Child Rearing Methods and Children's Health Behavior*

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A developmental pattern of child rearing was found to be associated with better health care practices by children than a disciplinary pattern of child rearing. The developmental methods included substantial use of reasons and information, rewards, and granting of autonomy. Based on these findings and a review of previous research, the higher level of health practices of children reared by developmental than of those reared by disciplinary methods is interpreted as an expression of the differential effectiveness of these contrasting child rearing approaches in developing the child's resources and capacities for coping and taking care of himself.

This paper examines the relationship between methods of child rearing used by parents and their children's personal health care practices. The child rearing methods to be examined are the tendency to grant autonomy or to control, the extent to which reasons and information are supplied, and the tendency to reward good behavior or to punish misbehavior. It was hypothesized that children whose parents encouraged autonomy and responsibility, supplied reasons and information, and rewarded good behavior to a greater extent than they punished misbehavior would have better health practices than children whose parents made little attempt to develop informed, independent performance by the child, and who emphasized punishment to enforce behavior standards.

The first group of methods are consistent with a "developmental" approach to child rearing in that they focus on developing in the child the capacities needed to care for himself. The second group are labelled here "disciplinary" methods because they focus on obtaining unquestioning obedience to the parents' specifications. The distinction made here is rooted in that made by Duvall (1946) between the "developmental" approach to motherhood that emphasized growth and development, training for self-reliance, and guidance with understanding, and conceived of the child's role as flexible, and the "traditional" approach that stressed specific behavioral conformity and obedience in the child, and was based on the use of disciplinary methods.

Since no studies were found that investigated effects on children's health behavior of various child rearing methods, there were neither firm theoretical nor clear empirical precedents on which to base the hypothesis. However, findings concerning the effects of child rearing methods on other kinds of child behavior, such as competency, self-reliance, self-control, self-esteem, outgoing social behavior, and mental growth, are generally consistent with the hypothesis proposed here. These other findings point toward a general conclusion that use of reasons, granting of autonomy, and rewarding of good behavior contribute to the development of children's ability to take care of themselves, while the disciplinary methods inhibit the development of these capacities.

The paper first examines the interrelationships among the elements of the proposed "developmental" and "disciplinary" child rearing models. Second, the relationships of the separate child rearing variables—use of reasons, reward-punishment, and autonomy-control—to personal health practices of children are examined. Next, an analysis is presented to indicate the rela-

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tive importance of the three child rearing methods and the combined influence of the three “developmental” and “disciplinary” methods on children’s health practices. Finally, there is a discussion of how these findings bear on previous empirical and theoretical reports concerning how child rearing methods affect children.

Method

The study is based on information obtained from detailed interviews with a representative cross-sectional sample of families with children aged 9 to 13 from households having a husband in residence and living in a northern New Jersey city. Interviews were conducted by professionally trained interviewers using a standardized instrument with fixed-alternative questions concerning health and family behavior. Almost all questions asked the respondent were about current behavior in order to avoid the distortions involved in retrospective reports. Randomizing procedures were used in the selection of the child respondent within families to assure accurate representation of the two sexes and the various ages. Separate interviews were conducted with one child, the father, and the mother in 273 families and with a child and the mother in an additional 237 families. The results presented in the tables are based on the children’s interviews from the total sample of 510 families.

In the present analysis primary emphasis has been placed on the responses of the children because, however lacking in objectivity they might be, it is their perceptions of how their parents treat them that were thought to be most relevant to the children’s health behavior, and because the children are in a better position than their parents to view the combined impact of the father-mother team. However, the mothers’ and fathers’ reports on how they reared the child have also been analyzed in order to provide three perspectives on child rearing.

Variables and Measures

Each of the variables is represented by one or more composite indices; each index was based on a number of questions with scored answer categories. A respondent’s score on a given index was obtained by applying a formula that assigned arbitrary weights to answer categories and summed the respondent’s answers to the specified group of questions.

Child Rearing Measures. The independent variable—child rearing methods—includes the use of reasons and information, use of reward and punishment, and granting of autonomy, each of which is represented by more than one index.

