/his school career, which may subsequently lead to school drop-out in the early years. However, classroom emotional support has been revealed to be more effective in Western, individualistic cultures in supporting children to adapt their behavior compared to collectivistic cultures like Tanzania. This can be attributed to large class size in Tanzania compared to small class size in Western cultures.

Class size and type of school (public versus private)

In the present study, class size was reported to range from relatively small (i.e., 18 children) to very large (i.e., 140 children) per class (based on information in class attendance registers). In Tanzanian pre-primary schools large class sizes are predominantly found in public schools, and imply a large teacher/child ratio (cf. Bakuza, 2014). In this study class size was found to be strongly associated with teachers' perceiving a high degree of behavioral adjustment problems in children. The variation in preschool class size in Western cultures is much smaller and therefore in the Western context, class size may have less impact on teachers' perception of behavioral adjustment problems. Behavioral adjustment can be a challenge in large classes such as in Tanzania. For example, a class of over 50 children between the ages of 4 and 6 years might be characterized by random movements, restlessness, children pushing each other, poor attention/concentration, all behaviors which might be perceived as behavioral adjustment problems by the teachers. A teacher may find it difficult to manage so many children at the same time (Blatchford, Bassett, & Brown, 2005). This may be especially the case when teachers are not well trained in managing young children. In this study, class size was strongly associated with teachers in public schools perceiving a high degree of behavioral adjustment problems in children. In the current context, we could not disentangle the effects of class size and type of school on children's behavioral adjustment. Moreover, teacher's education was also involved, with teachers in private schools having a better education in children's development at this age than teachers in public schools.

Urban versus rural schools

The environmental variable of rural versus urban schools was associated with teacher's cultural beliefs. Belief in cooperation with parents was more valued in rural than in urban schools, which implies a more collectivistic orientation in Tanzanian rural areas. A belief in

cooperation was also more associated with small class sizes than large class sizes, which means that cooperation between teachers and parents was more feasible in schools with relatively small classes. Play was more highly valued in urban schools, as it is valued in Western cultures, implying that teachers in urban schools are assuming a more individualistic orientation. The belief in cooperation is predominantly a feature of collectivistic cultures.

Children's evaluation and justification of transgressions in the moral and non-moral domain

We aimed to find out how Tanzanian pre-primary school children evaluated and justified transgressions in the moral and the non-moral domain. We found that children nominated by peers as showing prosocial behavior evaluated moral transgressions as more wrong and more often used intrinsic factors as justifications compared to children nominated as aggressive by peers. This finding on evaluation of transgressions reflects a similar pattern to what has been reported in Western cultures (Gasser & Killer, 2009; Leenders & Brugman, 2005). In this study children with aggressive behavior were reported as engaging more frequently in moral and non-moral transgressions, which might be the reason for responding to moral transgressions as less wrong. This may mean that if a child is not able to distinguish between moral and non-moral transgressions he/she may more frequently engage in moral and non-moral transgressive behaviors.

Patterns in domain evaluation by children nominated by peers as displaying prosocial or aggressive behavior were partly similar and partly different from studies in Western culture. The most interesting difference between our study and Western studies was that Tanzanian children, both those nominated as displaying prosocial behaviors and those nominated as displaying aggressive behaviors, used non-moral factors to justify transgressions in the moral and non-moral domain. Many children referred to God as a justification factor. This was coded as a conventional domain category and therefore a non-moral justification. These non-moral justifications for moral transgressions that are understood as moral may imply that in Tanzania the conception of morality is broader than in Western cultures (Michael & Verhoef, 1997). In Africa, including Tanzania, morality is mainly based on religion (Michael & Verhoef, 1997). In addition, using God as justification may suggest that these children are looking for an authority to guide their behaviors.

