



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2017; 3(1): 487-492
www.allresearchjournal.com
Received: 05-11-2016
Accepted: 06-12-2016

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Effective factors on child maltreatment on security of infant-Adult attachment

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Abstract

The developmental consequences of child maltreatment deserve empirical inquiry. Thirty-two maltreated (abused and/or neglected) children (M = 18.4 months of age) were observed with their biological or foster mothers in a laboratory procedure designed to allow assessment of the security of infant-adult attachment. They were compared with 32 children and no maltreating mothers matched on sex, age, ethnic background, parental occupation, and parental education. Maltreatment by the mothers was associated with a marked increase in the number of insecure, particularly insecure-avoidant relationships, even toward foster mothers, but especially toward the maltreating biological mothers. By contrast, maltreatment by someone other than the mothers appeared not to affect the security of attachment between infants and mother-figures

Keywords: Child maltreatment, infant-adult, child, attachment

Introduction

Child maltreatment is the abuse and neglect that occurs to children under 18 years of age. It includes all types of physical and/or emotional ill-treatment, sexual abuse, neglect, negligence and commercial or other exploitation, which results in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power. Exposure to intimate partner violence is also sometimes included as a form of child maltreatment. Since the "battered child syndrome" was first identified by Kempe, Silverman, Steele, Droegemueller, and Silver in 1962, considerable attention has been paid to the phenomenon by both clinicians and researchers. Principal concerns have consistently been with the incidence of child maltreatment, its etiology, and with the development of principles for effective therapeutic intervention with parents (Parke & Collmer, 1975) [5]. Much less attention has been paid to the effects of child abuse or neglect on their victims. This is particularly true of children who have experienced maltreatment during the earliest years of life. Apart from case reports and a series of essays published by Martin (1976) [3], there have been only three systematic attempts to compare maltreated infants or toddlers with otherwise comparable children who have not been maltreated. In the first, George and Main (1979) [14] observed 10 abused toddlers (ranging in age from 13 to 35 months) interacting with peers and teacher-caretakers. Extremely insensitive and maltreating caregiving behaviors may be among the most important precursors involved in the development of attachment insecurity and disorganization. Egeland and Sroufe pointed out the dramatically negative impact of neglecting or abusive maternal behavior for attachment and personality development, for which they accumulated unique prospective evidence in later phases of the Minnesota study.2 What do we know about the association between child maltreatment and attachment, what are the mechanisms linking maltreatment with attachment insecurity and disorganization, and what type of attachment-based interventions might be most effective.

Attachment theory is a psychological model that attempts to describe the dynamics of long-term and short-term interpersonal relationships between humans. However, "attachment theory is not formulated as a general theory of relationships. It addresses only a specific facet" (Waters *et al.* 2005: 81): how human beings respond within relationships when hurt, separated from loved ones, or perceiving a threat. They reported that the abused children were more avoidant of both peers and caretakers and more aggressive toward teachers than

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were children who had not been abused. England and Sroufe (1981) ^[11] studied the effects of maltreatment on the infant-mother attachment using subsamples drawn from a prospective longitudinal study. They found that when maternal care was of very poor quality (sometimes but not always involving confirmed abuse or neglect), infants were more likely to form insecure attachments to their-mothers.

At 12 months, those with a history of neglect (N=23) were more likely to be resistantly attached, whereas those with a history of abuse (N= 7) were more likely to be avoidant. Over time, however, these patterns changed dramatically and inexplicably. By 18 months, avoidant attachments seemed more common in both groups than in the “excellent care” comparison group.