Use of reasons and information is represented by a health education index based on a question concerning whether or not the parent instructed the child in eight areas of health care, including teeth brushing method, proper diet, effects of smoking, appropriate exercise, cleanliness standards, bowel functioning, effect of sleep, and the reproduction sequence. There are three versions of this index, one based on children’s reports, a second on mothers’ reports, and a third on fathers’ reports. It is the child’s version of this index which has been used in tables to represent the concept “use of reasons.” Another index is based on the number of types of health education materials and techniques the parent used with this child. There are mothers’ and fathers’ versions of this index.

Autonomy-control is represented by an index of the child’s general autonomy based on the extent to which the child carried out a variety of activities on his own without the parents’ help or reminder. Included were such items as getting around the town by himself and trying new things on his own. A second index was constructed by incorporating items concerning health care autonomy along with general autonomy in order to have a measure of the child’s overall level of autonomy. There are children’s, mothers’, and fathers’ versions of both of these indices. The child’s version of the overall autonomy index has been used to represent this concept in tables.

An additional index was based on whether or not the mother and father expected the child at age 9 to perform specified activities by himself.

Reward-punishment is represented by: (1) A “reward” index based on the number of different rewards used by parents in
response to the child's good behavior, such as praising, doing special things for him, and showing physical affection. (2) A "punishment" index based on the number of different forms of punishment used by parents when the child misbehaved, such as confinement, withdrawal of privileges, and corporal measures. It is the child's version of the "reward" and "punishment" indices that are presented in tables. (3) A "corporal" punishment index based on the extent to which parents applied physical measures such as slapping and spanking when the child misbehaved. The final index is labeled "reward-punishment" and was constructed by subtracting punishments from rewards in order to indicate the extent to which the use of punishment or reward predominated for a given child.

Health Practices Measures. The dependent variable—children's health care practices—is represented by eight indices based on children's reports of their personal health care practices. The criteria used to evaluate the quality of performance reported by children were descriptions in the medical-health literature concerning beneficial and harmful health practices.

Personal dental care was measured by questions about teeth cleaning practices.

Sleep habits were measured by questions about sleep regularity and quality.

Exercise habits were measured by the regularity and extent of participation in physical sports, games, and exercises.

Cleanliness habits were measured by the child's bathing and sanitation behavior.

Nutrition practices were measured by the quality of food consumed during a complete day, balancing valuable intake against useless and/or harmful intake.

Elimination practices were measured by regularity in bowel functioning.

Smoking was measured by frequency and quantity of cigarette smoking.

A summary index of the child's overall health care practices was constructed by combining the above seven specific health care indices.

It was intended that the measures of children's health practices reflect behavior that was somewhat discretionary on the part of the child and not dependent primarily on whether or not the parents pro-

vided facilities such as bathtubs, toothbrushes, and towels that are needed if the child is to perform the behavior. While there were variations among families in the quality of health facilities provided in the home, it was found that almost no child lacked the equipment needed for basic health routines. The possible exception is in the case of nutrition where children have wide discretion to eat more poorly but seldom to eat better than their family kitchens provide.

Results

Developmental and Disciplinary Child Rearing Patterns. The three dimensions of child rearing—use of reasons, reward, and granting of autonomy—were significantly correlated with one another, although the correlations were not extremely large.

<table>
<thead>
<tr>
<th>Use of Reasons</th>
<th>Use of Reward</th>
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<tbody>
<tr>
<td>Use of reasons: .277</td>
<td>.159</td>
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</table>

The correlations indicate that parents who employed one developmental method were significantly more likely to employ another developmental one than they were to use a disciplinary form, and vice versa. Thus, there appears to be a degree of compatibility among the three methods that were conceptualized as aspects of a "developmental" approach and among the three methods that were conceptualized as aspects of a "disciplinary" approach. This lends some support to the conceptual logic of the proposed child rearing model. However, the critical issue of this study is not the extent to which parents in actual practice have a consistent child rearing approach, but rather, the extent to which the three aspects of the child rearing model, separately and in combination, affect children's health practices.

Relationships Between Child Rearing Methods and Children's Health Practices. It was hypothesized that children whose parents supplied reasons and information, rewarded good behavior to a greater extent than they punished misbehavior, and encouraged autonomy and responsibility would have better health practices than
children whose parents made little attempt to develop informed, independent performance by the child, and who emphasized punishment to enforce behavior standards.

Use of reasons. Based on children's reports, the data indicate that the greater the use of reasons by parents, as measured by the extent of health education provided by the parents, the higher the level of children's total health practices.