A second question in Study 4 concerned the relationship between children's evaluation and justification, the teacher-child relationship and the child's social behavior (being nominated by peers as prosocial or aggressive). We found that children's evaluation of

transgression in the moral domain, and teacher-child closeness explained a high percentage of variance in children's social behavior. As far as we know, this relationship has not been reported before in the literature. However, as was found in previous empirical studies in other cultures, in this research there was a stronger association between the teacher-child relationship and children's social behavior than between the teacher-child relationship and children's evaluation of moral transgression. Children's evaluation of transgressions in the moral domain partly mediated the relationship between the teacher-child relationship and social behavior of the child. This mediation effect implies that a child is a co-constructive and reflective thinker, who interprets the actions or behavior of the teacher and/or peers in social interactions. Such interpretations may affect the child's social behavior and the teacher-child relationship, which may happen in any culture. However, this is only correlational because the design was cross-sectional.

In sum, this research revealed both similarities and differences in findings between Western studies and this Tanzanian study. Both environmental and child factors play an important role in children's behavioral adjustment. In this dissertation we suggest that in explaining children's behavioral adjustment these factors should not be understood in an isolated way; presumably they function in a circular, recursive manner. For example, unadjusted behavior on the part of a child may elicit negative responses from the teacher, thereby possibly leading to more unadjusted behavior. Furthermore, the child interprets the actions and behavior of the teacher, which in turn might affect the relationship with the teacher and the child's social behavior. The child's interpretation of the teachers' actions and behaviors may determine the relationship that exists between teacher and child and the social behavior of the child, which may lead into a circular relationship.

In Tanzanian pre-primary schools, class size was found to be an important factor for teachers' perception of children behavioral adjustment, which is not the case in Western cultures. Possibly class size was a determinant of strategies which used by the teachers to manage children's behavior which also different from the Western cultures. In addition, teachers' cultural beliefs about childrearing differ between these cultures, which have implications on childrearing like what is perceived as appropriate behavior and appropriate management strategies.

Strengths and Limitations

In this section we discuss general strengths and limitations as observed in all four empirical studies. First, this is the first time a study on children's behavioral adjustment has

been conducted in the Tanzanian cultural context. Data were gathered on teachers' perceptions of children's behavioral adjustment in pre-primary schools. Furthermore, we were able to examine whether children's behavioral adjustment changed over time using a longitudinal study design. In addition, in this study we used a multilevel design combined with a longitudinal design, a combination which has rarely been used to examine children's behavioral adjustment in preschool. This study therefore has informative data relevant to the Tanzanian culture.

Second, we were able to design instruments. We designed a structured interview schedule, which was used to explore teachers' perception of children's behavioral adjustment and teachers' behavioral management strategies. In addition, we designed a cultural beliefs questionnaire on child rearing styles. The variables that emerged from these studies reflected high reliability. This means that we now have measures that are psychometrically adequate, which can be used in the Tanzanian context. Using these instruments, the studies conducted in Tanzania provided results which add to the empirical literature on children's behavioral adjustment in preschool. Moreover, other African contexts can adapt these measures as well.

Third, we used a multi-informant and multi-method design to explore and examine children's behavioral adjustment and its relationship with the teacher-child relationship and classroom emotional support. For example, teachers gave a general picture of children's behavioral adjustment through an interview and reported on the individual child's behavioral adjustment in the dyadic relationship through a questionnaire. In the second study we used an independent teacher to rate children's behavioral adjustment and the teacher-child relationship. When these results were compared with the results in the main study they pointed roughly in the same direction. In addition, in the fourth study we used the teacher as an external independent observer to rate the child's behavioral adjustment. A classroom observation method was used to observe classroom emotional support. We observed the interaction of the teacher with all the children in the class. We also used a peer nomination method to distinguish and select children with prosocial and with aggressive behaviors in their classes. Furthermore, story-telling was combined with an interview to elicit children's evaluation and justification of transgressions in the moral and non-moral domain. These multiple methods and multiple informants enabled the validation of our results.

Fourth, in this study we related children's evaluation and justification of transgressions in the moral and non-moral domain to the teacher-child relationship and children's social behavior. This relationship has not been researched before, so it was explored for the first

time. This added to the literature on the moral development of young children in pre-primary school.

