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RELATION BETWEEN CHILD ABUSE RISK AND SECURITY OF  
MOTHER-INFANT ATTACHMENT AT ONE YEAR

by

Miriam Egan

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family and Human Development

## ACKNOWLEDGMENTS

I would like to thank the members of my thesis committee, Dr. Brent C. Miller and Dr. Keith T. Checketts, my major professor, Dr. Lori A. Roggman, and my husband, Rodney L Egan.

Miriam Egan

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## ABSTRACT

Relation Between Child Abuse Risk and Security of  
Maternal-Infant Attachment at One Year

by

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Utah State University, 1994Major Professor: Dr. Lori A. Roggman  
Department: Family and Human Development

Although previous studies have shown that children who have been abused are more likely to be classified as insecurely attached to their mothers, research has not examined risk for child abuse when measured as a continuous variable in relation to security of attachment when measured as a continuous variable. This study examined the relation between risk of child abuse (as measured by the Child Abuse Potential Inventory and the Harsh Parenting Scale) and security of mother-infant attachment (as measured by the Q-sort of Infant Attachment) at 14 and 17 months. Results supported the view that there is a negative relation between these variables in a nonclinical sample drawn from the general population. Furthermore, results of exploratory analysis suggest the mother-infant attachment relationship at 14 months may act as a buffer against risk of child abuse at 17 months.

(59 pages)

## PROBLEM STATEMENT

### Defining the Problem

A recent study of the incidence of child abuse and neglect in the United States estimated that over 1.5 million children were "at risk or threatened with harm" in 1986 (U.S. Department of Health and Human Services, 1991). According to the same study, more than one million children experienced demonstrable harm as a result of maltreatment in 1986. This number was 66 % higher than the overall incidence rate of 1980. As the rate of reported child abuse cases increases, so does awareness of the need for reliable research to illuminate the vital issues concerning this subject. Research has shown that physical abuse by an infant's mother is disruptive to the mother-infant attachment relationship (Browne & Saqi, 1988; Crittenden, 1985a; Lamb, Gaensbauer, Malkin, & Schultz, 1985; Lyons-Ruth, Connell, Zoll, & Stahl, 1987; Schneider-Rosen & Cicchetti, 1984).

Other parental behaviors associated with risk of physical abuse, although not as severe, may also be disruptive to the mother-infant attachment relationship. The purpose of this study is to examine the influence of behaviors associated with risk of physical child abuse upon the mother-infant attachment relationship in a convenience (volunteer) sample drawn from the general population.

### Defining the Population

It is important to study risk factors of child abuse using the general population rather than a clinical population for several reasons. First, although a strong relation does exist between being abused as a child and becoming abusive as a parent, there is a large population of abusive parents in the United States who were not abused as children. By using current vital statistics which include how many children there are now in the United

States and how many of them have undergone abuse, projections of the number of these abused children who will become abusive to their own children may be made. Hutchings (1988) discovered that nearly one third of those persons who were abused in childhood by their parents would become abusive to their own children in adulthood. From the estimate of 1.5 million children abused in 1986, it may be projected that 495,000 of these abused children will actually be abusive to their own children. In 1989 there were some 62 million children in the United States. If 2 million of these children are excluded due to the possibility that they were abused, 60 million children remain who were not abused. Hutchings (1988) also found that 2% of those children who are not abused in childhood will become abusive as adults. According to this projection, about 1.2 million of these persons (who were not abused as children) will abuse their own children.

Although these figures are only rough approximations, they are useful in showing that although a child who has been abused is more likely to abuse his/her own children than a child who has not been abused, predictions show that more total numbers of children are likely to be abused by a parent who was not abused as a child than by a parent who was abused as a child. These predictions, indicating that a greater number of parents from the general population are likely to become abusive to their own children than are the number of parents from "clinical" or "abusive" families, illuminate the importance of studying family characteristics predictive of abuse that exists in the general population.

#### Behaviors of the Nonclinical Population

It is important to study risk factors of child abuse in the general population because even parental behaviors evident in nonclinical populations have been found to have negative developmental repercussions for children. Bryan and Freed (1982) found that

children who had received higher levels of corporal punishment had lower self-esteem and lower perceptions of their cognitive abilities in comparison to peers and were more likely to be involved in delinquent activities when they reached adolescent and teen years. Sims and Mason (1991) found in their study of a nonclinical population that children classified as insecure/avoidant by the Ainsworth Strange Situation were also likely to receive more physical punishment compared to those classified as secure or insecure/resistant.

Physical punishment has also been found to be a very strong predictor of long-term aggressive behavior (Trotter, 1976). Main and Goldwyn (1983) noted that maternally rejected children of normative samples display negative development characteristics similar to abused children, namely, they were more aggressive, self-isolating, and unsympathetic. Therefore, it may be concluded that even parental behaviors which are currently viewed by society as normative, or not abusive, may be disruptive to a child's development.

#### Defining Child Abuse

Finally, it is important to study risk factors of abuse from the general population so that a new perspective of child abuse may be drawn. One purpose of this study is to re-examine the term child abuse, and to aid in the development of a new conceptualization of what the term child abuse means. To date, most of the research in the area of child abuse has used a dichotomous design comparing nonabusive and abusive populations. According to the conceptualization of this study, child abuse is a term which may be viewed more appropriately as a continuous variable existing in the general population, rather than as a dichotomous, categorical variable. The definition of child abuse as a category has been empirically ambiguous.

Empirically, the term child abuse is susceptible to much individual interpretation. The definition of abuse as a category has been misleading and inconsistent. At one end of the spectrum is a relatively liberal definition of child abuse, "any behavior that inflicts significant pain on a child, regardless of whether it leaves marks" (Forward, 1989, p. 119). At the other end of the spectrum is a more stringent definition given by the legal system. In the legal system, child abuse is primarily confined to those injuries which can be seen or measured. The Child Abuse Prevention, Adoptions and Family Services Act of 1988 (Public Law 100-294) defines physical child abuse as "characterized by infliction of injury by punching, beating, kicking, biting, burning, or otherwise physically harming a child." It has been argued that the "range of definitions of physical abuse covers a continuum from ordinary physical punishment (such as a mild slap to the buttocks) at one end to murder of the child at the other end" (Bryan & Freed, 1982, p. 77).

The perspective of this study is that child abuse, like other parenting behaviors, is most appropriately viewed on a continuum existing in the general population. This perspective of child abuse is more appropriate for several reasons: First, it takes into account all of the various definitions of abuse which have been given. Second, it takes into account the reality that all parents vary in the functionality of their parenting behaviors depending upon many variables. Third, it confronts the scapegoating which a dichotomous variable (labelling abusive versus nonabusive parents) has often generated, and projects the reality that all parents have the potential to demonstrate abusive behaviors at times towards their children.

In summary, for developing strategies to prevent child abuse, it is important to understand how negative parenting behaviors and the potential for abuse are related to less than optimal mother-infant relationships. Disruptions of the attachment relationship may occur not only as categorical markers, able to distinguish between physically abusive

and non-physically abusive populations, but also as correlates of child abuse potential on a continuum. This study proposes to examine how the potential for abuse and insecure attachment are related to each other when both are measured as continuous dimensions in the general population



## LITERATURE REVIEW

### History of the Child Abuse Concept

Historically, "child abuse" is a relatively new concept. In most countries throughout the world, children have traditionally been viewed as property belonging to their parents, and as such were subject to any treatment which the parent deemed appropriate. For example, in England during the 17th and 18th centuries, it was legal for a parent to treat a child in any manner, including behaviors which would end the child's life (Lincoln & Straus, 1985). Child abuse reporting laws were not implemented in each of the 50 states until the late 1960s. From this history it can be seen that child abuse is a relatively new concept to our culture, only existing as a legal issue of focus for some 30 years, during which time there have been many debates over just what does and what does not constitute child abuse.