The specific types of health practices that were found to be significantly related to use of reasons were elimination, care of teeth, and cleanliness. Parents' use of reasons was not significantly related to exercise, nutrition, smoking, or sleep habits. Table 1 presents the correlation coefficients.

When these relationships were checked by utilizing mothers' and fathers' reports, only mothers' reported use of a variety of health education methods was found to be related significantly and positively to children's health practices. This difference in results for fathers and mothers will be discussed later.

Reward and punishment. There was found to be a consistent positive relationship between parents' use of rewards and the quality of children's health practices. Based on children's reports, the more rewards for good behavior and the greater the preponderance of rewards over punishments, the better the total health practices of children and the better their health practices in almost all specific health areas. Notably, the two punishment indices—the number of punishment forms used and the extent of corporal punishment—were not significantly related to children's health habits, with the exception of sleep habits, which were significantly better when punishment was low. These data indicate that the positive influence of rewarding good conduct is much more important for children's health habits than any negative influence resulting from punishment.

Similar results were obtained when mothers' reports were used. No significant relationships were found between fathers' reports of their use of reward or punishment and their children's health practices.

Autonomy-control. Regardless of which of the children's autonomy indices was used, the higher the level of autonomy granted, the better the children's overall health practices and the better their practices in all specific areas except nutrition.

The findings are similar when mothers' reports are used, but the relationships between fathers' reports of the child's autonomy were not significantly related to children's health practices.

**Fathers', Mothers', and Children's Reports on Child Rearing.** The fact that children's and mothers' reports on child rearing methods were found to be consistently related to children's health habits, but fathers' reports were not, may be accounted for by the difference in orientation of the questions asked of children, mothers, and fathers. Children reported on the child rearing methods used by their "parents" as a combined team, while the father and mother each reported on his or her own

<table>
<thead>
<tr>
<th>TABLE 1. CORRELATIONS BETWEEN CHILD REARING METHODS AND CHILDREN'S HEALTH PRACTICES BASED ON CHILDREN'S REPORTS *</th>
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<tr>
<td>Health practices</td>
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<tr>
<td>Total health practices</td>
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<tr>
<td>Sleep</td>
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<td>Exercise</td>
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<td>Elimination</td>
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<tr>
<td>Dental care</td>
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<tr>
<td>Cleanliness</td>
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<td>Nutrition</td>
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<tr>
<td>Smoking</td>
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* A positive correlation indicates that high use of reasons, reward, and autonomy, and low use of punishment is associated with good health practices. Correlation coefficients of .104 are significant at the .05 level and coefficients of .147 at the .01 level.
individual practices. By accepting at face value the finding that fathers are simply less influential than mothers, one can interpret that children's reports of the total child rearing experience coincide closely with mothers' reports because mothers perform most of the child rearing activity, while children's experience of child rearing is considerably different from their fathers' reports because fathers perform so little child rearing activity.

Reasons, Reward, and Autonomy. Since substantial use of reasons, high use of rewards, and granting of considerable autonomy to the child were each found to be associated with better child health practices than little use of reasons, reward, and autonomy, it was essential to determine whether each of the methods was independently related to children's health practices or whether the influence of each was diminished or eliminated under control for the other two. Partial correlations showed that the relationship of each of the three child rearing methods to children's total health practices persisted under control for the other two, although the relationship of use of reasons was somewhat diminished under control.

On the basis of these findings it would be expected that a combination of the three child rearing methods into the developmental and disciplinary styles of parenthood would discriminate more efficiently than any of the methods considered singly. This did prove to be the case. A stepwise regression analysis showed that autonomy was the most influential of the three child rearing variables, (as indicated by the standardized regression coefficients in Table 2). In addition, each of the other two methods did contribute an additional significant increment to the variance explained in children's overall health practices. As shown by the $R^2$ in Table 2, autonomy accounted for 11 per cent of the total variance in children's health practices; reward accounted for an additional 4 per cent beyond that accounted for by autonomy; use of reasons added 1 per cent beyond the other two child rearing methods. Combined, autonomy, use of reasons, and reward accounted for about 16 per cent of the total variance in children's health practices.

Thus, when parents practiced the three developmental methods in combination, their children's health behavior was substantially better than that of children whose parents employed a thoroughly disciplinary style of parenthood.

Separate stepwise regression analyses of each of the specific aspects of health care revealed that child rearing methods had greater influence on children's care of their teeth, cleanliness, sleep, and elimination habits than on other health habits.

