The Effect of Mothers' Social Support and Life Changes On the Stimulation of Their Children in the Home

JOHN M. PASCOE, MD, MPH, AND JO ANNE EARP, ScD

Abstract: The relationship between mothers' life changes, social support, and the preschool home environment of their children was analyzed three years after all study children were discharged from a neonatal intensive care unit. The number of reported life changes occurring to mothers since the births of the children in the group was not related to the amount of home stimulation mothers provided their children; however, mothers reporting more social support provided a more stimulating home environment unrelated to the number of life changes. (Am J Public Health 1984; 74:358-360.)

The literature suggests that familial social networks play a major function in protecting children from maltreatment. In contrast, social isolation has consistently been linked with child maltreatment. A variety of mechanisms have been hypothesized by which social support is of benefit to the parent-child relationship. A prime function of social support may be to offer a "life-line" to parents under stress. This life-line may take the form of emergency child care services, the inhibition of abusive impulses, the reassurance of personal worth, daily task-sharing among family members, or the provision of information concerning child behavior and appropriate child management practices.

Social support has also been conceived as a factor that moderates the putative detrimental effect of many life changes, e.g., divorce, loss of job, change in health, on the home environment, especially for the mother. The most vulnerable group appears to be those individuals reporting many life changes with little social support.

We examined the impact of social support and life changes on the ability of mothers to provide home stimulation to preschool children. Our hypothesis was that mothers with many life changes who perceive high levels of social support provide more home stimulation than isolated mothers with a similar number of life changes.

Method

Children discharged over a 13-month period from North Carolina Memorial Hospital's Neonatal Intensive Care Unit (NICU) were evaluated in 1978, three years after their births (Figure 1). Between May 1975 and June 1976, 422 infants were admitted to the NICU, 167 of whom were not included in this study because of rapid recovery, death, or discharge to an adoptive or foster home. The families of each of the remaining 255 infants underwent an indepth interview by the nursery social worker before they left the nursery. A family leaving the nursery with a score of 10 or more on the Hunter/Kilstrom Scale was designated "at risk" for subsequent parenting failure. A family whose score was less than 10 was designated "not at risk."

Forty-one infants were discharged from the neonatal intensive care unit to "at risk" families, and 214 infants were discharged to "not at risk" families. All 41 of the "at risk" families were candidates for this study; 30 of these were located. A group of 41 "not at risk" families were individually matched on potentially confounding variables, i.e., sex, race, birthweight, and maternal education completed by the time of delivery; 32 subjects from the best matched subjects

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and seven subjects from the second best matched were located. The total sample of 69 (30 "at risk" and 39 "not at risk"), therefore, was made up of individuals at two ends of the social support continuum, to maximize the likelihood of including mothers within the sample of 69 who perceived their social support systems differently.

The 69 children, at the time of this study, were 2½-3 years old. Predominantly from rural, working class families, 41 children were Black and 28 were White. Mean birthweight for the sample was around 1900 grams, mean maternal education 10th grade. The 20 infants lost to follow-up and their respective mothers had similar mean birth-weight and maternal education compared to the families that were located. The primary care giver was the biological mother in 65 of the 69 study families. Grandmothers were the primary care givers in the remaining four families.

The preschool follow-up protocol included: a measure of environment stimulation (Inventory of Home Stimulation)\(^3\); a measure of maternal social support (Maternal Social Support Index)\(^4\); and a life change scale based on Holmes and Rahe’s schedule of Recent Life Events.\(^1\) A pediatric history, physical examination, and the McCarthy Scale of Children’s Abilities were also obtained during the home visit.

The Maternal Social Support Index (MSSI) provides information about the primary care giver’s perceptions of daily task-sharing among family members, satisfaction with relationships, availability of emergency help, and degree of community involvement.\(^*\)

### TABLE 1—Description of Study Variables

<table>
<thead>
<tr>
<th>Instrument Name</th>
<th>Inventory of Home Stimulation</th>
<th>Maternal Social Support Index</th>
<th>Life Change Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument Range</td>
<td>0-45</td>
<td>0-19</td>
<td>0-445</td>
</tr>
<tr>
<td>Sample Range</td>
<td>23-38</td>
<td>4-17</td>
<td>0-331</td>
</tr>
<tr>
<td>Sample Mean ± S.D.</td>
<td>34.03 ± 4.63</td>
<td>11.56 ± 2.96</td>
<td>145 ± 60</td>
</tr>
</tbody>
</table>

Nine items from Holmes and Rahe’s Schedule of Recent Life Events (since birth of child) were selected based on the face validity of their likelihood to affect the child’s home environment.\(\^\star\)** All selected items were weighted using the described method.\(\^\star\)

Caldwell’s Inventory of Home Stimulation\(^3\) quantifies, through direct observations and questions, the care giver’s emotional and verbal responsiveness and ability to provide a child with a safe, interesting home environment.\(\^\star\)**