The first introduction of child abuse into the academic arena came by way of Kempe's 1962 article "The Battered Child Syndrome." Although no doubt a monumental and positive step in addressing and fighting the phenomenon of physical abuse, this article was also a first step in the development of a dichotomous, abusive versus nonabusive conceptualization. Even the use of the medical term "syndrome," applicable only to those parents who are in some dimension abnormal or sick, emphasized a theoretical gulf which hypothetically lies between the abusive and the "normal" population. Studies comparing those families which did and did not have this syndrome or sickness soon began to appear and still do today (e.g., Kempe, Silverman, Steele, Droegemueller, & Silver, 1962; Salzinger, Feldmen, & Hammer, 1992).

As the construct has evolved, it has done so in a categorical rather than a continuous fashion (Schneider-Rosen, Braunwald, Carlson, & Cicchetti, 1985). Four main

categories of child abuse are now being studied: physical abuse, sexual abuse, emotional abuse, and neglect. There are very few places in the literature where these variables are discussed as continuous rather than as dichotomous variables. This study is a step to fill this gap that exists in the literature.

Because child abuse has been conceptualized as a dichotomous variable, research examining the relation between child abuse and the caregiver-infant attachment relationship have also been viewed under a two-dimensional, dichotomous microscope. This review will discuss this literature and show how an expansion of these concepts in terms of a continuum will serve as an enhancement to the understanding of their related characteristics.

#### Attachment and its Relation to Child Abuse

The application of Bowlby's (1969) attachment theory to abusive mother-child relationships has formed a theoretical basis for much of the literature in this area. Bowlby's theory in its most basic interpretation describes attachment behavior as "any behavior that results in a person attaining or retaining proximity to some other differentiated and preferred individual" (Bowlby, 1969, p. 39). In the case of a young child, maintaining proximity may include such behaviors as checking mother's location with the eyes, smiling, making noises, or otherwise responding to the mother. Attaining proximity may include such behaviors as calling or moving towards the mother or protesting by crying when the mother leaves or is out of view.

In contrast to the Freudian concept of regression (used to describe response to stresses too great for the ego to maintain), Bowlby describes response to great amounts of stress in attachment relationships as resulting in development following "a deviant pathway" (Bowlby, 1969, p. 41). This explanation appropriately describes the mother-

infant attachment relationship that typically coincides with child abuse, namely, physical abuse of a child by the primary attachment figure produces great stress in the relationship requiring a deviant pathway of development for that relationship. Although Bowlby discussed such deviance as resulting in avoidant and resistant behaviors, it was Ainsworth (Ainsworth, Blehar, Waters, & Wall, 1978) who operationalized these behaviors in the A (insecure/avoidant), B (secure), and C (insecure/resistant) categories of behavior observed in the Strange Situation.

The writings of Sroufe and Waters (1977) make clear that the health of the attachment relationship is dependent upon both maternal and child characteristics. As a mother displays predictable and responsive behavior towards her child's expressed needs, the child learns to use mother as a "secure base," a source from which to gain both physical and emotional safety and security so that the child may feel confident in exploring the environment. When physical abuse occurs, both mother and child interact in a way which contributes to the disruption of this secure relationship. The mother fails to meet the needs of the child, and the child is unsuccessful in using the mother as a source of security. The mother's infliction of pain to the child represents a violation of her protective role, and is likely to confuse the child (Maurer & Wallerstein, 1984). The mother is now not only a source of pleasure and comfort, but also a source of discomfort and pain. The distinctive interaction between mother and child which occurs as a result of physical abuse has been described by the new, specific categorization of the Ainsworth Strange Situation, a type D, disorganized, disoriented attachment (Carlson, Cicchetti, Barnett, & Braunwald, 1989).

#### Measuring Child Abuse

Evidence of the process by which physical abuse may lead to a disruption in the

attachment relationship has been shown in several studies (Browne & Saqi, 1988; Crittenden, 1985a; Lamb et al., 1985; Lyons-Ruth et al., 1987; Schneider-Rosen & Cicchetti, 1984). However, each of these studies has used categorical instruments for their measurement purposes. To measure the mother-infant attachment relationship, they have implemented the categorical Ainsworth et al. (1978) Strange Situation (1978). To measure abuse, these studies are vague in their measurement process, most often simply differentiating between abusing versus nonabusing or maltreating versus nonmaltreating populations. Frequently, no explanation is given as to how this differentiation was established. Sometimes in its place a reference to an agency which has identified abusive parents is cited. Schneider-Rosen and Cicchetti (1984) based their differentiation between abusive versus nonabusive populations on legal records and reports of social service workers. Lamb et al. (1985) defined abusive parents as those parents who have been referred to protective service authorities. Lyons-Ruth et al. (1987) defined abusive parents as those who have been referred by a pediatric nurse, a social worker, or a mental health provider. Carlson et al. (1989) made their differentiation according to those families receiving, versus those families not receiving, child protective services. Schneider-Rosen et al. (1985) gave no explanation for their identification of maltreated versus nonmaltreated groups.

Three of the above studies give more categorical differentiation to their groupings. Schneider-Rosen et al. (1985) differentiated between types of abuse (i.e., physical injury, emotional mistreatment, physical neglect, and sexual abuse). Crittenden (1985a) differentiated between abusing, neglecting and problematic mothers. Carlson et al. (1989) used the new type D, disorganized/disoriented category specifically designed to describe the attachment behavior of abused infants. As can be seen from these studies, many different methods currently are used to differentiate between abusing versus

nonabusing populations, and no two studies seem to concur on which method is the most appropriate. None of these methods, however, conceptualizes child abuse as a continuous rather than a categorical variable.

As previously discussed, rather than the typical comparative analysis, examining categorical differences between physically abusive and nonabusive populations, a central aim of this investigation is to examine risk factors associated with physical child abuse potential which exist in the general population using instruments rendering continuous scales. The continuous measure of child abuse potential chosen for this study was the Child Abuse Potential Inventory (CAP) developed by Milner (1986) and an additional set of questions regarding maternal experiences with the use of physical punishment (Simons, Whitbeck, Conger, & Chyi-In, 1991). These measures will be described in more detail in the Method section.

#### Measuring Attachment

Just as child abuse has typically been measured as a categorical variable, so has mother-infant attachment. Most of the studies showing that abused infants are significantly more likely than nonabused infants to form an insecure attachment relationship with their primary caregiver have measured infant-mother attachment by using the Ainsworth et al. (1978) Strange Situation, which categorizes infant attachment behavior into three categories: A insecure/avoidant, B secure, and C insecure/resistant. This measure assesses the pattern of a child's responses to repeated separations and reunions with the mother (Cicchetti, 1987; Lyons-Ruth et al., 1987; Schneider-Rosen & Cicchetti, 1984).