In the third study, Gaensbauer (1982) ^[12, 13] focused on the expression of affect in a laboratory procedure involving several emotion-eliciting events (novel attractive toys; an encounter with a stranger; a brief separation from the mother). He found that maltreated children displayed more muted reactions to these events than did infants who had not been maltreated. This affective flattening or blunting was evident on measures of a variety of specific emotions-from pleasure and interest to sadness and fear-and thus appeared to be characteristic of the children. Gaensbauer and Harmon (1982) ^[12, 13] later reported that many of the infants were avoidant of their caretakers and suggested that the videotapes should be reviewed using the Ainsworth system for classifying security of attachment (Ainsworth, Blehar, Waters, & Wall, 1978) ^[10]. This was the goal of the present study, in which all of Gaensbauer’s videotapes were rated by individuals familiar with Ainsworth’s system but unfamiliar with the clinical histories of the children and their controls. Although the data were not gathered in a procedure identical to that employed by Ainsworth and her colleagues (1978) ^[10], previous research (Waters, Wippman, & Sroufe, 1979) ^[7] has shown that valid classifications can be made using the Ainsworth system when only one separation/ reunion sequence is observed, as was the case in the present study.

These three studies suggest that maltreatment increases the incidence of insecure-especially avoidant-relationships and leads infants to display more muted patterns of affective expressiveness. The evidence from these three studies is disturbing, because insecure patterns of attachment behavior are apparently associated with deficient social skills and problem-solving behavior as much as 3 years later, suggesting that the effects may be long lasting (Arend, Gove, & Sroufe, 1979; Lamb, Thompson, Gardner, Charnov, & Estes, 1984; Matas, Arend, & Sroufe, 1978; Sroufe, 1983; Waters *et al.*, 1979) ^[8, 1, 4, 6, 7].

In the present study, we attempted to assess the effects of maltreatment on the security of infant-parent attachment, as Egeland and Sroufe (1981) ^[11] had done. Our sample contained more independently confirmed cases than did Egeland and Sroufe’s (32 as opposed to 11), although if one includes the “suspected” cases identified by these other researchers, the numbers are equivalent.

There were, theirs. First, Egeland and Sroufe compared the attachment behavior of abused children with that of 33 children who had received “excellent care” from their mothers and with data obtained in the larger sample from which both subsamples were selected. By contrast, the children and mothers in our maltreatment groups were

matched with mothers and children of comparable ages and backgrounds.

Second, we were able to examine the attachment relationships of subgroups of children whose disposition and current living arrangements differed (some remained at home, while others were in foster care), whereas all those studied by Egeland and Sroufe remained in the care of their mothers. Third, whereas Egeland and Sroufe assessed security of attachment using Ainsworth’s Strange Situation procedure, we relied upon a somewhat different procedure, although we focused on the same events (e.g., separation and reunion responses) and used the same rating scales and coding conventions as Egeland and Sroufe had. Our maltreatment group was divided for the purpose of some analyses into four subgroups. One, the M-M group, was similar to that studied by Egeland and Sroufe. It consisted of children who had been maltreated by their mothers, but still lived with their mothers, even if they had spent time in foster care. A second group (FM-FM) consisted of children who had been maltreated by their mothers and had been placed in the care of a foster mother with whom they were observed. The third group (FM-M) of children were living with foster mothers but were filmed with their biological mothers, who were the principal perpetrators. The final group (abused by “Other”) was either maltreated by persons other than their biological mothers or else the perpetrators were unknown. We distinguished among these four groups because they sample the range of situations in which maltreated children find themselves. Based on the results of studies involving both maltreated and “normal” children, our hypothesis was that insecure attachments-especially insecure-avoidant attachments-would be more common in all of the maltreatment groups than in the matched comparison groups. Because foster placements vary in length and occur in the context of poor mother-child relations, we were less confident about the effects of current foster care on infants’ behavior toward their biological mothers. Studies of reactions to long-term separation (e.g., Bowlby, 1973) ^[9] suggest that children first evince protest and anger (which might make resistant behavior more likely) and then despair or even detachment (which might make avoidant behavior more likely). Most of the foster placements involved had been quite brief, so we expected fewer avoidant and more resistant patterns of behavior in this group than in the other maltreatment groups. Of course, given the small sample sizes, findings could be suggestive only.

