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Physical interactions involving preschoolers and kindergartners in a childcare center

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ABSTRACT

This naturalistic observational study described the similarities and differences in physical interactions involving preschoolers and kindergartners within the context of a US childcare facility. It examined patterns of touch involving the children across center and circle activities within the course of their day. Results indicated that preschoolers more often engaged in purposeful forms of physical contact than kindergartners. Of the purposeful forms of physical contact, affectionate touch occurred more frequently involving preschoolers than kindergartners. Together, these findings suggest that the extent and types of physical contact involving preschoolers and kindergartners may serve different developmental needs that are in accordance with children's ages, skills, and the emphasis placed on physical contact in the educational setting.

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The number of children attending early childcare facilities in the US is rapidly increasing related to reasons such as both parents working outside of the home and parents' interests in their children becoming accustomed to engaging with other similar-age peers (Chudacoff, 1989; Landreth, Gardner, Eckhardt, & Prugh, 1943; Lindon, 2003; Sutherland, 2000). Given the importance these institutions play in children's lives, greater attention needs to be directed toward understanding the developmental nature and functions of children's interactions with others in these childcare institutions. Thus, in an effort to contribute to this understanding, the present study investigated the similarities and differences in prevalence of physical contact involving preschoolers and kindergartners within the context of a US childcare center.

1. Physical contact and its relations to attachment

Harlow's (1958) studies involving Rhesus monkeys established the importance of tactile stimulation in contributing to the development of relations between infant monkeys and their mothers. In fact, his seminal work on tactile stimulation provided greater impetus for examining the importance of physical contact in the development of social relationships among humans. To date, the research on physical contact involving children has focused predominantly on interactions between infants and their caregivers, particularly mothers.

Many researchers suggest that the developing relationship between infants and their caregivers is greatly affected by physical touch (Blackwell, 2000; Bowlby, 1969; Feldman, Weller, Sirota, & Eidelman, 2003; Stack, 2001; Stack & LePage, 1996). For example, Bowlby (1969) suggests that responsive forms and amounts of mother–infant physical contact are central to helping balance infants' need for exploration and their proximity-seeking behaviors. Indeed, higher levels of affectionate touch between infants and their caregivers were related to children's development of secure attachments, whereas limited levels of

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affectionate touch between infants and their caregivers were associated with children's development of anxious and avoidant attachment patterns (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969; Bretherton, 1992; Tracy & Ainsworth, 1981). Bretherton (1992) also suggested that the differing forms of attachment patterns may relate to developing different cognitive representational models infants rely on when forming relations with others, including those beyond their caregivers.

In addition, greater tactile stimulation among caregivers and infants has shown to significantly improve infants' performance on cognitive, visual/auditory, social/personal, and physiological developmental tasks (Ainsworth & Bowlby, 1991; Field, Morrow, & Valdeon, 1992; Montagu, 1971; Ottenbacher et al., 1987; Shanberg, Field, & Kuhn, 1993; Stack, 2001). Also, skin-to-skin contact, such as Kangaroo Care (KC) or Gentle Human Touch (GHT), among hospitalized premature infants and their caregivers has been associated with promoting infants' warmth/temperature regulation, stable vital signs, adequate oxygen saturation, deep sleep, greater amount of alert inactivity, lesser crying, lesser frequent infections, fewer days in a hospital, greater weight gain, stability of heart rate, and respiration that matches normal levels (Charpak, Ruiz-Pelaes, Figueria de Colume, & Charpak, 2001; Feldman, Eideiman, Sirota, & Weller, 2002; Feldman et al., 2003). Touch by depressed mothers has also been demonstrated to promote infants' positive affect (Peláez-Nogueras, Field, Hossain, & Pickens, 1996). Yet, although there exists a large body of research on physical contact involving infants, less information is available about the extent and functions of physical contact involving young children in childcare settings beyond infancy.

