Developmental Play
Ages of Physically Abused and Nonabused Children

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Key Words: child development • imitative behavior • learning • play and playthings

Although the specific effects of physical abuse are largely unknown, studies have shown deficiencies in the social behaviors of physically abused children. Because play is an important developmental process influencing socialization, physical abuse may adversely affect the developmental play age of children. This study compared the developmental play age of two groups of children aged 1 to 5 years, 12 of whom were physically abused and 12 of whom were not physically abused. Children's play behaviors were recorded using the Preschool Play Scale. Deficits in developmental play age and play imitation were found in the abused group. These results have implications for occupational therapy practice in the identification, assessment, and treatment of physically abused children.

Occupational therapists who treat children are often confronted with a wide range of emotional and physical problems. In some cases a medical etiology is not readily identified and environmental factors must be considered. Child abuse may be one of the factors leading to emotional and/or physical problems. Problems stemming from child abuse can be difficult to diagnose because abusive parents may try to withhold or conceal information concerning the abuse.

Despite increasing societal awareness of child abuse as a widespread problem, the emotional and behavioral problems associated with physical abuse have not been adequately quantified. However, general areas have been identified. Wolfe and Mosk (1983) found that physically abused children display a significantly higher number of behavioral problems and fewer social competencies than do nonabused children. Christiansen (1978) found that physically abused children are more often in special education classes and classes for the educable mentally retarded than are nonabused children. The academic achievement of physically abused children was also found to be generally below grade level.

Occupational therapy has traditionally been concerned with normal development and the use of functional activities as a therapeutic tool. Play is a developmental activity (Knox, 1974), one of the most common activities engaged in by children. Therapists who work with children need to be familiar with play development and be able to use it appropriately in assessment and treatment (Rast, 1984). The impact of physical abuse on the developmental play age of children is important for occupational therapists to consider when detecting and treating problems that may result from abuse.

Review of the Literature

As a developmental and mastery process (Takata, 1971; Wolfe & Mosk, 1983), play is one of the most important activities of childhood (Rast, 1984). It influences how children integrate information from the environment (Florey, 1981) and helps them learn to master their environment and use its resources (Kielhofner, Barris, Bauer, Shoestock, & Walker, 1983).

Kielhofner and colleagues (1983) stated that "play is extremely sensitive to environmental conditions" (p. 305). A disruption in the opportunities for normal play may adversely affect a child's ability to interact with others and to solve problems appropriately (Kielhofner et al., 1983). Vandenberg and Kielhofner (1982) stated that play is an important tool for developing culturally acceptable behaviors and social skills. They suggested that therapists examine the play histories of patients with psychosocial dysfunction for inadequacies in play and playfulness. Although play
disorders have been found in some emotionally disturbed children (Lowellfeld, 1967) and among juvenile delinquents (Serok & Blum, 1979), developmental play levels of abused children have not been specifically studied. However, observations of behaviors of abused children during play have been noted (George & Main, 1979; Herrenkohl & Herrenkohl, 1981; Jacobson & Straker, 1982; Jones, 1981; Kempe, 1976; Mirandy, 1976; Reidy, 1977).

Jones (1981) found that physically abused preschoolers tend to develop one of two distinct behavior patterns: (a) apathetic and withdrawn with a passive method of coping, or (b) negative and aggressive with an action-oriented method of coping. Mirandy (1976) referred to these extremes in behavior patterns and noted that the majority of abused preschoolers lacked basic play skills. Increased aggressive behaviors during play (George & Main, 1979; Herrenkohl & Herrenkohl, 1981; Reidy, 1977) and/or a low tolerance for frustration (Herrenkohl & Herrenkohl, 1981) may be characteristics of physically abused children.

Jacobson and Straker (1982) found physically abused children to be less socially interactive than nonabused children and to interact in a less imaginative fashion with less enjoyment. Kempe (1976) found a comparative lack of interest, enjoyment, and ability to play in physically abused children. Kempe also found that abused children did not seem able to organize their play into a planned or structured activity, often anticipated their own failure, and did not involve an adult in their play as often as their nonabused peers.

Play therapy has been used in conjunction with other therapeutic modalities in the treatment of child abuse (Cohn, 1982). Although most children's scores on developmental tests increased by the end of the treatment, no control group was used, making it impossible to determine the effectiveness of play therapy on the rehabilitation of abused children on an empirical level.

Physically abused children lack some of the basic play skills necessary for development and socialization. The present study examined the developmental play levels of physically abused children and nonabused children from similar economic backgrounds.