Method

Subjects

The 32 maltreated subjects were drawn from a larger group of maltreated children. The total sample included most young children referred to protective service authorities in Denver over a 4-year period, and all children who had been matched and who were of an age for which the Ainsworth classification procedure seemed appropriate were included in the sample studied here. The children ranged in age from 8.7 to 31.8 months (M= 18.4 months). Only two were under 11 months of age. Comparison groups contained children matched as closely as possible with the abused and neglected children on characteristics such as: sex, age, ethnic background, maternal (and paternal, where relevant) occupation, and parental education. The children in the comparison groups ranged in age from 9.5 to 31.2 months

($M = 18.7$ months). All children in the comparison groups lived with their parents and had no known history of abuse. Members of the comparison group were recruited by visiting neighborhoods comparable to those inhabited by members of the maltreatment groups and asking mothers who seemed similar to their proposed maltreatment match whether they would be willing to participate. Further questioning to confirm the appropriateness of the match followed. Choosing appropriately matched comparison groups is clearly a major and time-consuming process in studies like this. Most of the children in all groups came from poor and lower middleclass backgrounds; mean maternal education was 11.7 years (range, 7 to 15 years) and mean maternal occupational status on Hollingshead's (1976) Occupation Index was 3.5 (range, 1 to 7). The mothers and children in the four maltreatment subgroups had comparable characteristics. Further details about the individual subjects' backgrounds are available from the authors upon request. Twenty-three of the children had been maltreated by their mothers rather than some other adult. The identity of the perpetrator was decided on the basis of information provided by the mother, her spouse and neighbors, caseworkers, and psychiatric evaluators. It was a clinical judgment made by someone (TGR) who was not involved in assessments of the attachments or in the decision to divide the sample on this basis for purposes of analysis. Thus, although the validity of these judgments is necessarily unknown, they could have had no effect on the data reported here.

All maltreated infants were seen with their biological mothers unless they were not available, in which cases the foster mothers were involved instead. Typically, mothers were not involved when the maltreatment had been especially severe or chronic, and/or when the history or psychiatric status of the mother made permanent reunion of mother and child seems unlikely. Mothers were unavailable for study in these cases because they had limited involvement with their children. Eleven of the children were currently living with their mothers and were observed with them (the M-M group). None had been in foster care within the last month, although two had been placed briefly ($M = 2.0$ months) on one prior occasion. Two other groups consisted of children who were in foster care at the time of observation; all had been with the current foster mother for at least one week. Half of these children ($N = 6$) were filmed with their current foster mothers (the FM-FM group); the remainder ($N = 6$) were filmed with their biological mothers (the FM-M group). The average amount of time in foster care over the lifetime of these children was 5.5 months. The mean for the FM-FM group was 7 months and for the FM-M group, 4 months.

The final group ("Other") consisted of 9 children who had been maltreated by someone other than their biological mothers, or by an unknown person. Of the 9 children in this group, 4 were living and filmed with mothers, 4 were living with foster mothers but filmed with biological mothers, and the other was living and filmed with a foster mother. In three cases, some neglect by the mother (in addition to maltreatment by someone else) was also suspected.

Procedure

The children and their mothers or foster mothers were videotaped in a large playroom furnished with many attractive toys. Upon entry to the room, the adult was asked to play with the child to facilitate his or her adaptation to the

room. Two minutes later, a knock signaled the adult to sit in a designated chair for a further five minutes until an unfamiliar adult male entered the room.

After introducing himself and allowing the child an opportunity to initiate interaction, the stranger attempted to engage the child in a reciprocal game and then picked the child up. The mother or foster mother then played with and picked up the child. The sequence was then interrupted for 15-30 min for a developmental assessment by the "stranger" in the mother's or foster mother's presence. When this ended the child was allowed 1 min to readjust before the mother or foster mother left the room for 3 min. Two minutes after her return, the stranger left for 3 min, and then returned for the final 1 min episode.