In some recent analyses, the validity of the Strange Situation to identify characteristics of attachment has been questioned. Goldsmith and Alansky (1987) found in their meta-

analysis of 15 studies using the Strange Situation, a weaker relation between sensitive, responsive maternal interaction and secure attachment than previous literature indicated. Field (1987) suggested that infant proneness to stress may be an influential factor in the identification of infants with secure versus insecure attachments. That literature review suggests that the Strange Situation is a poor predictor of later child behavior problems and lacks validity in that it fails to control for the effects of differences in caregiver's behavior or children's temperamental responses to separation. For example, infants who experience regular day care or preschool time away from mother are very likely to react differently to the Ainsworth et al. (1978) Strange Situation than are infants who have never or seldom been left with a babysitter or caregiver other than the mother. Field also cited evidence that higher infant scores on the Bayley Mental Scale (Bayley, 1969) are correlated with greater security of attachment, suggesting that the mental capacity of the infant may be a contributing factor in attachment classification as measured by the Strange Situation (Field, 1987). Important to the present study, therefore, is Field's suggestion that mother-infant attachment relationships are not fully identified by the Ainsworth Strange Situation, and that complete measurement of this relationship may "require a more complex paradigm than the Strange Situation, a paradigm that becomes more ecologically meaningful by tapping behavior in both stressful and nonstressful situations" (p. 858).

In light of these findings, it is one of the purposes of this study to examine security of mother-infant attachment using an instrument other than the Strange Situation. The Q-sort assessment of infant attachment, developed by Waters and Deane (1985), measures a child's ability to use the mother as a secure base. Through the sorting of 90 descriptive statements, a mother (or an observer) identifies characteristics most and least similar to the child's typical behavior. Ninety cards contain statements describing the child's ability

to use the mother as a secure base and other characteristics related to attachment such as child independence, child affect towards the mother, and child affect towards others.

The Q-sort measure may be seen as fulfilling Field's suggestion because it assesses child behavior towards the mother (secure base behavior) during both stressful and nonstressful situations by using descriptive statements which refer specifically to both types of situations. For example, one card describing a stressful situation is "Child cries when you leave him or her at home with babysitter, father, or grandparent." An example of a card describing a nonstressful situation is "When your child finds something new to play with, he or she carries it to you or shows it to you from across the room." Because the measure is a report of typical child behavior in the home, the child's natural setting, the Q-sort is also less sensitive to individual variations in infant stress and maternal behaviors that may be exaggerated by the novelty of both the setting and the interactions prompted by the Ainsworth Strange Situation. The Q-sort measure taps into all types of child behaviors, not just those in response to separation and reunion. Individual differences in child behavior due to regular separations of day care would be greatly reduced if not completely overcome.

For the purposes of this study, the Q-sort is advantageous because rather than giving only a categorical measurement of the mother-infant attachment relationship, it provides a continuous measure of the security of attachment. The conceptualization of attachment following a continuous rather than a categorical system is an important addition to the literature in this area because it offers a broader perspective of attachment. Also, following the previously discussed argument that child abuse is more appropriately viewed as a continuous rather than as a categorical variable, attachment may also more appropriately be viewed on a continuum. The examination of attachment on a continuum and the relation of this attachment continuum to a continuum of child abuse potential is

appropriate to the focus of this study and the idea that behaviors which are not typically categorized as child abuse may nevertheless have negative developmental repercussions for the child very similar to those associated with actual child abuse.

#### Common Predictors and Outcomes

Another deficit in the literature concerning child abuse and infant-mother attachment is the lack of studies that examine the common predictors and outcomes of these two variables. Just as physical abuse leads to a disruption of the attachment relationship, other parenting behaviors, which may not be labelled as abusive by society but are nevertheless associated with the risk of physical child abuse, may also result in a decrease in the security of the attachment relationship. As a prologue to this conceptualization, this review will compare the empirically based predictors and outcomes of child abuse and of mother-infant attachment in order to determine their similarities and differences. To the extent that correlates of abuse and attachment are similar, a model of a continuous relation between abuse potential and security of attachment would be supported.

Like theoretical reasoning, empirical research also points to many of the same predictors and outcomes of child abuse and of mother-infant attachment. This review has confined these similarities into three major areas: characteristics of the mother, characteristics of the child, and the combination of these characteristics. Characteristics of the mother include the mother's personality and the mother's relationships. Characteristics of the child consist of behavioral traits and development. Combinations of characteristics refer to interactions between mother and child characteristics.

Maternal characteristics. The most obvious common predictor of these two variables (child abuse and insecure attachment) is a lack of sensitive and responsive mothering. Four studies from the attachment literature demonstrate this relation. Benn (1986), using



the Ainsworth Strange Situation, found in the study of 30 Caucasian mothers and their first-born sons that mothers who displayed interaction, acceptance, and sensitivity were significantly more likely to have a securely attached son. Similarly, Goldsmith and Alansky (1987) found in their meta-analysis of studies using categorical and continuous measures of attachment security that sensitive, responsive maternal interaction predicted security of attachment, although not as strongly as previous research may have suggested. The study of Teti, Nakagawa, Das, and Wirth (1991) found that mothers who were positive, sensitive, involved, and flexible had children who were more securely attached as measured by the Attachment Q-sort, a continuous measure of attachment security (Waters & Deane, 1985). A cross-cultural examination of this relation (Van IJzendoorn, 1990) provided evidence that for both Dutch and Surinam-Dutch mothers, more maternal responsiveness predicted more securely attached toddlers.

Five studies from the child abuse literature similarly demonstrate a relation to a lack of sensitive, responsive mothering. Malkin, Lamb, and Gaensbauer (1986) found that maltreating mothers appeared to be less sensitive in their interactions with their 18-month-old children. Ainsworth et al. (1978) and Lamb et al., (1985) similarly found abusive mothers to be less sensitive to their children. Kavanagh, Youngblade, Reid, and Fagot (1988) found that parents who had abused their children responded significantly less to their children's initiations of interaction. Maternal interactive styles were also studied by Alessandri (1992), who found that abusive mothers were less involved and more negative with their children.

Another maternal characteristic may be described by the mother's reactions to the child, a stimulus-response approach. Donovan and Leavitt (1989) found that some mothers had an aversive conditioning to their 5-month-old infant's impending cry, and that the infants of these mothers were more likely to display an insecure attachment at 16

months of age. In the child abuse literature, Bauer and Twentyman (1985) found that mothers who had a previous history of child abuse were significantly more likely to react with annoyance to both social and nonsocial stimuli, and that these mothers also consistently ascribed more malevolent intentionality to their child than did mothers who did not have a history of child abuse.

Maternal depression is also related to both attachment and child abuse. The concept that mothers who are more depressed will be more likely to have infants displaying an insecure attachment was supported by Donovan and Leavitt (1989). Lyons-Ruth, Zoll, Connell, and Grunebaum (1986) found a curvilinear relation between attachment security and depression. Those mothers who were not at all depressed were likely to have an insecure/avoidant infant. To clarify this curvilinear relation, the authors suggested that mothers who claimed to be extremely undepressed could in reality be practicing high amounts of repression. The study of Culp, Culp, Soulis, and Letts (1989) supports the concept that mothers who are physically abusive to their children have higher levels of depression than mothers who are not physically abusive to their children. Although Milner and Robertson (1990) did not measure depression directly, they found that 150 parents who maltreated their child, in comparison to 75 who did not, had higher scores on the unhappiness subdomain of the Child Abuse Potential (CAP) questionnaire (Milner, 1986). These findings indicate that although to date no study has examined the relation between child abuse, infant attachment, and maternal depression simultaneously, strong evidence in the literature does exist which supports the idea that mothers who are very depressed are more likely to be abusive to their children and to have infants with insecure attachments than are mothers who are only mildly depressed.

Social support, an important part of a mother's social environment, is another maternal characteristic for which this review found empirical evidence of a relation to both

child abuse and the mother-infant attachment relationship. In the study of 121 maltreating and adequate mother-infant dyads Crittenden (1985b) found that social network variables accounted for 20% of the variance in mother-infant attachment classifications.