2. Physical contact involving young children in educational settings

Early research involving young children in childcare facilities has focused on aggression (Appel, 1942; Body, 1955). For example, Appel (1942) examined the content of and processes by which aggression in either physical or verbal forms occurred among nursery school children of differing ages, socioeconomic status, and ethnic backgrounds. She noted that among the different types of aggression displayed, aggression over possession of property was common and that two-year-olds engaged in more aggression over property than four-year-olds. Other research by Body (1955) found that children of a university nursery school demonstrated aggression in speech and action more often than children of a community supported day school. She suggests that this difference between facilities may be attributed to variations in age groups, family circumstances, and individual characteristics of the children across the two childcare facilities.

Expanding the focus beyond solely aggression, Landreth et al. (1943) profiled the types of indirect and direct contact that occurred between teachers and children in nursery schools. In one nursery school where three-fourths of the children's parents were college graduates, teachers made greater indirect contact with three-year-olds' clothing and equipment than direct contact with the three-year-olds themselves. When teachers provided physical assistance or guidance to three-year-olds, it was often in the form of helping children undertake certain tasks or gain access to kinesthetic experiences that would enhance children's learning of new motor skills. Landreth et al. (1943) suggest that the particular forms and extent of teacher–child contact may relate to the teacher training program which promoted that teachers use minimal physical contact with children so as to encourage children's greater independence. Comparisons of these teachers' engagement with three-year-olds with teachers' engagements with four-year-olds at another comparable nursery school indicated that teachers of the four-year-olds provided less physical assistance or guidance, which Landreth et al. (1943) related to the four-year-olds having advanced in age and maturity.

The use of touch as an effective teaching tool has been demonstrated by teachers working with predominantly Asian immigrant five- to six-year-olds attending an elementary school (Wheldall, Bevan, & Shortall, 1986). After establishing baseline levels of teachers' touch of children and children's on-task and disruptive behaviors, Wheldall et al. (1986) instructed teachers to touch children only when praising them for appropriate academic or social behavior and to avoid engaging in physical contact on other occasions (e.g., instruction, redirection). Wheldall et al. (1986) found that this intervention of touch accompanying praise resulted in increased on-task behavior and decreased disruptive behavior. Thus, touch has been suggested to have the potential of being a positive reinforcer for young children's interactions with others in classroom settings (see Cigales, Field, Hossain, Peláez-Nogueras, & Gewirtz, 1996; Wheldall et al., 1986).

Another intervention study conducted in a US nursery school serving multi-ethnic children of middle-class medical school staff and faculty found the baseline frequency of routine physical contact between female teachers and infants, toddlers, and preschoolers in free play and small group activities to be low (Field et al., 1994). Having shared these findings with teachers and encouraging the teachers to engage in greater extents of physical contact with children than they had customarily done, findings indicated that positive touch increased and that negative and caregiving touch did not change. When researchers then combined baseline and follow-up observations, boys were the recipients of more positive and caregiving touch than girls. Caregiving touch (primarily provided by the teachers) was also found to decrease across the age groups, with teachers touching infants more frequently than toddlers, who were in turn more often touched than preschoolers. Among children, boys engaged more in positive touch interactions than girls.

Other forms of touch between adults and children, such as that serving affectionate purposes, have been investigated in daycare centers. For example, in the daily activities (e.g., free play, large and small groups) of a university daycare center composed of middle-class children and six daycare centers composed of low-income children, affectionate verbal and physical behaviors were found to be low in frequency (Twardosz et al., 1987). However, when affectionate behaviors were expressed, physical affection occurred more often during free play activities, while verbal affection, used primarily by teachers, occurred more often during small group activities. Twardosz et al. (1987) suggest that different activities may invite variations in expressions of affection.

In a nursery school, Cigales et al. (1996) examined touching behaviors involving middle-class infants, toddlers, and preschoolers of various cultural backgrounds. No significant differences were found in the total amounts of physical contact among children across the three classrooms. However, infants engaged in physical contact of a positive nature with each other more often than toddlers and preschoolers. Preschoolers received more negative physical contact than infants. Infants and toddlers were also found to engage in more task-related (i.e., helpful and functional) touch than preschoolers. In addition, toddlers and preschoolers used touch to communicate with one another more frequently than infants, and toddlers were more affectionate in their touches than were infants. When taking into account teachers' involvement in physical contact with the children, teachers in the infant classroom initiated and engaged in positive touches more often than teachers in the toddler or preschool classrooms.