This study also has limitations. First, our studies were restricted to the pre-primary school context. According to the ecological model, the behavior of the child is influenced at home and at school. In this study we observed the school microsystem only. The home microsystem has a great influence on the child's behavior, which could help to explain her/his behavior in the school context. In addition, parents have much more information about their children compared to teachers. For example, the child's history cannot be obtained from the teacher. By combining information on child's behavioral adjustment from parents and teachers one can construct a more elaborate picture of that adjustment in the school context. In the future therefore, the relationship between children's behavioral adjustment and the teacher-child relationship should be examined in both the home and the classroom microsystem.

Second, the teacher-child relationship was reported on by a single informant, the teacher, which may lead to a bias in the information on the teacher-child relationship. Although the teacher has been recommended as a good informant concerning the relationship with the child in the school context, he/she may exaggerate or minimize information to present a model picture of the classroom context. For example, if he/she minimizes the problems the researcher may regard her/him as a good teacher, or if he/she exaggerates them he/she may be hoping to be helped. In addition, a teacher may favor some children over others in her/his own interests. In the future, children should be asked about their relationship with their teachers. Parents can also be asked to report on the teacher's relationship with their child. Results from all parties can be used to validate the information about the teacher-child relationship in school, which may reduce bias.

Third, the findings in this study cannot be generalized to the Tanzanian or African context because Study 1 was an explorative study and the other studies were done in an urban area of Tanzania (Dar es Salaam). We suggest that in future research on children's behavioral adjustment should be conducted in both the urban and rural parts of the country. This will allow for generalization.

Implications for Policy and Practice in Tanzania

According to teachers' perception, a moderate to high percentage of children displayed behavioral adjustment problems in class. This may imply that teaching in pre-primary school is stressful. Nevertheless, pre-primary school teachers should be aware that there are different views on behavior. For example, a teacher may look at behavior as a stable outcome or as a

temporary phase in adjustment, which may further depend on the context and the reaction to the child. If we adopt the latter perspective on behavior, it is very important for teachers to have a mix of behavioral management strategies for supporting and correcting children's behavior. Moreover, they should be aware of the negative effects on children's subsequent behavioral adjustment of using only punitive and rejecting strategies. For children to show more appropriate classroom behavior teachers should instruct children on what they perceive as appropriate behavior in class. These are all aspects that need to be incorporated in preschool teacher training.

The teacher's educational background can affect a child's behavioral adjustment. In this study this factor could not be separated from the difference between the private and public schools and related class sizes. Most of the teachers in public schools had hardly any training in early childhood education, though some were educated as primary school teachers. On the basis of this finding, we recommend that teachers who are currently teaching in public pre-primary schools should be given priority when it comes to training because most of them lack the educational background, knowledge and skills to manage young children and large class size. Furthermore, teachers should be aware of the consequences of their own behaviors in class on the moral development of children. It should be clear to teachers that transgression is not only inappropriate but can also lead to children copying this kind of behavior. Short courses should therefore be given in managing children's behavior in a positive way.

In this study teachers' reports indicated that there were no clear rules on managing children's behavioral adjustment problems. Teachers were found to apply both supportive and restrictive strategies. Because children are developing and adapting their behaviors they need clear rules to guide them during the transition from home to school. To solve this problem, we suggest that preventive strategies for managing child behavior, including clear rules and behavioral instructions for teachers, need to be considered in the Tanzanian context in both pre-primary schools and teacher training colleges. We suggest that in every pre-primary school there should be a list of rules and examples of appropriate behavior. Schools should also be informed on how to effectively manage children who adapt their behavior inappropriately. Teachers, educational psychologists, and policy makers need to consider children's behavioral adjustment in early years as an important process that needs to be developed and nurtured appropriately, because it lays the groundwork for important social and academic developmental processes that follow later in the child's life.