Although there have been findings to the contrary (Altemeier, O'Connor, Vietze, Sandler, & Sherrod, 1982), most of the studies of social support and abuse have found that mothers who are abusive to their children have less social support. Kirkham, Schinke, Schilling, Meltzer, and Norelius (1986) found that mothers who were at the highest risk for child abuse also tended to have the least adequate social support networks. Crittenden (1988) found that mothers who had an abusive relationship with a child were also more likely to have distortions in other social relationships, including family, spouse, and friends. Although not studying social support directly, Milner and Robertson (1990) found that mothers who had higher loneliness scores were also more likely to exhibit abusive behaviors towards their children.

Child characteristics. The next area of common correlates includes characteristics of the child which have been empirically shown to correlate with both child abuse and attachment security: aggression, sociability, and developmental level. Although these characteristics may be conceptualized as outcome variables, their correlational relations with abuse and attachment may also indicate common influences. Children who exhibit more aggressive behavior have been found to have less secure attachments to their mothers (Silver, 1991), and are more likely to have experienced abuse or maltreatment from their mothers (Dawud et al., 1991; George & Main, 1979; Salzinger et al., 1992).

Many studies have found that children who are more sociable, or who demonstrate more social competence, are also more likely to have secure attachments to their mothers (Barahal, Waterman, & Martin, 1981; Teti et al., 1991; Silver, 1991). Although using slightly different terminology, a relation between child social competence and the

occurrence of child maltreatment also has been reported in the literature. DiLalla and Crittenden (1988) found abused children to portray less positive social interaction than nonabused children. Salzinger et al. (1992) found abused children to have lower peer status and to show less positive reciprocity and less cooperation with others. The abused toddlers (ages 1-3) studied by George and Main (1979) were much less likely than their nonabused counterparts to approach caregivers in response to friendly overtures, and when they did approach, were much more likely to approach from the side, the rear, or by turning or backstepping.

Child development level and functioning is another child characteristic which this review examined. Although research in this arena contains quite a variety of differing constructs, it is nevertheless an area for which correlates of both child attachment and maltreatment have been tested. Studies examining the relation between child developmental level and security of child attachment have been somewhat sporadic in their findings. Jennings, Hart, and Roggman (1992) found no significant relation between child developmental level as measured by the Bayley Scales of infant development (Bayley, 1969) and child security of attachment as measured by the Attachment Q-sort (Waters & Deane, 1985). Schneider-Rosen and Cicchetti (1984) found that children with secure attachments to their mothers were more likely to recognize themselves in a mirror than were insecurely attached children.

Although different measures have been used in the study of abused children, some meaningful relations have been established. Aber and Allen (1987) found that abused children were less likely to display a readiness to learn while in the company of novel or unfamiliar adults. Similarly, it was found by Browne and Saqi (1988) that abused infants displayed less visual exploratory behavior. Coster, Gersten, Beeghly, and Cicchetti (1989) found that abused children differed from nonabused children in their language

development, having shorter mean lengths of utterances, less descriptive speech and less relevant speech. Kavanagh et al. (1988) similarly found that abused children talked significantly less than nonabused children. Similarly, Hecht et al. (1986) found that 20% of abused children displayed below normal language development. The increased risk of child abuse due to communication and cognitive limitations was also confirmed by Ammerman, Lubetsky, Hersen, and Van Hasselt (1988).

Although not all children with disabilities are cognitively impaired, having a disability in most cases slows or alters child development. For this reason, research with children with disabilities is included in this section. Research in this area has shown that children with disabilities are more likely to be insecurely attached to caregivers and are also more likely to be abused by their caregivers (Ammerman et al., 1988; Burrell, 1990). Along this same line of research, infants born prematurely, or who have a low birthweight, a congenital defect, or need to stay in a neonatal intensive care unit for longer than 40 days are at higher risk for receiving abuse from their mothers (Elsas, 1981).

Interactive characteristics. The third major area of research centers on the idea that certain combinations of maternal and child characteristics are more likely to predict both insecure mother-infant attachment and child abuse. For example, Mangelsdorf, Gunnar, Kestenbaum, Lang, and Andreas (1990) found that although no direct relation was found between maternal personality and attachment security, there was a relation between the interaction of infant temperament, maternal personality characteristics, and attachment security. For infants with a high temperamental proneness to distress, maternal personality was a more important predictor of attachment security than for infants with a low temperamental proneness to distress. They described their results as supporting a "goodness of fit" theory. Similar results were found by Kanaya and Miyake (1985). In their study of 29 mother-infant pairs, although for secure infants no relation was found

between infant temperament and promptness of maternal response to infant needs, there was a significant relation between infant temperament and promptness of maternal response to infant needs for insecure infants. Thus, the combination of both mother and child characteristics may be important in the prediction of attachment security. Kanaya and Miyaki (1985) have described this as a "meshing" process between mother and infant.

The child abuse literature has similarly examined the influence of certain combinations of mother and child characteristics. In the study of 73 mother-infant dyads, characterized by low socioeconomic status, Crittenden (1985a) found that no significant differences were found at birth between abused and nonabused infants, but at 24 months abused infants were less cooperative (more aggressive or passive) with their mothers and displayed lower IQs than nonabused infants. The conclusion of this study was that these infant behaviors proved to be aversive stimuli which promoted further abuse. The authors proposed a "model of bidirectional effects in which the mother initiates the maltreatment, but both mother and infant behave so as to maintain the situation" (p. 85).

### Summary

The studies reviewed may be thus summarized: In the prediction of attachment security and child abuse, both maternal and child characteristics and combinations of these characteristics are influential. A parent and a child who both have characteristics predictive of abuse are more likely to have an abusive relationship than if neither of them has such characteristics. This same pattern holds true for attachment security: If both mother and child have characteristics predictive of insecure attachment, then insecure attachment is more likely. Furthermore, although the constructs have been measured in a variety of ways, both attachment security and child abuse have many similar correlates.

Across a wide range of studies, variables which are related to both attachment and abuse have been identified, including characteristics of maternal behavior, child behavior, and combinations of those characteristics. The examination of these commonalities in correlates is useful in determining the nature of the relation between attachment security and child abuse. This analysis has identified parenting behaviors which may not be labelled as abusive by society but nevertheless are associated with the risk of physical child abuse and with attachment disruption. To the extent that this review has found similar correlates of attachment and abuse, a model of a continuous relation between child abuse potential and security of attachment has been supported.

The principal objective of this study is to examine the relation between child abuse and attachment with both variables conceptualized and measured on a continuum in the general population. Child abuse in a continuous dimension will be measured by maternal self-report of beliefs and behaviors associated with the potential for physical child abuse and by maternal self-report of the experience and use of harsh discipline techniques. Attachment security will be measured by maternal report of child characteristics associated with secure-base behavior indicative of secure mother-infant attachment relationships. The following hypotheses will be tested: (a) There will be a significant relation between child abuse potential and security of mother-infant attachment. (b) There will be a significant relation between harsh parenting and security of mother-infant attachment. (c) Child abuse potential and harsh parenting together will predict less secure mother-infant attachment.

## METHOD

### Subjects

The study sample consisted of 66 toddlers ages 12 to 15 months old and their mothers, 25 of whom were randomly selected to be tested again at 17 months. Mothers were sampled instead of fathers or other caregivers for two reasons. First, research has typically shown that the primary attachment is most often between mother and child (Bowlby, 1969). Second, mothers are more likely to be abusive to their child than are other caregivers (Altemeier et al., 1982).

Infants of this age were chosen for several reasons. This period of development represents the onset of language and representational thought. As infants begin to link thoughts, feelings, and memories, they are able to develop attachments to their caregivers and demonstrate behaviors indicative of attachment which may not have been evident at earlier ages (e.g., proximity seeking preference for primary caregiver) (Bowlby, 1969). Also because abuse starts early, peaking at about age 2, this study explores factors associated with abuse that may precede the time of greatest risk of abuse.