For this study, physical abuse was defined as purposeful, hurtful touching or contact directed at a person which results in bruising or other damage to his or her body (Richards, Purdy, Reynolds, & Nickle, 1980). Developmental play was defined as any spontaneous, voluntary exploratory activity carried out for its own sake (i.e., enjoyment) (Scarfe, 1974).

Methods

Subjects

A sample of 12 physically abused children, ages 1 to 5 years, was obtained; 8 were from a women's support shelter and 4 from a child care center. It was not known which parent was abusive (the mother was the only source of information and not considered reliable on this topic). Another sample of 12 nonabused children was observed, 10 from a local child care center and 2 from a women's support shelter. The children were assumed not to have been abused if the child care staff had no such suspicions and if the mothers of the children signed and returned a form indicating that the children were not physically abused.

The groups were paired according to each child's age and family income. Race was not examined, because it has previously been considered unimportant (Kielhofner et al., 1983). Children of the same sex were paired in 42% of the sample pairs. The characteristics of the two groups are presented in Table 1.

Instrumentation

The Preschool Play Scale (Bledsoe & Shepherd, 1982; Knox, 1974) was used to determine the developmental play age for each child. The scale consists of four subsections: space management, material management, imitation, and participation. Each subsection has age-appropriate play behaviors listed in 1-year increments. The play age for each subsection is obtained, and the developmental play age is determined by adding the subsection play ages together and dividing by 4. This play assessment was reported to have high test-retest reliability (.80) and concurrent validity for normal children (Bledsoe & Shepherd, 1982).

An independent observer also assessed three children from each group to determine their play age. These data were compared to those of the primary observers for interrater reliability. This analysis yielded a 70% overall agreement. The percent agree-

### Table 1

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Abused Group (n = 12)</th>
<th>Nonabused Group (n = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age (years)</td>
<td>3.6</td>
<td>3.5</td>
</tr>
<tr>
<td>Net income per month</td>
<td>$964.00</td>
<td>$740.00</td>
</tr>
<tr>
<td>Number of males</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Number of females</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Average number of children in family</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Marital status of the mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Married</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Divorced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Separated</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>White/Black</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Average number of school years mother has completed</td>
<td>13.8</td>
<td>10.3</td>
</tr>
</tbody>
</table>
Table 2
Comparison of the Difference between Play Age Scores and Chronological Ages for the Abused and Nonabused Groups

<table>
<thead>
<tr>
<th>Play Scale Subsection</th>
<th>Abused</th>
<th>Nonabused</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space management</td>
<td>2.7</td>
<td>3.4</td>
<td>2.13</td>
<td>.05</td>
</tr>
<tr>
<td>Material management</td>
<td>3.1</td>
<td>3.5</td>
<td>1.41</td>
<td>NS</td>
</tr>
<tr>
<td>Imagination</td>
<td>2.8</td>
<td>2.8</td>
<td>.97</td>
<td>NS</td>
</tr>
<tr>
<td>Participation</td>
<td>2.5</td>
<td>3.5</td>
<td>2.21</td>
<td>.05</td>
</tr>
<tr>
<td>Developmental Play Age</td>
<td>2.8</td>
<td>3.5</td>
<td>2.01</td>
<td>NS</td>
</tr>
</tbody>
</table>

ment was 100% for the physically abused subjects and 33% for nonabused subjects.

Procedures
The mother of each child was asked to provide demographic data and answer the following three questions:
1. How much time per day do you spend playing with your child?
2. How much time does your child spend playing without you (or your spouse) on a weekday? On a weekend day?
3. How much time does your child spend watching television on a weekday? On a weekend day?

After this information was gathered, each child was observed for 40 minutes in a free play situation independent of the mother. At least one other child of approximately the same age (±1 year) was present. The play setting was located in the facility the child was attending or in the women's support shelter. Each play environment offered a wide variety of age-appropriate toys, games, and play opportunities.

Results
To ensure similarity between the abused and nonabused groups, an independent t test was used to determine whether there was a significant difference between the chronological ages of the children in the two groups and the family income of the children in the two groups. No significant differences were found between the chronological ages (t = .188) or incomes (t = .016) of the groups. A dependent t test was used to determine whether there was a significant difference between the play age and the chronological age of the children in each group. No significant difference was found for the nonabused group (t = .883), but there was a significant difference (t = 3.34, p = .01) for the abused group. The play age was 8.4 months below the chronological age for the abused children, and 2.2 months below for the nonabused children. Eleven of the abused children, compared to six of the nonabused children, had play ages below their chronological age.