Additional studies in childcare facilities have examined gender patterns in interactions between teachers and children. For example, in a laboratory preschool serving middle-class children, Perdue and Connor (1978) found greater overall physical contact among teachers and children of similar genders than teachers and children of differing genders. They also found that male teachers made more use of helpful touch with girls than with boys and made more use of friendly touches with boys than with girls. Female teachers did not differ in the types of touch they used with girls and boys. However, during the coding process, the coders were not privy to the verbal content that may have accompanied the physical interactions between teachers and children, as Perdue and Connor (1978) viewed the verbal contributions to be a "[contaminant]" that would interfere with focusing on non-verbal aspects. In contrast, the present study viewed verbal contributions as important contextual information that would contribute to interpreting the physical engagements among the children and teachers and children.

As some of the research above has demonstrated, the rates and forms by which children are touched by teachers and other children in educational settings seem to vary. In some circumstances, these variations may be associated with teachers' training, children's ages, and family practices. The variations in teachers touching children may also be related to teachers' vigilance in how they engage with children, given parents' and others' concerns about the incidence of reported physical and sexual abuse of children in childcare institutions. In response to these concerns, many childcare institutions have developed "no touch" policies that mandate teachers and other childcare personnel to restrict or restrain themselves from touching children (Johnson, 2000; Mazur & Pekor, 1985). Johnson (2000) suggests, however, that certain appropriate forms of touching during childcare may contribute to children's healthy development and learning in institutions and argues for greater research on the frequency and forms of touch in which teachers engage with the children in order to better understand the relevance of touch in educational settings.

3. The present study

Thus, given the developmental importance of and the little research available on physical contact beyond infancy, the present study examined the similarities and differences in physical contact involving preschoolers and kindergartners in a childcare center. Unlike previous studies relying on online coding of naturalistic observations, questionnaires, or interventions, the present study video recorded children's interactions with others in the context of their naturally occurring daily circle meetings and center activities in a childcare center located in New Hampshire. It was expected that physical contact between children and between teachers and children would be greater among preschoolers than kindergartners. When engaging with either peers or teachers, preschoolers were more often expected to be involved in purposeful forms of physical touch than kindergartners.

4. Method

4.1. Participants and childcare center

The participants in this study included 29 children and 14 teachers[1] from one childcare center located in a town of New Hampshire. The childcare center is a laboratory school affiliated with a local university which services both families within its hometown community and families of university staff and faculty. The participants were recruited by the researchers through letters, on-site visits, and word-of-mouth invitations with the generous assistance of the childcare staff. In appreciation for their participation in the study, the participant preschool and kindergarten classes each received a set of children's books to contribute to their classroom library collection.

4.2. Preschool classroom

Of the 16 children in the preschool class, 15 preschoolers (five females and 10 males) ranging between three and four years of age ($M = 3.51$ years, $SD = .46$) participated in the study, as did all of their eight female teachers. All families of the 15 preschoolers completed the demographic questionnaire.

[1] In this article, teachers are defined as including both lead teachers and teaching assistants.

Eleven preschoolers attended the childcare center for 35 hours or more (full-time), while the remaining four attended for less than 35 hours (part-time). Four preschoolers had attended the childcare center for one year, seven for two years, and four for three years. Twelve mothers and fathers reported their educational backgrounds and occupations. Mothers had an average of 18.75 grades of schooling ($SD = 2.49$; range = 13–20), and held middle-class occupations (e.g., professor, administrative assistant) or was a graduate student (1). Fathers had an average of 18.90 grades of schooling ($SD = 3.33$; range = 12–24), and held middle-class occupations (e.g., information technologist, research scientist) or was a graduate student (1). The preschoolers had an average of 2.06 siblings (range = 1–5). Eight preschoolers were European American/Caucasian, four were European, one was African American, one was Hispanic/Latino, and one child's ethnicity was not reported. Five families were Roman Catholic, two Jewish, one Unitarian, one Adventist, and six preschool families did not report their religious affiliation.