In this study we found that an initial teacher-child relationship which was characterized by conflict at child and class level was a significant predictor of aggressive behavior during

pre-primary school which may last longer. We also found that teacher-child conflict and aggressive behavior relate in bidirectional way. Persistence of a coercive relationship between teacher-child conflict and aggressive behavior may cause peer rejection, truancy, poor academic performance, and/or the adoption of more aggressive behaviors during the child's school career. To enhance positive behavioral adjustment in children, teacher training should focus on the importance of establishing a good teacher-child relationship at the outset and providing a positive classroom environment. We suggest that the teacher-training curriculum should include address of quality of the teacher-child relationship at child and class level. Furthermore, given the knowledge of children's behavioral trajectories, preventive interventions can be targeted to improve teacher-child relationships, which may stimulate positive behavioral adjustment in children. Specific attention to early teacher-child relationships at child level and teacher interactions with children at class level should focus on helping children who are showing early signs of behavioral adjustment problems, notably aggressive behavior. These children should be identified and supported in a friendly manner.

In three empirical studies class size was found to be a contributing factor to children's behavioral adjustment problems through a moderation and mediation effect, which means it affected the relationship between the teacher-child relationship and children's behavioral adjustment. If there are many children in the class, which is often the case in Tanzanian public schools, teachers are unable to attend to all of them. We suggest a long-term and a short-term solution for this issue. The long-term solution is that the Ministry of Education and Vocational Training train enough teachers for pre-primary classes. At the moment Tanzania has a serious shortage of teachers which does not match with large class sizes (cf. Bakuza, 2014). Moreover, teacher training should include class management strategies and information on young children's behavioral adjustment, to prepare teachers for their task. In addition, children should learn rules for acceptable behavior, for example through teachers showing them pictures presenting acceptable behavior. This is an important strategy because between the ages of 4 and 6 years, children tend to copy and imitate behavior.

Reducing class size and training more teachers means more funding will be needed to cover these costs. This might be beyond Tanzania's reach at the moment. Classes can be reduced to 45 children, but teacher training should also prepare teachers by supplying them with adequate classroom management strategies. As a short-term measure, therefore, teachers should be trained to manage large classes. As it is difficult to build a positive relationship with each child in overcrowded classes, a good option for teachers would be to focus more on establishing positive interactions with all the children in a class. This can be achieved by being

positive, warm, friendly, and caring to all children and establishing a positive environment which can stimulate positive behaviors in children. This approach was applied by some of the teachers in some schools. For example, during classroom observations, despite the size of the class, some teachers used phrases like “good children”, “I love you” “you are my good children” “you are my good friends”. These phrases and the attitude of the teacher helped to establish a positive climate in the class and are helpful in stimulating positive behaviors in children. In such situations, children feel loved and cared for, which for some of them may be a necessary condition for developing prosocial behavior. However, most teachers lack the behavioral management skills needed to guide children’s behavior, especially that of young children. We suggest that strategic plans should be established to run short courses to train these teachers in managing large classes.

Conclusions

The findings in this dissertation underscore the importance of environmental factors, such as teacher-child relationship, classroom emotional support, class size, urban-rural location, and child factors, such as the child’s evaluations and justifications of transgressions in the moral and non-moral domain on children’s behavioral adjustment. These findings, can give teachers information that their relationship with children is in part guided by moral and non-moral rules because the child is not only copying and imitating, but also interpreting the behavior of the teacher. A harmonious relationship between teacher and child can help a child to interpret the actions or behavior of the teacher in a positive way. This may enhance positive social behavior in children and this, in turn, may strengthen their relationship with the teacher, which may stimulate children’s behavioral adjustment. This calls for well trained teachers who can handle young pre-primary children’s behavioral adjustment in early years in school because this stage is the foundation of further development during the child’s school career.