An independent t test was used to determine whether there was a significant difference in the amount that the play age deviated from the chronological age for both groups. A significant difference (t = 2.13, p = .05) was found. This test was also used to analyze the significance for the amount the play age deviated from the chronological age for the two groups on each subsection of the play scale. A summary of the t-test results comparing the difference between each play age subsection score and the chronological age of the subjects for the physically abused and nonabused groups can be found in Table 2. A significant difference (p = .05) was found only for the imitation subsection of the play scale.

The chi-square median test was used to compare the number of hours reported by the mothers in answer to the three questions dealing with socialization. Results demonstrated a significant difference ($\chi^2 = 5.37, p = .05$) between the groups for the number of hours the mothers reported the children watched television on a weekday. The physically abused group was reported to watch about 1½ hours more than the nonabused group. No difference was found for the other questions. For clinical reference, the approximate number of hours reported by the mothers in answer to the three socialization questions is provided in Table 3.

Clinical notations of violent or withdrawn behaviors were taken during the observations. Four of the physically abused and two of the nonabused children displayed violent behaviors of hitting or pushing another child. Four of the physically abused children and one nonabused child were very quiet when compared to peers and had little verbal interaction with them.

Discussion
The physically abused children displayed a lower developmental play age in comparison to their chronological age than did the nonabused children. The major difference in developmental play ages was due to lower scores on the imitation subsection of the play scale and, in part, to lower scores on the participation subsection.

Table 3
Comparison of Approximate Number of Hours Reported by Mothers in Answer to Socialization Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Abused Group</th>
<th>Nonabused Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spent playing with child</td>
<td>1.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Time child spends playing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>on a weekday</td>
<td>5.5</td>
<td>5.4</td>
</tr>
<tr>
<td>on a weekend day</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>Time child spends watching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>television on a weekday</td>
<td>2.8</td>
<td>1.3</td>
</tr>
<tr>
<td>on a weekend day</td>
<td>3.3</td>
<td>2.6</td>
</tr>
</tbody>
</table>
The imitation subsection includes not only imitation (primarily of adults and domestic mimicry) but also imagination. This is consistent with the findings of Jacobson and Straker (1982), who found that abused children interact less imaginatively than do nonabused children. They also found abused children to be less socially interactive, which relates to the lower play age in the participation subsection (type of social interaction, cooperation, and language). Clinical observations of either violent or withdrawn behaviors in eight of the physically abused and only three of the nonabused children support the findings of Jones (1981) and Mirandy (1976).

Abused children watched more television per day, but reportedly played about the same amount of time as nonabused children. The trend toward greater play time with the mother in the nonabused group, coupled with less television viewing, may, in part, contribute to the minimal discrepancy found between play age and chronological age. Also, the nonabused subjects may spend more time observing parents, thus contributing to the increased domestic mimicry and imitation of adults.

There are certain limitations to keep in mind when interpreting the results. First, the number of observations and different play environments for each subject was limited. Florey (1981) stated that each child should be observed for two 20-minute sessions in a variety of play settings. This might have increased the opportunities to observe the children displaying typical play behavior; however, the transient nature of the population studied made this approach impractical.

Second, there was low interrater reliability for the nonabused subjects. The concern here is that the primary observer tended to record a higher play age than did the independent observer. However, when reviewing notes on why each play age was selected, the independent observer often agreed with the primary observer as to the behaviors each child exhibited.

Despite these limitations, the study has implications for occupational therapists in the possible identification, assessment, and treatment of physically abused children. A decreased developmental play age as assessed by the Preschool Play Scale, especially in the imitation subsection, may be a result of physical abuse. Also, pediatric occupational therapists through their observations of developmental play behaviors can help identify physically abused children. Furthermore, developmental play age may be used as an assessment tool for evaluating physically abused children when determining problem areas. If deficiencies are found in basic play skills, play therapy may be an appropriate occupational therapy treatment modality for the abused child.

Some potential research areas for the examination of the specific effects of abuse on play are as follows:
1. Documenting the number and type of violent behaviors displayed by physically abused children compared to nonabused children during play.
2. In-depth study of the social interactions of abused children during play.
3. Comparison of developmental play ages of physically abused and nonabused children between the ages of 6 and 12 years.
4. The effects of play therapy as a treatment modality for physically abused children.

Summary
 Twelve physically abused and 12 nonabused children, aged 1 to 5 years, were observed in a play environment. A developmental play age for each child was determined according to the Preschool Play Scale. Physical abuse appears to contribute to a lower developmental play age. Therapists can use this information for the identification, assessment, and treatment of physically abused children.

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References