The three full-time lead teachers worked at the childcare center for an average of seven years (range = 4–10). Two of the teachers were European American/Caucasian, and one teacher did not report her ethnicity. Of the five undergraduate teaching assistants, one completed the demographic questionnaire and identified herself as a European American/Caucasian, who had previous experience working in various childcare settings.

4.3. Kindergarten classroom

Of the 19 children in the kindergarten class, 14 kindergartners (five females and nine males) ranging between five and six years of age ($M = 5.13$ years, $SD = .52$) participated in the study, as did all of their six female teachers.

Eleven families of the 14 kindergartners completed the demographic questionnaire, indicating that their children attended the childcare center for 35 hours or more (full-time). Five of the 11 kindergartners had attended the childcare center for one year, one for two years, one for three years, two for four years, and two for five years. Six mothers and fathers reported their educational backgrounds and occupations. On average, mothers achieved 18.37 grades of schooling ($SD = 3.33$; range = 14–24), and held middle-class occupations (e.g., professor, graphic designer, attorney) or was a student (1). On average, fathers achieved 19.83 grades of schooling ($SD = 3.06$; range = 14–22), and held middle-class occupations (e.g., physician, software engineer) or was a graduate student (1). The kindergartners had an average of 1.90 siblings (range = 1–4). Four kindergartners were European American/Caucasian, two were European, two were Asian/Chinese, and six kindergartners' ethnicity was not reported. Four kindergartners were Roman Catholic, one was Methodist, and the remaining kindergartners' religious affiliation was not reported.

Of the three full-time lead teachers, one completed the demographic questionnaire, identifying herself as a European American/Caucasian, who had worked at the childcare center for eight years. Of the three undergraduate teaching assistants, two completed the demographic questionnaire. One identified herself as European American/Caucasian and the other as Italian. Both teaching assistants had previous experience working in various childcare settings.

4.4. Procedure

Once participants appeared to be comfortably and naturally going about their daily activities in the presence of the researcher and the video recording equipment, the actual data collection began with each participant being video recorded one at a time. All but four participants were video recorded for a total of 20 minutes except for three preschoolers and one kindergartner who were video recorded for 15 minutes each. The recordings were spread across four, five-minute sessions: morning circle meetings, morning center activities, afternoon circle meetings, and afternoon center activities. "Circle meetings" involved all class members sitting down together on the floor in a circle and engaging in activities planned for them by their teachers. Examples of circle meeting activities included singing songs, reading stories, and talking about different topics, such as learning about the weather or an upcoming holiday. In contrast, during "center activities," children were able to choose to participate among various activities made available to them by their teachers. Examples of center activities included playing blocks, practicing how to write letters, drawing, dramatic play, water play, and snack time.

For each five-minute video recording session, the researchers drew a participant identification number from an envelope to determine which child would be video recorded. Each of the four, five-minute video recording sessions per child was distributed across different days of the week. Only one child was the focus of video recording at a time.

4.5. Coding

The coding scheme was developed through an ethnographic analysis of the video data and a review of the literature on physical contact. The coding focused on capturing the *episodes of physical contact* defined as any form of body-to-body contact between individuals. For each session, coders identified only those episodes in which the focal child was involved in body to body contact with other(s), excluding episodes of physical interaction that did not involve the focal child. For each episode of physical contact, coders identified the *purposeful* or *incidental* function(s) that the physical contact served, the personnel involved (i.e., adult or child and their gender), and the initiator of the physical contact (i.e., teacher, focal child, or other child), using the following coding categories:

Purposeful physical contact: acts people use to communicate through touch, as listed below.