Using the rating scales described by Ainsworth *et al.* (1978) [10], two raters independently rated the child's (a) proximity and contact seeking; (b) contact maintaining; (c) resistance; (d) avoidance; (e) search; and (f) distance interaction toward both parent and stranger (where possible) in: (a) the last 3 min of the episodes before the stranger entered; (b) the stranger play/pick-up sequence; (c) the parent play/pick-up sequence; (d) the separation; (e) the reunion; (f) the separation from stranger; and (g) the reunion with the stranger. Based on these ratings, the raters independently classified the pattern of attachment behavior using the guidelines provided by Ainsworth *et al.* (1978) [10], thus placing greatest emphasis on the child's response to reunion with the mother or foster mother. Infants were classified as either securely (B), avoidant (A), or resistant (C) attached. Infants were considered securely attached when they greeted the mother figure upon reunion (either by seeking contact or interacting across a distance) and used the mother figure as a secure base from which to explore. The avoidant label was applied, as instructed by Ainsworth *et al.* (1978) [10], when the infant snubbed, moved or looked away from, and failed to greet the parent figure upon reunion. Resistant infants mingle proximity- and contact-seeking bids with clear manifestations of anger to and rejection of the mother figure. The two raters agreed on the classification 90% of the time. Whenever there was any disagreement, the videotape was reviewed and the raters discussed the behavior until a consensus was reached. In addition, all tapes which were considered difficult to rate or unusual in any way were subsequently rerated. Throughout the rating process, the two raters remained completely unaware of the children's group status.

Results

Table 1 shows the attachment classifications of infants in each of the four groups. As the Table indicates, 21 of the 32 children in the maltreatment groups behaved insecurely (i.e., avoidant or resistant), compared with 6 in the comparison groups. This difference is highly significant, $\chi^2(1) = 12.22$, $p < .001$, with Yates correction. Fifty-three percent of the children in the maltreatment group's behaved avoidantly compared to 19% in the comparison groups and in most other samples reported in the literature (Ainsworth *et al.*, 1978). The proportion of infants behaving avoidantly was significantly higher and the proportion of infants behaving securely significantly lower, corrected $\chi^2(1) = 9.43$, $p < .005$, in the maltreatment than in the comparison groups.

Table 1 also shows a significantly higher number of infants behaving in-, securely within the M-M group, corrected $\chi^2(1) = 11.64$, $p < .001$, and in the FM-M group, Fisher exact,

p =.05, than in their respective comparison groups. Both groups also showed a significantly greater number of infants behaving avoidantly than in their comparison groups [M-M, corrected $\chi^2(1) = 9.71, p < .005$; FM-M, Fisher exact, $p = .05$]. Insecure behavior patterns were significantly more common, corrected $\chi^2(1) = 16.94, p < .001$, in both groups maltreated by and seen with mothers (M-M and FM-M combined), and in both groups maltreated by mothers and

currently living with foster mothers (FM-M and FM-FM combined), corrected $\chi^2(1) = 2.68, p < .025$, than in the relevant comparison groups. Interestingly, the two children who behaved securely with mothers who previously maltreated them were the only children in the FM-M and M-M groups whose mothers were earlier described by caseworkers as capable of some warmth and responsiveness, albeit intermittent. Of the other

Table 1: Number and percentage of infants in each of the groups receiving each attachment classification

GROUP	A (Avoidant)		B (Secure)		C (Resistant)	
	N	%	N	%	N	%
M-M, Maltreated by mother	1	73	1	9	2	18
Comparison	1	9	1	91	0	0
FM-M, Maltreated by mother	5	83	1	17	0	0
Comparison	1	17	5	83	0	0
FM-FM, Maltreated by mother	3	50	2	33	1	17
Comparison	3	50	3	50	0	0
Maltreated by Other than Mother or Perpetrator Unknown Comparison	1		7	78	1	11
Comparison	1	11	8	89	0	0
Overall Maltreatment	17	53	11	34	4	13
Comparison	6	19	26	81	0	0

mothers in these groups, one was a chronic schizophrenic, 3 were mentally retarded, 2 were withdrawn or depressed, 1 was a drug addict, 1 an alcoholic, and 2 were considered “inadequate mothers.” Probably because of sampling errors associated with small samples, we observed a surprisingly and inexplicably high (50%) incidence of avoidant behavior in the FM-FM comparison group.