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Samenvatting
(Summary in Dutch)

In veel landen is tegenwoordig voorschools onderwijs aanwezig om jonge kinderen voor te bereiden op formeel onderwijs. Voor veel kinderen betekent de voorschool een uitdaging, omdat dit hun eerste ervaring is met functioneren in een grote groep met betrekkelijk onbekende personen en met een duidelijke structuur. In de overgangsperiode kunnen kinderen onaangepast gedrag vertonen, soms is dat slechts tijdelijk, maar soms ook meer permanent.

Dit proefschrift bestaat uit vier empirische studies naar de gedragsaanpassing van kinderen in het voorscholese onderwijs in Tanzania en de rol van de leerkracht-kind relatie daarbij. In de eerste studie exploreerden we de percepties van voorscholese leerkrachten van de gedragsaanpassing bij de kinderen en hun opvattingen over gehoorzaamheid, spel en samenwerking met de ouders. Verder exploreerden we de disciplinetechieken die leerkrachten gebruiken om de gedragsaanpassing van de kinderen te bevorderen. Dit verkennende onderzoek vormde het startpunt voor dit proefschrift, omdat niet eerder een soortgelijke studie was uitgevoerd in Tanzania. In de tweede studie onderzochten we enkele kenmerken van de voorscholese omgeving die verband kunnen houden met de gedragsaanpassing van de kinderen. Dit was zowel een survey als een observatie studie, waarbij gebruik werd gemaakt van een cross-sectionele, multilevel benadering. De relaties werden onderzocht tussen enerzijds de leerkracht-kind relatie, het emotioneel ondersteunend klasklimaat, de opvattingen van de leerkrachten en anderzijds de gedragsaanpassing van de kinderen zoals de leerkrachten deze waarnamen. In de derde studie onderzochten we de verandering en de voorspelbaarheid van de gedragsaanpassing van kinderen in de voorschool. We beoogden na te gaan of de leerkracht-kind relatie en het emotioneel ondersteunend klasklimaat de gedragsaanpassing van de kinderen over de periode van een jaar konden voorspellen. Tevens is met het oog op reciproke relaties onderzocht in welke mate gedragsaanpassing de leerkracht-kind relatie een jaar later voorspelt. In de vierde studie breidden we de gedragsaanpassing van de kinderen uit naar hun moreel begrip. In deze studie beoogden we het vermogen te onderzoeken onderscheid te maken tussen overtredingen in het morele en het niet-morele domein. De evaluaties en rechtvaardigingen van de kinderen van morele en niet-morele overtredingen werden vervolgens in verband gebracht met de leerkracht-kind relatie en met het sociaal gedrag van de kinderen. Deze studie verlegt de aandacht naar het kind als denkend subject.

Voor dit proefschrift gebruikten we diverse methoden van dataverzameling. Ten eerste gebruikten we een interviewschema. Leerkrachten werden individueel, mondeling geïnterviewd over de gedragsaanpassing van de kinderen. Ten tweede gebruikten we vragenlijsten om informatie te verzamelen over de leerkracht-kind relatie, de

gedragsaanpassing van de kinderen, en de opvattingen van de leerkrachten over gehoorzaamheid, spel en samenwerking met de ouders. Vragenlijsten werden ook gebruikt om informatie te verkrijgen over achtergrondkenmerken (geslacht, leeftijd, enz.) van leerkrachten en kinderen. Ten derde gebruikten we een observatiemethode om informatie te verzamelen over de emotionele ondersteuning in de klas. Tenslotte werden de verhaalmethode en het interview gebruikt om gegevens te verkrijgen over de evaluaties en rechtvaardigingen van kinderen inzake hypothetische overtredingen in het morele en niet-morele domein.