Affectionate physical contact: A person showing fondness toward another person in a caring, gentle, fun, entertaining, and friendly manner, such as a person tickling, kissing, patting, or hugging another person.
Physical retrieval contact: A person physically gets or removes another person from one location to another. Examples include taking a person's hand and walking them to another area or picking a person up and carrying them to another area.
Caretaking physical contact: A person attends through touch to another person's bodily well being, such as maintaining their hygiene or attire. Examples of such contacts include a person helping clean another's face or hands, or tying another's shoe laces.
Control of behavior through use of physical contact: A person uses part(s) of their body to redirect another person's attention or to alter their behavior without removal from the activity. Examples include putting a hand on a person's shoulder while talking to redirect their attention or holding a person's arms when explaining a concept to them.
Instructive physical contact: A person uses their body in some form to guide another person in learning a task. Examples include physically holding another person's hand when trying to write their name or helping them mold clay, paint, or move a mouse for a computer game.
Aggressive physical contact: A person grabs another person in anger, shakes or handles another roughly, or hurts another in any way. Examples include hitting, scratching, or shaking another person's body to gain access to a toy.
Play physical contact: A person touches another person as they engage in formal or non-formal rule-based or pretend games that indicate a clear goal of enjoyment or entertainment. Examples include a person touching another person's hands when clapping to play the game patty cake, touching another person's back when jumping over them in a game of leap frog, or taking turns bumping into one another jokingly while waiting in line for an activity.

Incidental physical contact: A person appears to accidentally, inadvertently, or unintentionally touch another person without any particular clear meaning or inherent purpose to the coder. Examples include two persons brushing shoulders while passing by one another in a tight space or a person's legs touching another's while sitting side by side in a circle meeting.

4.6. Reliability

The coding of the video recorded sessions was conducted by two undergraduate research assistants who were unaware of the hypotheses of the study. The two research assistants coded the video data simultaneously, reaching consensus in each of their coding decisions. A second reliability coder (the first author) overlapped coding of 20% of the data. Reliability coefficients indicated excellent reliability for the coded variables – Cohen's Kappa ranged from .94 to .98 and percent agreement ranged from 92% to 97%. Percent of agreement was calculated by dividing the number of agreements by the sum of agreements and disagreements, multiplied by 100.

5. Results

Due to the differing lengths of the video-recorded sessions across participants, the data presented are based on the number of episodes involving physical contact per minute. The functions and personnel involved in physical contact episodes were analyzed using *t*-tests for independent groups, with Bonferroni corrections for family-wise error. The statistical significance levels are set at $p < .007$, unless otherwise indicated. However, although the observations across classes are independent, the observations within each classroom are not independent. Therefore, the analyses using *t*-tests should be interpreted cautiously.

5.1. Overall physical contact involving class members

Although low frequency of physical interactions occurred across circle and center activities for each grade, there existed similar patterns of physical contact across circle and center activities in each of the preschool and kindergarten classes. Consequently, for each grade, circle and center activities were combined for analyses. Preschoolers were involved in .95 ($SD = .45$) episodes involving physical contact with others (referring to both teachers and children combined, unless otherwise indicated) per minute compared to .27 ($SD = .18$) for kindergartners, $t(27) = 5.26$, $p < .001$ (see Fig. 1). This finding indicates that preschoolers were involved in almost one touch per minute.

Purposeful Physical Contact: Consistent with our expectations, preschoolers were involved in .46 ($SD = .25$) episodes involving purposeful touches with others per minute compared to .10 ($SD = .13$) for kindergartners, $t(27) = 4.93$, $p < .001$ (see Fig. 1). Analyses revealed that affectionate touches appeared to play a large role in distinguishing the extent of purposeful touches involving preschoolers and kindergartners. Affectionate touch has been suggested to provide an important means through which young children seek proximity with others. Consequently, affectionate touches were further examined, while the remaining categories of physical contact (e.g., caretaking, aggressive) which rarely occurred in both the preschool and kindergarten classroom were not analyzed (see Fig. 2).

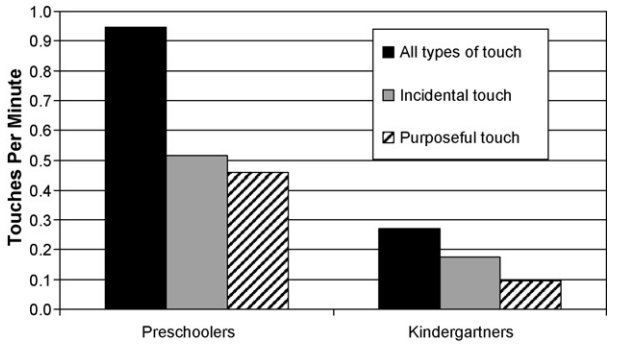

Fig. 1. Prevalence of physical contact.