Subjects included healthy infants from intact families identified through public birth announcements available in the local newspaper. Initial contact occurred by mail through a letter explaining the design and general purpose of the study and requesting participation. Follow-up phone calls identified mother-toddler dyads willing and able to participate.

### Measurement Instruments

Attachment security. The security of the mother-infant attachment relationship was measured by the Waters and Deane (1985) Attachment Q-sort. This instrument provides a continuous measure that is an appropriate alternative to the stressful, time intensive



Strange Situation (Ainsworth et al., 1978) which provides only a categorical measure. Research has shown that infants classified as secure in the Strange Situation received significantly higher scores on the security score of the Q-sort (Vaughn & Waters, 1990). The Q-sort is composed of 90 cards on which are printed sentences describing child behaviors characteristic of secure and insecure attachment. Descriptions of child behavior include secure base behavior, independence, affect towards the mother, and affect towards others. In the research lab, where a research assistant was available to answer questions, mothers were asked to sort the cards. Mothers were instructed to read each Q-sort card and then make three piles of 30 cards each: one pile containing statements which were "like my child," another pile containing statements which were "neither like nor unlike my child," and a final pile containing statements which were "unlike my child." After the mother sorted these three piles, she was instructed to divide each pile into three more piles, making a total of nine piles of 10 cards each. Through this process cards were sorted into piles of statements ranging from "very much like" to "very much unlike" my child. Mothers thus identified characteristics most and least similar to their own child's typical behavior. The Q-sort required between 20 and 90 minutes to complete.

In order to determine a security score, each card item was given a score according to which pile the mother placed it in. These scores were then correlated with criterion ratings established by 43 PhD psychologists having expertise in attachment theory and research (Waters & Deane, 1985). Reliability estimates of these security scores were  $>.95$  (Waters & Deane, 1985). Assessment of reliability of the current sample is reported in the Results section.

Child abuse risk. Maternal risk for abusive parenting was assessed by two different measurement instruments. The Child Abuse Potential Inventory (CAP) (Milner, 1986)

assesses psychodynamic and relational factors influencing the risk of child abuse. The Harsh Parenting Scale (HPS) asks direct questions concerning parents' beliefs, behaviors and past experience of harsh parenting techniques.

The CAP was originally developed to meet the need of child protection service workers to identify child maltreatment cases. Although originally developed for clinical populations, the 160 item scale has also been widely used in exploratory studies using the general population (e.g., Milner, 1987). In addition to the child abuse potential score, the CAP has seven subscores which measure the psychodynamic and relational origins of abusive tendencies. The measure has four subscales measuring the psychodynamic origins of abusive tendencies: distress, rigidity, unhappiness, and loneliness. The CAP contains an additional three subscales measuring relationship dysfunctions indicative of child abuse: problems with child and with self, problems with family, and problems with others.

The CAP is a self-administered questionnaire having a third-grade reading-ability level. Twelve to 20 minutes are required to answer the 160-item agree/disagree format. The CAP's psychometric properties of reliability and validity have been well established. The abuse scale has relatively high levels of internal consistency reliability (.92-.96 for control subjects and .95-.98 for abusive populations) (Milner, 1986). Construct validity of the scale has been well established by its high subscale correlations with many other measures (Milner, 1986). Some of these measures include the Parenting Stress Index (Talbot, unpublished data), the Edwards Personal Preference Schedule scales (Robitaille, Jones, Gold, Robertson, & Milner, 1985), the Sixteen Personality Factor Questionnaire (Robertson & Milner, 1985) and the Minnesota Multi-Phasic Inventory (MMPI) (Matthews, 1984). There are also many other studies citing validation of the CAP. Milner and Wimberley (1980) found in their study of 65 abusing and 65 matched

comparison subjects that discriminant analysis revealed the overall correct classification rate to be 92.3% for the abusing and 100% for the control population. Assessment of reliability of the current sample is reported in the Results section.

The Harsh Parenting Scale (HPS) (see Appendix) was adapted from questions originally developed by Simons et al. (1991) to assess intergenerational transmission of harsh parenting. This questionnaire asks direct questions about subjects' experience of harsh parenting as a child, present beliefs about harsh parenting, and present use of harsh parenting on their own children. The Harsh Parenting Scale was used to measure child abuse risk in addition to the CAP for two reasons. First, the Harsh Parenting Scale is a more direct measure of the punitiveness associated with risk of abuse. The CAP does not ask direct questions about experience, beliefs, or use of harsh parenting techniques; the HPS does. Second, the HPS was used as a validity check of the CAP. As harsh parenting measured by the HPS increases, so should child abuse potential as measured by the CAP. The CAP and the HPS, although distinct, were expected to be correlated.

The HPS uses a nine-item, five-point Likert scale in which respondents indicate the frequency of a certain event, or the degree to which they agree or disagree with a certain statement. The coefficient alpha for the questions used in Simons et al., (1991) ranged from .60 to .78. Assessment of reliability of the current sample is reported in the Results section.

For purposes of this study, three subscales of the Harsh Parenting Scale were also examined. A parent's rating of the harsh punishment they received as a child (Past) is a subscale composed of the first four questions of the scale. The next three questions ask parents to rate how strongly they believe in various punishment practices (Belief). The last two questions of the scale (Now) ask parents to report how often they use harsh punishment with their own children.

### Procedures

Ethical codes for research developed by the Department of Health and Human Services (Title 45, part 46, rev. March 8, 1983) were implemented in the procedures for this study which were approved by the Utah State University Institutional Review Board on July 21, 1991. Procedures were explained to subjects, and they signed a consent form before any data were collected or used. Identification of all data by ID numbers ensured the confidentiality of the study results.

This study was part of a larger research project of Dr. Lori Roggman to examine mother-infant interaction and child characteristics. As part of the study, appointments were made with mothers and toddlers to come to the research lab in the Family Life Building on the USU campus.

At least one week before the lab appointment, mothers received a packet that included a general description of the study, a map and directions to help them locate the lab, a parking pass, and a variety of questionnaires including a list of the Q-sort items. Instructions concerning the Q-sort of infant attachment were also included in this packet. The instructions told mothers to carefully read the Q-sort items and to then observe their child's behavior for a few days, noticing which child behaviors were similar to behaviors described in the cards. Then the mothers were instructed to rate the card items according to which ones were most like, least like, and neither like nor unlike their child's behavior. This allowed the mothers to become familiar with the items and to take opportunity to observe their child specifically in relation to the behaviors described for several days before doing the actual card sorting procedure. This procedure has been used to increase the validity of Q-sort ratings done in the research lab (Teti & Ablard, 1989).

At the USU lab, the mothers had the study explained to them again and were asked to

sign an informed consent form. They were asked to complete the HPS along with some other questionnaires during an observation session. Following the observation session, mothers completed the Q-sort card sorting procedure while their child was being tested by a researcher nearby. Trained testers were available to mothers to answer any questions they had. At the end of the testing session, the CAP was given to mothers to fill out at home and mail back in a self-addressed stamped envelope labeled by identification number only.

#### Data Analysis

Correlational analyses were used to test relations between child abuse potential (CAP) and mother-infant attachment security (Q-sort) and between harsh parenting (HPS) and mother-infant attachment security. Regression analyses were used to test the extent to which child abuse potential (CAP) and harsh parenting (HPS) together predicted security of mother-infant attachment (Q-sort). Correlational analyses were also used to explore relations of the subscales of the CAP and HPS measures with security of mother-infant attachment (Q-sort). Additional exploratory analysis further examined relations between the three primary variables for a subset of 25 subjects tested at two ages, approximately 14 and 17 months.