There were also found to be some differences in which aspect of child rearing was most influential for various health practices. Autonomy was the most important child rearing variable with respect to dental, sleep, exercise, and smoking behavior, suggesting that self-management ability is especially important in these four areas of health care. Use of reasons had the most influence on cleanliness and elimination practices.

### Influence of Parents' Health Practices

Because of the positive relationship between parents' health habits and those of their children, it was necessary to deter-

<table>
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<tr>
<th>Variable entered:</th>
<th>Multiple R</th>
<th>$R^2$</th>
<th>Standardized Regression Coefficients</th>
<th>Increases in $R^2$</th>
<th>$F-$ ratio</th>
<th>P</th>
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</thead>
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<td>.2831</td>
<td>.1138</td>
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</table>
mine whether or not parents’ health habits might be responsible for the relationships found between child rearing methods and children’s health habits. This did not prove to be the case for the relationships persisted under control for level of mothers’ health practices.

The interaction between mothers’ health habits and the child rearing variables sheds additional light on the effect of child rearing practices, however. When mothers’ health habits were poor, a high level of autonomy and health training had a stronger positive effect on children’s health habits than when mothers’ health practices were good. This interpretation is suggested: when the mother serves as a poor example for health behavior it is essential that the child be emancipated from the confines of family influence. Both granting of autonomy and bringing health education materials into the home serve to extend the resources available to the child in developing his own health behavior patterns.

**Influence of Socioeconomic Status.** Although socioeconomic status had to be suspected as a possible extraneous variable because of its relationship to various aspects of child rearing and to health practices, socioeconomic status was not responsible for the relationships reported between child rearing methods and children’s health practices. The partial correlations between each of the child rearing variables and health care practices under control for SES indicate that the relationships are fully sustained.

A stepwise regression analysis indicates further that all three child rearing variables took precedence over SES in extent of influence on health practices. In fact, Table 2 shows that nothing was gained by adding SES to the “package” of independent variables beyond what could be accounted for by child rearing methods alone.

**Unexplained Variance.** The developmental-disciplinary child rearing model accounts for about 16 percent of the variance in children’s health practices, leaving the remainder unexplained. What other factors may be important? As has been indicated above, socio-economic status has been ruled out.

The conceptualization of the overall study, of which the present report is a part, proposes that various aspects of family organization are related to personal health practices of members. Promising dimensions of family organization that are under investigation include the extent of communication and support among family members and the extent of linkage between the family and other community systems.

**Discussion**

The discussion will attempt to relate the present findings concerning the effects of child rearing methods on children’s health behavior to previous empirical and theoretical work concerning effects of child rearing methods on other aspects of children’s behavior and development, including competency, self-reliance, self-control, self-esteem, outgoing social behavior, and mental growth.

**Use of Reasons.** Evidence from previous studies suggests that providing relevant information and reasons to children contributes to the development of their reasoning capacity and their ability to behave competently. Baumrind (1967) found that the parents of a group of competent children (self-reliant, self-controlled, explorative, and content) were more likely than the parents of other children to use reason rather than power to gain compliance and to encourage verbal give and take. In a related study, Baumrind and Black (1967:324) found that: “Parents’ willingness to offer justification for directives and to listen to the child were associated with competent behavior on the part of the child.” Becker (1964) concluded from his review of research that providing the child with reasons and information helps him to understand what is expected of him and what are the consequences of his behavior. A study (Smith, 1970) of the sources of parents’ influence on adolescents found that the parents’ resources as knowledgeable persons was the most significant variable.

These findings, together with those of the present study, point toward a general conclusion that use of reasons and information by parents helps to develop the child’s cognitive capacities so that he can behave competently. This interpretation was fur-
ther supported by a test made with the present study data. Using as a crude measure of the child's confidence in his general competency, a question which asked whether or not "I can do pretty much anything I set my mind to do," this measure of competency was related significantly both to parental use of reasons and to children's health practices.

**Reward and Punishment.** Previous studies have led to the following formulation of the process by which punishment and reward are thought to affect children: Punishment is less likely than positive methods to develop the child's inner resources for evaluating and correcting his own conduct. Punishment is likely to generate resentment and resistance that are restrained only when the fear of authority is maintained. Reward, on the other hand, provides enjoyment that becomes associated with the behavior itself, thus reinforcing the behavior. The present findings are consistent with the interpretations about use of rewards but not about use of punishment.