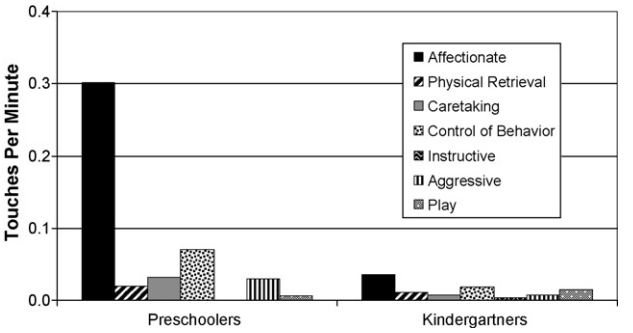

Fig. 2. Functions of physical contact.

Kindergartners were involved in .04 ($SD = .07$) episodes of affectionate touches with others per minute compared to .30 ($SD = .18$) for preschoolers, $t(27) = 5.21$, $p < .001$. An affectionate physical contact episode between preschoolers Mary (the focal child) and Sally is provided below as an illustration.

> As they sang, Mary and Sally, who were sitting near each other, simultaneously rose up from their sitting position onto their knees. Mary opened her arms, turned toward Sally and wrapped her arms around Sally's shoulders. Sally smiled and returned the gesture, wrapping her arms around Mary. The two children were in a hugging position for approximately ten seconds. The children then released one another, smiled, and continued singing the song with the rest of their class.

Preschoolers were involved in .20 ($SD = .16$) episodes involving affectionate touches with their teachers per minute compared to .04 ($SD = .05$) for kindergartners, $t(16) = 3.39$, $p < .004$. It is notable that of the 15 preschoolers, 14 preschoolers engaged in affectionate touch, whereas only four of 14 kindergartners did. Preschoolers initiated in .13 ($SD = .13$) episodes of affectionate touches with their teachers per minute compared to .00 ($SD = .00$) for kindergartners, $t(16) = 3.74$, $p < .002$. Teachers' initiation of affectionate touches toward the focal child were similar across preschoolers ($M = .07$, $SD = .09$) and kindergartners ($M = .04$, $SD = .05$), $t(16) = 1.06$, $p < .32$. Focal children in both preschool and kindergarten were similarly involved with their peers in affectionate touches [preschoolers: $M = .12$, $SD = .09$; kindergartners: $M = .09$, $SD = .05$, $t(16) = .98$, $p < .35$].

Incidental Physical Contact: Incidental touches, which entailed touches with no apparent purpose, also stood out in the analyses in distinguishing preschoolers' and kindergartners' engagements with others. Preschoolers were involved in .51 ($SD = .35$) episodes of incidental contact with others per minute compared to .18 ($SD = .12$) for kindergartners, $t(27) = 3.41$, $p < .002$ (see Fig. 1). To illustrate, an example of incidental physical contact between two preschool boys is provided below.

> Tony (the focal child) was playing with his left hand inside of his sleeve while listening to his teacher. When Tony decided to take his hand out of his sleeve he accidentally brushed Ed's arm who was sitting to his left. Ed did not seem to notice the physical contact and both boys continued listening to their teacher talking.

6. Discussion

The findings of the present study demonstrated that preschoolers participated in greater physical contact with others than did kindergartners across both circle and center activities. Preschoolers engaged also in greater purposeful touches with others than did kindergartners. Affectionate physical contact stood out as the purposeful touch more likely to occur among preschoolers than kindergartners.