## RESULTS AND DISCUSSION

### Sample Description

The total sample for this study consisted of 66 mother/infant dyads. Three of these subjects were missing more than 10% of CAP items and therefore, in accordance with CAP assessment guidelines (Milner, 1986), were deleted from the sample. To increase the reliability of the CAP score further, 5 subjects who were missing a CAP question with a scoring weight greater than 5 were also deleted from the sample. Analyses with and without these subjects indicated very similar results. Demographic description of the adjusted sample remained the same. The 58 mothers in the study sample ranged from 21 to 40 years of age with a mean of 30.13 years of age. Years of mother's education ranged from 11 to 20 with a mean of 14.56 years of education. All of the mothers were married at the time of testing, and 97% of mothers reported being Caucasian. Number of children in the home ranged from 1 to 7 with a mean of 2.98 and a mode of 2 children. At the time of first testing, toddlers ranged in age from 12 months and 15 days to 14 months and 23 days of age with a mean of 14 months and 10 days of age.

Twenty-five of the mother-toddler dyads completed the Child Abuse Potential Inventory (CAP) and the Attachment Q-sort 3 months following the first testing, when toddlers were approximately 17 months of age. Seventeen of these subjects also completed the Harsh Parenting Scale (HPS) at that time. Although data collected at this 17-month testing were originally intended to be used only for purposes of establishing test-retest reliability, the results of exploratory analysis using these data are included in this study. Statistical analysis comparing the 25 longitudinal subjects to the other subjects at 14 months indicated no statistically significant differences for any of the demographic or research variables (child abuse potential, harsh parenting, and security of attachment).

The same testing procedures were again followed at the 17 month testing, and demographic data were again collected. For the 25 subjects tested at 17 months, mothers' age ranged from 21 to 39 years of age with a mean of 28.67 years of age. All of the mothers reported being married and Caucasian. Number of children in the home ranged from 1 to 8 with a mean of 2.79 children and a mode of 2 children. Mothers' years of schooling ranged from 12 to 21 years with a mean of 14 years. At the time of second testing, toddlers ranged in age from 16 months and 18 days of age to 18 months and 29 days of age with a mean of 17 months and 16 days of age.

#### Reliability

As described in the procedures section, about a week before the first testing, a list of the Q-sort card items was sent by mail to each mother. Mothers were instructed to rate these items as either like, unlike, or neither like nor unlike their child's typical behavior. Responses from these lists ( $N = 55$  for whom these original lists were available) and from the Q-sort procedure completed during the lab session were then each correlated with the criterion scores (as described in the Measures section), thereby yielding two sets of security scores. Test-retest reliability for the mother-infant attachment Q-sort was estimated from a Pearson correlation between these two scores,  $r = .82$ . Test-retest reliability for the Q-sort was also estimated from a Pearson correlation between these security scores at 14 and 17 month testings ( $N = 25$ ),  $r = .74$ .

Instrument reliability of the Child Abuse Potential Inventory (CAP) was investigated through intraclass correlations (alpha) to determine test internal consistency and through test-retest Pearson correlations to determine test stability over time. The CAP subscale interitem reliability and test-retest consistency performed on this sample can be compared to the reliability analysis performed by Milner (1986). Milner (1986) used split-half

analysis with a sample of 2,062 subjects obtained from hospitals, development centers, departments of social services, parent-teacher organizations, colleges, and other community organizations. His sample consisted of subjects with no known history of child abuse or neglect, yet they were not selected because they were particularly nurturing. One hundred fifty of these subjects were retested after a 3-month interval. Comparisons between the reliabilities of these two samples can be seen in Table 1. (The CAP subscale measuring loneliness was not included in Milner's analysis.) As can be seen, except for the subscale Problems with Child and Self, the test-retest correlations found in Milner's much larger sample are greater than those indicated by the present sample.

The very low test-retest correlations of the Unhappiness, and the Problems with Others Scales indicate low stability of these measures over time. The low intraclass correlations of the Rigidity scale, the Problems with Family Scale and the Problems with Child and Self scale indicate low internal consistency of these measures. Due to low reliability, these measures were not included in further analysis.



Table 1

Reliability of the Child Abuse Potential Inventory (CAP)

<u>CAP Subscale</u>	<u>Number of Items</u>	<u>Thesis Alpha</u>	<u>Milner's Split Half</u>	<u>Thesis Retest</u>	<u>Milner's Retest</u>
				<u>r</u>	<u>r</u>
Child Abuse Potential	76	.69	.96	.57	.75
Loneliness	14	.75	-	.66	-
Unhappiness	11	.68	.66	.06	.69
Rigidity	14	.41	.82	.62	.84
Distress	36	.67	.94	.57	.70
Problems	6	.55	.68	.36	.72
w/ others					
Problems	6	.50	.62	.61	.55
w/ child & self					
Problems	4	.29	.74	.57	.66
w/ Family					

The nine-item Harsh Parenting Scale (HPS) yielded an intraclass correlation alpha of .69. The three subscales of the test were also analyzed (see Table 2). Four questions concerning physical and harsh punishment received as a child (Past) indicated an intraclass correlation alpha of .76. The three questions concerning current beliefs about harsh punishment of children (Belief) had an intraclass correlation alpha of .58. The last two items on the Parenting Scale (Now) ask the parent how often she loses her temper and yells at her child, and how often she spansks or slaps her child. This subscale yielded an intraclass correlation alpha of .73. These results indicate that the Parenting Scale total and subscores have adequate interitem reliability (see Table 2).

Table 2

Reliability of the Harsh Parenting Total and Subscales (HPS)

<u>Subscale</u>	<u>Number of Items</u>	<u>Interitem Alpha</u>	<u>Test-retest <math>r</math></u>
Harsh Parenting <u>Total</u>	9	.69	.78
<u>Past</u> Harsh Parenting	4	.76	.78
Harsh Parenting <u>Beliefs</u>	3	.58	.67
Harsh Parenting <u>Now</u>	2	.73	.59

Test-retest correlations were also examined for the Harsh Parenting Scale (see Table 2). The correlation between the total HPS at time one and time two indicated stability over time,  $r = .78$ . Test-retest correlations of the questions about punishment received as a child (Past) indicated similar stability,  $r = .78$ . The test-retest correlation of the Belief Scale indicated slightly lower stability,  $r = .67$ . Parental ratings of current

behavior towards her children (Now) were even less stable,  $r = .59$ .

As previously mentioned, one of the purposes for using the Harsh Parenting Scale in this analysis was to use it as a content validity check for the CAP. However, correlations between the CAP abuse score and the HPS Total and subscale scores at the time of first testing seem to indicate that these are independent measures tapping distinct constructs of parenting behavior (see Table 3) (HPS Total,  $r = .12$ ,  $p = .57$ ; HPS Past,  $r = .34$ ,  $p = .09$ ; HPS Belief,  $r = .10$ ,  $p = .65$ ; HPS Now,  $r = .17$ ,  $p = .18$ ). At the time of second testing the correlations are greater, suggesting that the relation between these two measures grows stronger as toddlers move from 14 to 17 months (see Table 3) (HPS Total,  $r = .54$ ,  $p = .02$ ; HPS Past,  $r = .26$ ,  $p = .32$ ; HPS Belief,  $r = .47$ ,  $p = .06$ ; HPS Now,  $r = .59$ ,  $p = .01$ ). This greater strength of the correlation at 17 months compared to 14 months seems to be due primarily to current beliefs and behaviors of harsh parenting. Correlations at the second testing suggest that these two measures represent distinct but correlated measures of the construct of child abuse risk.