In marked contrast with the findings, there was no increase in the number of children behaving insecurely in the “Other” group, in which the source of maltreatment was either unknown or known to be someone other than the biological mother. Of these 9 children, 3 were physically abused (once) by their fathers, 1 was physically abused occasionally by his stepfather, 1 was sexually abused once by her uncle and 4 were physically abused by unknown persons, 3 occasionally and 1 once. The results suggest that abuse by someone other than the biological mother does not affect the apparent security of behavior toward the mother.

It may be significant that the one child in this group who behaved insecurely with her mother experienced severe emotional and physical neglect, presumably by the mother, in addition to the physical abuse by her father. Two of the remaining children also experienced “intermittent emotional neglect” by their mothers, but this apparently did not affect their pattern of behavior toward their mothers.

In Table 2, the subjects are divided on the basis of their clinical status (neglect by mother, abuse by mother, abuse by other than mother or unknown perpetrator) rather than on the basis of current living arrangements. Significantly more of those neglected, corrected $\chi^2(1) = 8.03, p < .005$, or abused (Fisher exact, $p = .025$) by their mothers behaved insecurely than in the respective comparison groups. Especially noteworthy was an increase in the number of infants who behaved avoidantly, which was significantly more common in both the neglect (63% vs 25%; corrected $\chi^2(1) = 5.80, p < .025$) and abuse (86% vs 14%; Fisher

Table 2: Number and Percentage of Infants in Each Clinical Group Receiving Each Attachment Classification

GROUP	A (Avoidant)		B (Secure)		C (Resistant)	
	N	%	N	%	N	%
Neglect by mother	10	63	3	19	3	19
Comparison	4	25	12	75	0	0
Abuse by mother	6	86	1	14	0	0
Comparison	1	14	6	86	0	0
Maltreatment by Other than Mother or Perpetrator Unknown	1	11	7	78	1	11
Comparison	1	11	8	89	0	0
Overall Maltreatment by mother	16	70	4	17	3	13
Comparison	5	22	18	78	0	0
Overall Maltreatment	17	53	11	34	4	13
Comparison	6	19	26	81	0	0

exact $p = .025$) groups than in their comparison groups (25% and 14%, respectively). There was no significant difference between the abuse group and neglect group in the proportion of infants behaving avoidantly or insecurely. In this sample, 3 of the 4 infants who behaved resistantly were in the neglect group. (The other was in the other group.) Although there was variability in the incidence, frequency, regency, and length of foster-care placements among infants in all four of the maltreatment groups, no relationship was found

between pattern of attachment behavior and any of these variables. There was also no relationship between the age of the child and Strange Situation behavior. There was no significant difference between children in foster care filmed with their biological mothers and those in foster care filmed with their foster mothers. Nor in the other group was there a difference between those who had been maltreated by men and those who had been maltreated by women.

Discussion

In general, these results confirm our predictions and are consistent with those reported by George and Main (1979)^[14] and Egeland and Sroufe (1981)^[11]. As had Egeland and Sroufe (1981)^[11], we observed a remarkably increased incidence of insecure behavior among the children who had been maltreated by their mothers, whereas in most of the comparison groups the number of children who behaved securely was approximately what one would expect, based on previous findings (Ainsworth *et al.*, 1978)^[10]. The vast majority of the infants in the maltreatment groups (17/21) who behaved insecurely behaved avoidantly, as one might have predicted, given the results obtained by George and Main (1979)^[14].