The differences in extent of physical contact across preschoolers and kindergartners may be reflective of the developmental needs of each group of children and the cultural nature of what constitutes appropriate physical contact in the childcare institution. The preschoolers' greater participation in purposeful physical contact with others compared to kindergartners may suggest that preschoolers may be in greater need of others' physical involvement in their care, guidance, and accomplishment of tasks than the kindergartners. Preschoolers may rely more on physical contact with others to accomplish their or the teachers' goals and perhaps may be less skillful in their forms of engagements, which may relate to their higher involvement in incidental touch compared to kindergartners. The preschoolers compared to the kindergartners may not be as cognizant, bothered by, or monitoring their engagement in incidental touches with others. Kindergartners, on the other hand, may have achieved more proficiency in their management of their fine motor, problem-solving, social, and verbal skills which may allow them to more clearly and effectively communicate with others verbally, perhaps relying less on physical contact (Johnson, 2000; Lindon, 2003). This growth in skills may also be related to kindergartners having acculturated to what is deemed appropriate physical contact in a US childcare institution and reflective of physical contact in families, as will be described below.

Preschoolers also engaged in more affectionate touch when involved with their teachers than kindergartners. Interestingly, preschoolers were the initiators of much of the affectionate touch toward their teachers than kindergartners. Teachers in both the preschool and kindergarten classes did not differ in initiating affectionate touch with the focal children. Previous research found female teachers to provide infants and toddlers with more affectionate touches than preschoolers (Cigales et al., 1996; Field et al., 1994; Perdue & Connor, 1978). It may follow that older children, such as preschoolers and kindergartners, may receive less and in turn elicit few affectionate physical contact from female teachers (which comprised all teachers in the present sample) than younger children, such as infants and toddlers. Teachers' expression of affectionate touch toward young children has been suggested to vary related to the activities in which children are involved and the gender of the partners (Perdue & Connor, 1978; Twardosz et al., 1987). However, the pattern of findings of physical contact in the present study were similar across circle and center activities. Gender differences were not examined due to the small and unequal number of boys and girls in the sample.

Younger children, such as preschoolers, might be involved in more affectionate contact as part of their security-seeking behaviors and require others to monitor their activities and engagements in order to keep them safe and focused in the activities in the childcare center. In contrast, older children, such as kindergartners, may not require as much physical closeness and their behaviors may be less monitored by their caregivers as they may have adapted to sustaining focus on childcare activities, becoming more autonomous from their caregivers (Jones & Yarbrough, 1985). This suggestion may be supported by the finding that in both circle and center activities in the present study, only four kindergartners (28.6%) compared to 14 preschoolers (93.3%) were involved in affectionate touch with others. This finding may be applicable to circumstances when adult caregivers are present with children, as Hatch (1985) has found that when kindergartners were without adult supervision, expressing affection (e.g., hugging) appeared to be a common form of physical contact among kindergartners. Further study on preschoolers' and kindergartners' engagements with one another with and without adult supervision in childcare centers is needed to help understand the distinctions in patterns of findings regarding affectionate physical contact (as well as other forms of physical contact).

Although it can be argued that physical interactions decline as children age, it is also possible that as children age their understanding of the societal norms of their cultural communities and their institutions expands. The presence of more physical contact among preschoolers may be related to their not yet being able to more skillfully tune into the subtle societal cues that indicate what physical contact with others is and is not acceptable (Jones & Yarbrough, 1985; Thayer, 1986). This process of acculturation to the norms and policies of the childcare institution, as may be demonstrated by the kindergartners' forms of involvement in physical contact, prepares children for later participation in Western schools, where they will spend a large part of their lives. In school, children appear to need to adapt to the social rules of physical contact which seem to articulate children keeping their hands to themselves and engaging in other forms of more distal engagements (e.g., seating arrangements at individual desks). This appears consistent with Huang, Phares, and Hollender's (1976) suggestion that the larger mainstream US society may be characterized as a "non-contact culture" where extended areas of personal space are provided and limited touch is considered to be the societal norm. This "non-contact" culture contrasts with those considered more "contact cultures," such as Italy, where touch has been observed to be more prevalent and encouraged among children and between children and adults (Huang et al., 1976).

Perceptions of physical contact have also been shown to vary related to particular circumstances. Hyson, Whitehead, and Prudhoe (1988) examined three groups' – parents', non-parents', and childcare professionals' – perceptions of situational aspects of physical contact. Participants were presented with video scenes of female and male adults touching children in dyadic adult-child contexts, in which they were, for example, playing and eating. Prior to viewing the video scenes, half of each group of adult participants was given a statement indicating the prevalence of child sexual abuse, while the other half of each group of adult participants was given a statement suggesting the positive effects of physical contact. In addition, the participants were informed that the adults in the video scenes were either the child's parent or a childcare professional.