#### Correlational Analysis

Correlational analysis tested the first hypothesis of this study, that a negative relation would exist between child abuse risk (as measured by the CAP and the HPS) and mother-infant attachment security (as measured by the Q-sort). Table 4 shows the results of time one (14 month) correlations and indicates that for this age group the first hypothesis is only partially supported. Although a negative correlation existed between child abuse potential (CAP) and attachment,  $r = -.22$ ,  $p = .10$ , and between harsh parenting (HPS) and attachment,  $r = -.25$ ,  $p = .06$ , a conventional level of statistical significance was not met.

The HPS Now subscale, testing current harsh parenting practices, was the only

Harsh Parenting subdomain that was significantly correlated with the Q-sort measure of attachment,  $r = -.34$ ,  $p = .01$ . The correlation between the HPS Belief subscale and attachment was in the expected direction but did not meet a conventional level of statistical significance,  $r = -.20$ ,  $p = .13$ .

These results seem to indicate that current parental behaviors and beliefs about harsh parenting are stronger predictors of attachment security at 14 months than parents' childhood experiences. The CAP Loneliness and Distress subscales also were negatively correlated with attachment, but the correlations did not reach conventional levels of statistical significance.

Table 3

Correlations Between the CAP Abuse Scale and the HPS Total, Past, Belief, and Now Subscales at 14-month and 17-month Testings for the Total Sample and for the Longitudinal Subsample

Variable	<u>14 Month</u>		<u>14 Month</u>		<u>17 Month</u>	
	<u>N = 58</u>		<u>N = 25</u>		<u>N = 17</u>	
	<u>CAP</u>	<u>CAP</u>	<u>CAP</u>	<u>CAP</u>	<u>CAP</u>	<u>CAP</u>
	<u>r</u>	<u>p</u>	<u>r</u>	<u>p</u>	<u>r</u>	<u>p</u>
HPS Total	.12	.57	.12	.59	.54	.02
HPS Past	.34	.09	.34	.09	.26	.32
HPS Belief	.10	.65	.08	.71	.47	.06
HPS Now	.17	.18	.16	.43	.59	.01

Table 4

Fourteen-month Correlations of the Attachment Q-sort with CAP and HPS for the Total Sample and for the Longitudinal Subsample

<u>Variable</u>	<u>Attachment Q-sort</u>		<u>Attachment Q-sort</u>	
	<u>N = 58</u>		<u>N = 25</u>	
	<u>r</u>	<u>p</u>	<u>r</u>	<u>p</u>
CAP Child Abuse Potential	-.22	.10	-.13	.52
CAP Loneliness Subscale	-.15	.26	-.12	.58
CAP Distress Subscale	-.22	.11	-.11	.61
Harsh Parenting Scale <u>Total</u>	-.25	.06	-.45	.03
Harsh Parenting Scale <u>Past</u>	-.08	.56	-.16	.45
Harsh Parenting Scale <u>Beliefs</u>	-.20	.13	-.56	.003
Harsh Parenting Scale <u>Now</u>	-.34	.01	-.17	.43

Table 5 shows correlations between the dependent variable attachment and the independent variables, CAP and HPS (and their relative subscales), at the time of second testing. Testing at 17 months indicated stronger support of the first hypothesis than did the testing at 14 months. Negative, statistically significant correlations existed between child abuse potential and attachment security,  $r = -.43$ ,  $p = .03$ . This time the correlation between attachment and CAP Loneliness was statistically significant,  $r = -.39$ ,  $p = .05$ .

Correlations between harsh parenting and attachment security at the second testing were similar to those at the first testing. The HPS Total score was negatively related to attachment security,  $r = -.50$ ,  $p = .04$ . Again, parents' past experience of harsh parenting as a child (HPS Past) indicated no relation with attachment security. At time two, however, beliefs about harsh parenting (HPS Belief) were the most significant correlates of attachment security,  $r = -.51$ ,  $p = .04$ . Current harsh parenting (HPS Now), although showing a negative correlation with attachment, did not reach a conventional level of statistical significance,  $r = -.47$ ,  $p = .06$ . As with the first testing, these results seem to indicate that current parental behaviors and beliefs about harsh parenting are stronger predictors of attachment security than parents' past childhood experiences.

To further explore age-related changes in the relation between attachment and child abuse risk, changes between 14 and 17 months in each major variable were tested for the subjects for whom longitudinal data were available. Paired  $t$  tests indicated no statistically significant differences between 14 and 17 months for child abuse potential, harsh parenting, or attachment security.

Table 5

Seventeen-month Correlations of Attachment Q-sort with CAP and HPS for the  
Longitudinal Subsample

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<u>Variable</u>	<u>Attachment Q-sort</u>	
	<u>N = 25</u>	
	<u>r</u>	<u>p</u>
CAP Child Abuse Potential	-.43	.03
CAP Loneliness Subscale	-.39	.05
CAP Distress Subscale	-.36	.08
	<u>N = 17</u>	
Harsh Parenting Scale <u>Total</u>	-.50	.04
Harsh Parenting Scale <u>Past</u>	-.12	.65
Harsh Parenting Scale <u>Beliefs</u>	-.51	.04
Harsh Parenting Scale <u>Now</u>	-.47	.06

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Results from time one and time two correlations indicated some interesting trends. For each of the child abuse risk variables, the correlation coefficient was greater at 17 months than it was at 14 months, even though the sample size was reduced from 58 to 25 subjects. The increase in the strength of the correlations suggests that the relation between child abuse risk and mother-infant attachment increases between the ages of 14 and 17 months.

Previous research has indicated that there is a peak in child abuse around age 2 when children seem to be gaining independence. It is plausible that the risk of child abuse becomes a more meaningful variable in relation to attachment between the ages of 14 and 17 months. It is generally between these ages that children learn to walk, dramatically increasing their independence. With this increase in mobility often comes mothers' first disciplinary challenges. As a child experiments with newfound independence and mother experiments with newly necessary discipline techniques, the security of the attachment relationship may become increasingly important in balancing and maintaining harmony in this changing relationship. The connection between child abuse risk and attachment security thus increases. Those dyads with less secure attachment become increasingly more likely to be characterized by harsh discipline and high abuse potential. The possibility that attachment functions as a buffering agent during times of stress has been suggested by Sroufe (1988).

### Regression Analysis

The hypothesis that child abuse potential and harsh parenting together would predict attachment security was tested through regression analysis. At 14 months, regression analysis with CAP Child Abuse Potential and HPS Total subscales as predictor variables did not significantly predict attachment security as measured by the Q-sort. Fourteen-



month CAP Child Abuse Potential and HPS Total did not significantly predict 17-month attachment either. When examining this hypothesis using only 17-month data, a significant relation indicated that CAP Child Abuse Potential and HPS Total did significantly predict attachment security,  $R = .49$ ,  $F = 3.4$ ,  $p = .05$ . Further analysis using stepwise regression indicated that only 17-month HPS Total (not 17-month CAP Child Abuse Potential) was a significant predictor of 17-month attachment security,  $R = .50$ ,  $F = 5.0$ ,  $p = .04$ .