Unlike Egeland and Sroufe (1981)^[11], we did not find many infants in the maltreatment groups behaving resistantly-even in cases of neglect. This discrepancy may not be very significant, however, as Egeland and Sroufe observed resistant behavior mainly among 12-month-olds. Most of these infants behaved securely or avoidantly at 18 months. This internal inconsistency, coupled with the fact that our subjects ranged in age from 8 to 31 months, with an average of 18.4 months, may help explain this one difference between the results of the two studies. Concordance with the results of these other studies is especially noteworthy, given the heterogeneity of our clinical sample, and the use of a nonstandard Strange Situation procedure, involving only one reunion, a male (rather than a female) stranger, and an intervening interruption for the purpose of development assessment. The consistency across studies suggests that these variables do not affect the validity and usefulness of the approach Ainsworth has recommended. The fact that maltreatment appears to increase the likelihood of insecure attachments to the maltreating adult provides evidence concerning the validity of the Ainsworth system for classifying the security of attachment (Ainsworth *et al.*, 1978)^[10]. The proportion of insecure patterns was at its highest among the children who were still living with their maltreating mothers at the time of observation. Our findings suggest that, so far as socioemotional development is concerned, the maltreated child is in an environment not conducive to optimal development. This finding is especially important to the study of socioeconomic development because, despite claims to the contrary, there is little reliable evidence yet concerning the relationship between antecedent parental behavior and infant behavior in the Strange Situation (Lamb *et al.*, 1984)^[1]. As Lamb *et al.* point out, however, and as the present results confirm, maltreatment is reliably associated with insecure behavior in the Strange Situation.

This suggests that parental behavior does affect Strange Situation behavior and thus underscores the need for and potential value of research designed to explore the antecedents of Strange Situation behavior in "normal" (rather than maltreating) family contexts. Another interesting finding was that the incidence of insecure behavior was not elevated in the group comprising infants who had been maltreated by adults other than their primary caretakers. This supports previous findings suggesting that behavior in the Strange Situation is characteristic of specific relationships, rather than of the infant (Grossmann, Grossmann, Huber, & Wartner, 1981; Lamb, 1978; Lamb, Hwang, Frodi, & Frodi, 1982; Main & Weston, 1981)^[18, 19].²: Thus when the child is maltreated by another adult,

attachment behavior toward the mother appears not to be adversely affected. However, in the one instance where abuse by another and severe maltreatment by the mother were coincident, insecure behavior was observed. Moreover, these findings add to our understanding of the effects of maltreatment and also provide support for the usefulness of the attachment classification system as a means of assessing specific infant-adult relationships (Ainsworth *et al.*, 1978)^[10]. Of course, the system has limitations in that a secure attachment may exist, even when there are deviations in other aspects of development (Gaensbauer & Harmon, 1982)^[12, 13]. For example, most of the maltreated infants in this study displayed affective blunting or flattening (Gaensbauer, 1982)^[12, 13], even though some evinced secure behavior when the Ainsworth classification procedure was employed.

Overall, our results suggest that, whereas maltreatment per se does not necessarily affect the pattern of attachment behavior (cf. the "Other" group), maltreatment by a caretaker dramatically increases the likelihood of insecure behavior to the maltreating adult. The insecurity is manifest toward the abuser even after the child has spent some time in an alternative, presumably nonabusive, setting (cf. the FM-M group). Even though one might have expected brief separations to increase the likelihood of insecure-resistant behavior (Bowlby, 1973)^[9], this was apparently not the case. Small sample sizes, however, preclude further speculation or discussion. For the same reason, little should be made of the fact that infants maltreated by their biological mothers appeared to behave insecurely to foster mothers. This could reflect a generalization from mother to surrogate mother of a characteristic social style, it could reflect the absence of an attachment to the foster mother (particularly since some of these infants had spent little time in the care of the present foster mother), and it could suggest that the quality of foster care is suboptimal perhaps because foster mothers protect against future disappointment by avoiding very close relationships with their charges. Caution is also warranted by the fact that the infants and toddlers observed with foster mothers may well have experienced unusually severe and chronic maltreatment. Because sample sizes are necessarily small in studies of this sort, it is essential that findings be replicated in independent samples before being considered reliable. Although several researchers have now shown that maltreatment is associated with insecure attachment toward the perpetrator, we do not yet have sufficient evidence regarding attachments toward other people. Clearly, further research on these and related issues—such as whether abuse and neglect can and should be distinguished—would greatly advance our understanding of the effects of maltreatment on socioemotional development.

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