For data analysis, the frequency distribution of the two independent variables—maternal social support and life changes—were each stratified into two groups, "high" and "low" at their respective means. Associations between the two dichotomous independent variables and the continuous variable, Inventory of Home Stimulation (IHS) were examined with two-way analysis of variance.\(\^6\)

### Results

Table 1 shows the possible range of scores for all three instruments and the mean and standard deviation of each variable for this sample. Table 2 displays the mean score on the Inventory of Home Stimulation and the standard deviation for each of the four subgroups created by dichotomizing the independent variables, social support and life changes. Mothers with high and low levels of life changes provided the same amount of stimulation to their infants, but mothers who perceived more social support provided more stimulation to their children, an effect that was unrelated to the amount of life changes they experienced.

### Discussion

These data suggest that social support is a more important parental determinant of adequate home stimulation for children than are maternal life changes. Although varying amounts of life changes did not produce lower levels of home stimulation in this example, all life change scores in this sample were relatively low, given the possible instrument maximum of 445. It is reasonable to assume that within any

### TABLE 2—The Relationship between Maternal Social Support, Life Changes, and Inventory of Home Stimulation (IHS) Scores

<table>
<thead>
<tr>
<th>Maternal Social Support</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Life Changes</td>
<td>High</td>
<td>(N = 16)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>(N = 22)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(N = 36)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(N = 36)</td>
</tr>
</tbody>
</table>

**Main Effect**
- Maternal Life Changes: p > .2
- Maternal Social Support: p < .0001
- Interaction: p > .2

\(^*\)In order to measure the MSSI’s validity, it was used in an indigent urban setting during an earlier study in which mothers who had been reported to the departments of social services for maltreatment of their children were found to score significantly lower (p < .01) than mothers who had not maltreated their children.\(^4\) Interobserver reliability between two observers was 90 per cent.

\(^\star\)**Items involved in parental employment, marital status, health status, and location of a family’s home.

\(\^\star\)In rural Arkansas, Caldwell obtained correlations between Inventory of Home Stimulation scores and measures of child development\(^3\) that were significantly greater than those typically reported relating parental education and child’s IQ.\(^3\)

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family, times of great change (e.g., death of spouse, loss of job, illness) could produce a transient decrease in the provision of home stimulation. Perhaps, however, mothers who perceive a stronger support network could adapt more quickly and return to a “baseline” home stimulation level more rapidly than isolated mothers with similar numbers of life changes.

The data from this study suggest that the maternal home stimulation provided most rural children cared for by physicians will benefit from a strong maternal social support network. The relevance of these data for urban families is not established, but it seems plausible that the isolated urban mother will also have difficulty providing relatively high levels of home stimulation to her preschool child. The rare, highly stressed mother— rural or urban— may respond favorably to high levels of perceived support and provide more home stimulation than isolated mothers experiencing extreme numbers of life changes.

Earlier work has established the importance of didactic sessions and demonstrations of exemplary parent-child interaction in the prevention of parenting problems. 17 This study suggests that providing help with daily task-sharing and maternal emotional support may also facilitate parent-child interaction. Subsequent research in this area should focus on the definition, measurement, and documentation of social supports as well as delineate the mechanism by which maternal social support affects maternal-child interaction.

REFERENCES

Coronary Heart Disease Mortality Trends in Minnesota, 1960–80: The Minnesota Heart Survey

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Abstract: Age-adjusted mortality rates and trends from coronary heart disease (CHD) in Minnesota for the years 1960 to 1980 differed among eight health service areas. Regression of ten socioeconomic and demographic factors and intensive care and coronary care unit beds on area CHD mortality levels and slopes revealed a significant positive association only for levels of welfare income maintenance assistance with CHD mortality levels; there were no associations with trends. Further studies are needed to explain variation within states of CHD mortality rate levels and trends. (Am J Public Health 1984; 74:360–362.)

Coronary heart disease (CHD) mortality rates have decreased for nearly every age, sex, and race group in the United States. 1 Considerable geographic variation exists among states in CHD mortality rates and in the steepness of trends since 1968. 2 Even within states there is substantial variation in CHD mortality rates among counties. 3,4 Variation within states of CHD mortality trends has not been examined. 5 The Minnesota Heart Survey examined mortality trends within Minnesota for the years 1960 to 1980. The following null hypotheses were posed: Significant variation in CHD mortality levels and trends does not exist among the eight Minnesota health service areas; area rank on seven socioeconomic-demographic and three welfare/income maintenance factors measured in the 1970s does not correlate with the levels or trends in CHD mortality rates between 1968 and 1980; area number of intensive/corony care unit beds per population aged 30–74 years in 1977–1980 does not correlate with levels or trends in CHD mortality rates between 1968 and 1980.