These results suggest that harsh parenting is a more direct predictor of attachment than child abuse potential. This seems reasonable when considering the nature of these measurement instruments. The Q-sort measure of attachment security asks mothers to rate the likelihood of their child displaying various behaviors. The Harsh Parenting Scale (HPS) similarly asks mothers to rate the frequency and likelihood that they will display specific attitudes and behaviors, and the frequency that specific behaviors were demonstrated by their parents. The Child Abuse Potential Inventory (CAP) does not ask mothers to rate the frequency, or likelihood, of specific behaviors. Rather, it is a more qualitative instrument tapping into the nature and health of the mothers' psychological and relationship functioning. From these results, it seems reasonable to conclude that both a mother's psychological functioning and relationship functioning are only predictive of the attachment security between herself and her child when these functions are expressed in specific attitudes and behaviors. Thus when both psychological and relationship functioning indicate high child abuse risk, attachment disruption is not inevitable, but takes place only when actual harsh parenting occurs. It may be interpreted that the risk factors associated with child abuse predict weakened attachment security when expressed as harsh parenting.

### Exploratory Analysis

Because the central hypothesis of the study was only partially supported, and then when only using 17 month data, the possibility of different models of effect was explored. Three models using the three primary measures of this study were examined using regression analysis. Each model examined the longitudinal relation between two of the variables at 14 months and the remaining variable at 17 months while controlling for the variance explained by the selected dependent variable at 14 months.

The first model used 17-month attachment security as the dependent variable. Results indicated that when controlling for 14-month attachment, CAP Child Abuse Potential and HPS Total were not significant predictors of 17 month attachment. The second model used 17 month HPS Total as the dependent variable. When controlling for 14-month HPS Total, 14-month CAP Child Abuse Potential and attachment security were significant predictors of 17-month HPS Total,  $R = .50$ ,  $p = .05$ . The last model used 17-month CAP Child Abuse Potential as the dependent variable. When controlling for 14-month CAP Child Abuse Potential, 14-month HPS Total and attachment security significantly predicted 17-month CAP Child Abuse Potential,  $R = .69$ ,  $p = .02$ .

These results suggest that viewing attachment security as the dependent variable may not be the most accurate model. Stronger and more statistically significant relations were obtained when using attachment security as a predictor variable. As previously discussed, perhaps the health of the mother-infant attachment relationship established around the child's first birthday is an important buffer to relationship difficulties as the child approaches the age of 2 years. This view is in harmony with attachment theory. As described by Sroufe, "It would be hypothesized that secure attachment history...would be an important factor in buffering individuals with respect to stress and their ability to cope with stress when it did occur" (Sroufe, 1988, p. 29).

## CONCLUSION

The purpose of this study was to explore the nature of the relation between mother-infant attachment and behaviors associated with child abuse as continuous variables as they exist in a convenience (volunteer) sample drawn from the general population. Results indicated that there is a relation between these two constructs which increases between the childrens' ages of 14 and 17 months. Results further suggest that harsh parenting (as measured by the HPS) is a more direct predictor of attachment than child abuse potential (as measured by the CAP). Maternal psychological and relationship characteristics associated with child abuse seem to influence attachment security primarily when expressed in harsh parenting. Longitudinal analysis suggests that attachment is a better predictor of child abuse risk than child abuse risk is of later attachment.

These results should be considered within the limitations of the study design. All subjects of the study were residents of Cache Valley, located in northern Utah. Cache Valley may be described as a rural area comprised of several small towns and a university community. In comparison to other parts of the United States, it has a relatively large Mormon population with distinctive attitudes about children and childrearing. Future research using a more diversified population is recommended for further exploration of the these results.

Sample size is another limitation of the study, particularly at the 17-month testing. Although relations among variables were strongest at 17 months, only 25 subjects were available for analysis in this study.

There is a particular lack of longitudinal studies of child abuse risk and attachment. Additional research is needed to further examine the longitudinal development of these relations. The examination of these constructs over time is relatively new to the literature.

No previous studies, in the published literature, have looked at relations between child abuse risk and mother-infant attachment as measured by continuous instruments in a non-clinical sample drawn from the general population. A relation has been found in several previous studies between occurrence of child abuse and an insecure mother-infant attachment relationship, but most of these studies have focused on clinical populations with both child abuse and mother-infant attachment defined and measured categorically. This study's examination of child abuse potential in the general population is important because of estimates indicating that there are more absolute numbers of parents from the general population who become abusive to their children than there are parents from the "clinical" population who become abusive to their children. This study's use of continuous measures of attachment security and child abuse potential rather than simple categorical measures provides an alternative view of the extent to which child abuse potential may have a detrimental influence on attachment security.

In conclusion, the view proposed in this study is supportive of the concept that mothers in the general population are susceptible to risk factors associated with child abuse. The results of this study offer some indication that as these risk factors increase, the security of the mother-infant attachment relationship decreases. Nevertheless, exploratory analysis of longitudinal relations among these variables suggests that mother-infant attachment security may be as much or more of an influence than an outcome.

Results of this study support Sroufe's (1988) suggestion that secure mother-infant attachment functions as a buffer to relationship disturbances during times of stress. The ability of the attachment relationship to act as a buffer against psychological stress has been shown in the context of adolescent development (Papini, Roggman, & Anderson, 1991). However, although it is consistent with attachment theory, the role of attachment as a buffering agent between the ages of 1 and 2 years has not been previously explored

empirically. The evidence obtained in this study, that secure attachment relationships at 14 months are associated with reduced risk of child abuse at 17 months, is new to the literature.

This study, therefore, calls for future analysis to examine the function of mother-infant attachment as a buffer against child abuse potential. Further analysis is required to more qualitatively identify which aspects of the attachment relationship are most influential in this buffering process. The examination of intervening variables such as parental stress and infant temperament may also be important in gaining understanding of the overarching buffering influence. Most important is the examination of these variables over time. Does the buffering influence of attachment security peak around the age of 24 months, as does the risk of child abuse, or is a different path of influence established? The answers to these questions may have profound influence not only upon clinical, but also upon nonclinical populations. If further analysis is successful in establishing the longitudinal sequence and qualitative function of attachment as a buffering agent, this information may be useful in educational programs aimed at reducing the risk of child abuse.

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## APPENDIX

ID# \_\_\_\_\_

DATE \_\_\_\_\_

## Harsh Parenting Scale

Part 1 INSTRUCTIONS: Please read the following question and circle the number which best describes how often the item occurred in your home of origin.

1. When you did something wrong, how often did your mom (dad) lose her temper and yell at you?

1.                      2.                      3.                      4.                      5.  
Never                      About half the time                      Always

2. When you did something wrong, how often did your mom (dad) spank or slap you?

1                      2.                      3.                      4.                      5.  
Never                      About half the time                      Always

3. When punishing you, did your mom (dad) ever hit you with a belt, paddle, or something else?

1                      2.                      3.                      4.                      5.  
Never                      About half the time                      Always

4. When you did something wrong, how often did your mom (dad) tell you to get out or lock you out of the house?

1                      2.                      3.                      4.                      5.  
Never                      About half the time                      Always

Part 2 INSTRUCTIONS: Please read the following and circle the number which best describes how you feel.

1. Parents shouldn't hit their kids when disciplining them.

1.	2.	3.	4.	5.
Strongly				Strongly
Disagree				Agree

2. There is often no substitute for a good spanking.

1.	2.	3.	4.	5.
Strongly				Strongly
Disagree				Agree

3. Parents should try to use punishment involving restrictions, such as grounding or time-out, rather than physical punishments like spanking.

1.	2.	3.	4.	5.
Strongly				Strongly
Disagree				Agree

Part 3 INSTRUCTIONS: Please read the following questions and circle the number which best describes how often the item occurs in your present home.

1. When your child does something wrong, how often do you lose your temper and yell at your child?

1	2.	3.	4.	5.
Never		About half the time		Always

2. When your child does something wrong, how often do you spank or slap your child?

1	2.	3.	4.	5.
Never		About half the time		Always