Hyson et al. (1988) found that those participants prompted with the child abuse statement significantly disapproved of more scenes containing physical contact than did those participants prompted with the statement about the positive effects of physical contact. Furthermore, across all three adult groups, male adults depicted in scenes containing physical contact received lower approval ratings than female adults, regardless of the statements provided. In contrast to the parent and non-parent groups, childcare professionals evaluated the touch scenes with higher approval ratings regardless of the statement

provided or whether the adults depicted in the scenes were the child's parents or childcare professionals. Parents were more likely to perceive touch interactions between children and childcare professionals more negatively, compared to the non-parent and childcare professional groups who had more often judged the same interactions as positive and affectionate. Such negative perceptions among parents may potentially reflect their apprehension about adults' physical contact with children, especially when the adults are non-family members (Hyson et al., 1988).

Parents' apprehension and concerns about non-family members' physical contact with their children and reports of incidents of inappropriate physical interactions in childcare institutions have contributed to the adoption of "no touch" policies in many childcare institutions (Hyson et al., 1988; Johnson, 2000; Mazur & Pekor, 1985). Under these policies, educators have become more vigilant and cautious about the ways in which they engage physically with children. Another consequence of these policies appears to be the growing feminization of childcare in which most educators are women, as men have often been associated as abusers (Johnson, 2000). The "no touch" policies appear to be in accordance with US dominant mainstream societal norms emphasizing minimal physical contact among children and their adult caregivers. However, some researchers and educators have argued that children's healthy development requires greater appropriate physical contact among children and childcare professionals and have devised intervention studies to increase the incidence of physical contact among children and adults (Field et al., 1994; Wheldall et al., 1986).

In the childcare center in the present study, our informal observations indicated that all the teachers and teaching assistants of both preschool and kindergarten classes tended to encourage children to keep their hands to themselves and to express their ideas and emotions verbally. Teachers and teaching assistants, however, did not seem to refrain from occasionally touching children in appropriate ways. In an interview with the director of the childcare center about physical interactions between teachers or teaching assistants and children following the study, he expressed that there was no explicit "no touch" policy in place for teachers or teaching assistants since teachers and teaching assistants were always in the presence of one another when engaging with children, reducing any concern about inappropriate physical contact with children.

In interpreting the findings of the present study, it is important to keep in mind that they are based on naturally occurring interactions within a US childcare facility affiliated with a university and may not be generalizeable to other childcare facilities. For instance, the childcare center in the present study not only serves children and their families, but also serves as a laboratory teaching institution for college students, many of whom are interested in pursuing careers working with children. In addition, the total number of lead teachers and undergraduate teaching assistants per classroom was relatively large compared to typical adult-child ratios in other childcare facilities where there may exist only one or two teachers per classroom. Also, the lead teachers and undergraduate teaching assistants, all of whom were female, and the children comprising the small sample were primarily of European American, middle-class descent. Finally, the parents of the preschoolers and kindergartners were highly educated, with most of their parents holding prestigious occupations.

Family interactions may shape children's views about physical contact. It may be that parents expect and encourage their children to have limited physical contact with teachers and peers in school and other institutions. Parents' views may be associated with wanting their children to behave appropriately and be safe in settings outside of the home. This perspective on physical interactions may also reflect family members' engagements at home with non-family members which emphasize US societal norms of no or limited touching of others.

In sum, the findings of the present study contribute to understanding the extent of how preschoolers and kindergartners are involved in physical contact with others in an US childcare institution. The extent and types of physical contact in which children and teachers were involved may contribute to shaping the socioemotional and cognitive relations children develop with others. Future research would benefit by examining physical contact among participants in various childcare centers with larger samples of children and teachers (including male teachers) in different cultural communities in the US and abroad. It would also be useful to further research efforts by gathering additional information about the perspectives and interpretations that teachers and parents may have about physical contact among children and between children and adult caregivers to open up dialogue about this topic and its impact on children's development.

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