De resultaten wezen uit dat een hoog percentage van de leerkrachten (70%) externaliserend gedrag van de kinderen in de klas waarnamen. Leerkrachten rapporteerden ondersteunende en restrictieve technieken om positieve gedragsaanpassing van de kinderen in de klas te bevorderen. Spelen op school werd meer gewaardeerd in de stedelijke dan in de landelijke gebieden hetgeen een meer individualistische oriëntatie kan weerspiegelen. Samenwerking met de ouders daarentegen werd meer gewaardeerd in de landelijke gebieden hetgeen toegeschreven zou kunnen worden aan de overwegend collectivistische oriëntatie in die gebieden. Geen verschil werd gevonden tussen stedelijke en landelijke gebieden in de opvattingen van de leerkrachten over gehoorzaamheid. Dit zou er op kunnen wijzen dat hoewel stedelijke gebieden als Dar es Salaam in hoge mate zijn geïndustrialiseerd, de bevolking in ieder geval deels zijn culturele waarden heeft behouden die een meer collectivistische oriëntatie weerspiegelen zoals tot uitdrukking komt in gehoorzaamheid. Die nadruk op gehoorzaamheid geeft aan dat de Tanzaniaanse cultuur wordt gekarakteriseerd door een sterkere collectivistische oriëntatie dan welke gevonden wordt in westerse, individualistisch georiënteerde landen. Verder modereerde klassengrootte de relatie tussen de opvattingen van de leerkrachten inzake samenwerking en de gedragsaanpassing van de kinderen. De leerkracht-kind relatie, sensitief opvoedersgedrag van de leerkracht, en een positief klasklimaat waren positief geassocieerd met prosociaal gedrag van de kinderen, terwijl een lage sensitiviteit van de leerkracht en een minder positief klasklimaat verband hielden met agressief en angstig gedrag. Een multilevel analyse liet zien dat zowel de leerkracht-kind relatie als het emotioneel ondersteunend klasklimaat verband hielden met de gedragsaanpassing van de kinderen zoals waargenomen door de leerkrachten. Opvattingen van leerkrachten over spel hielden verband met angstig gedrag bij de kinderen.

Een longitudinale studie over 2 meettijdstippen met één jaar verschil, liet zien dat de nabijheid in de leerkracht-kind relatie en het positief klasklimaat verbeterden in het tweede jaar, terwijl agressie bij de kinderen en conflicten in de leerkracht-kind relatie verminderden. De perceptie van de leerkrachten van de gedragsaanpassing van de kinderen (op tijdstip 2)

werd voorspeld door de mate van nabijheid en van conflicten in de leerkracht-kind relatie (op tijdstip 1). De mate van conflicten in de leerkracht-kind relatie (op tijdstip 2) werd negatief voorspeld door het prosociale gedrag van het kind en positief door het agressieve gedrag van het kind (op tijdstip 1). De resultaten lieten dus een wederkerige relatie zien tussen conflict in de leerkracht-kind relatie en agressief gedrag van het kind. Klassengrootte modereerde de relatie tussen de mate van conflict in de leerkracht-kind relatie en agressief gedrag bij het kind.

Aan de vierde studie namen kinderen deel die door hun klasgenoten ofwel als prosociaal ofwel als agressief waren genomineerd. We vonden een overeenkomstig patroon in de evaluaties van overtredingen in het morele en niet-morele domein bij de kinderen in Tanzania als is gerapporteerd bij kinderen in Westerse landen, maar alleen voor de prosociale kinderen. Een verschil werd gevonden in de rechtvaardigingen van morele en niet-morele overtredingen. In onze studie refereerden kinderen in hun rechtvaardiging van morele en niet-morele overtredingen dikwijls aan God. Zowel de evaluatie van morele overtredingen als nabijheid in de leerkracht-kind relatie hielden verband met hun sociale gedrag zoals beoordeeld door hun klasgenoten. De morele domein evaluatie medieerde gedeeltelijk het verband tussen de leerkracht-kind relatie en sociaal gedrag.

Deze studie heeft sterke en zwakke punten. De sterke punten zijn de volgende. Ten eerste, dit is het eerste empirisch onderzoek in Tanzania naar de gedragsaanpassing van kinderen in de voorschool en naar de leerkracht-kind relatie in die periode. Ten tweede, we ontwikkelden een gestructureerd interviewschema om de perceptie van de leerkrachten van de gedragsaanpassing van de kinderen te exploreren en de gedragsmanagementtechnieken van de leerkrachten. Verder ontwikkelden we een vragenlijst voor de culturele opvattingen van de leerkrachten over opvoeding en een voor hun opvoedingsstijlen. Ten derde gebruikten we meerdere informanten en meerdere methoden om de gedragsaanpassing van de kinderen te bestuderen, hetgeen in methodisch opzicht een meerwaarde vormt. Ten vierde onderzochten we de verbanden tussen de evaluatie en rechtvaardiging van overtredingen in het morele en niet-morele domein bij kinderen, de leerkracht-kind relatie en de gedragsaanpassing, waardoor inzicht werd verkregen in de morele ontwikkeling van het jonge kind in de voorscholese periode.

Dit proefschrift heeft ook beperkingen. Ten eerste, de leerkracht-kind relatie werd beoordeeld door één informant, de leerkracht, hetgeen bias kan introduceren inzake deze relatie. Voorgesteld wordt om in de toekomst ook ouders te bevragen over hun relatie met het kind en/of kinderen te bevragen over hun relatie met de leerkracht. Ten tweede, de onderzoeken werden alle uitgevoerd binnen het microsysteem van de school. Voorgesteld

wordt om in de toekomst de gedragsaanpassing van kinderen ook te onderzoeken in het huiselijk microsysteem. Ten derde, onze bevindingen kunnen niet gegeneraliseerd worden naar de gehele Tanzaniaanse context omdat de meeste studies werden uitgevoerd in een stedelijke omgeving, met uitzondering van de eerste, exploratieve studie. Voorgesteld wordt om in de toekomst zowel stedelijke als landelijke gebieden in het onderzoek te betrekken.

Samengevat, dit proefschrift benadrukte het belang van de leerkracht-kind relatie, de emotionele ondersteuning in de klas, de klassengrootte en de evaluatie en rechtvaardiging door kinderen van overtredingen in het morele en niet-morele domein voor de gedragsaanpassing van kinderen in de voorschool in Tanzania. Verder schonk dit proefschrift aandacht aan factoren op het individuele niveau en op het klasniveau die de gedragsaanpassing van kinderen kunnen belemmeren dan wel bevorderen.

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About the Author

Curriculum Vitae

Theresia was born on June 25, 1969 in Mbeya region, South Western part of Tanzania. She obtained her diploma in education in 1993 from Marangu teachers college, Tanzania. She obtained her bachelor degree in Arts with Education in 1999 from the University of Dar es Salaam. In 2003, she obtained her master degree in applied social psychology also from the University of Dar es Salaam. She worked as a secondary school teacher until 2004. From 2005 she worked as an assistant lecturer in the department of psychology and special education at the Open University of Tanzania. In January 2011, she started her PhD program on behavioral adjustment of pre-primary school children in Tanzania: the role of the teacher-child relationship, in the department of developmental psychology at Utrecht University under the supervision of Prof. dr. Daniel Brugman and Dr. Cathy van Tuijl. As a PhD candidate, Theresia was selected to participate in the international conference which was organized by the International Society for the Study of Behavioral Development (ISSBD) in 2014 in Shanghai, China. Part of the findings in this dissertation was presented at this conference. On completion of this PhD program she will be working as a lecturer at the Open University of Tanzania.

Publications

Scientific publications

Shavega, T. J., Brugman, D., & van Tuijl, C. (2014). Children's behavioral adjustment in pre-primary schools in Tanzania: A multilevel approach. *Early Education and Development* 25(3), 356-380. doi:10.1080/10409289.2013.807722

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Other publications

Shavega, T. J. (2006). The effectiveness of counseling service delivery on problem-coping behaviors: A case study of UMATI referred refugees centre in Dar es Salaam Tanzania. *Journal of Issues and Practice in Education*, 1 (2), 87-97.

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