Parents who used rewards were found to be more likely to report that their procedures were effective than parents who used punishment (Coopersmith, 1967). Aronfreed (1968) reported that giving of specific rewards for initiative has been found consistently to be associated with children's achievement motivation and performance.

Aronfreed (1961) also found that children who are frequently punished tend to react to their own misbehavior with fear of authority, while infrequently punished children are more likely to develop internalized responses such as guilt. Thus, while parents may obtain superficial social conformity by using punishment, they may not achieve their longterm socialization objectives because children fail to develop their own internal capacities for self-correction (Clausen, 1968).

Other attempts to clarify the effects of punishment on children's behavior have involved explorations of the effects of punishment on children's aggression. Many studies (Becker, 1964; Eron et al., 1963) have found punishment positively associated with aggressive behavior. However, Sears (1961) found that punishment had differential effects on children at different ages, and other studies have found that punishment is associated with less aggression rather than more. This apparent inconsistency may be the result of the fact that increasing degrees of punishment by parents result in building up increasingly aggressive responses in children, but that the expression of aggression is inhibited by very severe punishment (Sears, et al., 1953).

Our present finding that use of rewards is associated with sound health behavior in children supports the theme emerging from previous studies—that use of reward fosters the development of the child's resources and capacities. However, the present data yield no evidence to indicate that level of punishment has an effect on the development of children's capabilities.

**Autonomy-Control.** A number of studies have produced evidence that is consistent with the present study findings. Granting of autonomy has been found to be associated with competency, self-control, self-reliance, outgoing social behavior, intellectual growth, and differentiated cognitive functioning—types of effects on the child that indicate ability to take care of himself. In addition, there is a stream of research that has found control to be associated with dependency, inhibition, obedience, and conformity to adult standards, as well as hostility and aggression.

If health habits are viewed as ability to take care of oneself, the former stream of research would lead one to expect that the hypothesis would be sustained. If, on the other hand, one viewed health habits as the child's conformity to adult standards of conduct, one might entertain the possibility that the hypothesis should be reversed—that control would be associated with better health habits. Since the hypothesis was sustained, there is support for the idea that autonomy produces competent performance and that the conformity and obedience produced by control are actually dysfunctional for development of good health behavior in children. The documentation of this interpretation follows.

Baumrind (1967) found that the parents of competent children were more likely than those of less competent children actively to train their children for indepen-
dence by exchanging information to advance the child's skills or decisions, and to grant autonomy by withdrawing a directive in response to an objection by the child or by allowing the child to make choices. The use of coercive power by parents was associated with maladaptive behavior in both boys and girls, with stereotyped and dependent behavior in boys, and regressive and fearful behavior in girls.

Children with restrictive parents were found to be socially withdrawn (Radke, 1946). Straus (1964:323) attempted to account for the tendency for children to be more "extroverted" when their parents are not power-assertive: "... the greater enjoyment of interaction during socialization experienced in the equal power situation will be generalized to all social interaction, resulting in a so-called extrovert type of individual."

In addition, children with highly restrictive parents have been found to receive little stimulation for mental growth (Baldwin et al., 1945). Witkin (1969) reported that boys whose mothers interacted with them in ways that encouraged appropriate differentiation and separation from the mother, as contrasted with those whose mothers kept them close and dependent, tended to have an articulated cognitive style, an articulated body concept, a developed sense of separate identity, and specialized structural defenses.

Bronfenbrenner (1970) concluded from his studies of child rearing in the Soviet Union that their constricting pattern of parental behavior "maximizes dependency and produces a child who is readily socialized to adult standards" (1970:81). Parental restrictiveness was found to have lasting inhibiting effects on children (Kagan and Moss, 1962), and to make children more conforming and dependent on adults (Becker, 1964).

In addition to dependency and obedience, aggression has been found to result from authoritarian child rearing methods. Significant correlations were found between the mother's power assertiveness and the child's hostility and power assertiveness toward children, and his resistance to children's and teachers' influence attempts (Hoffman, 1960). Becker (1964) also concluded that power asserting techniques are more likely to correlate with noncooperative and aggressive behaviors and also with externalized reactions to transgression (fear of punishment and projected hostility).

What are the mechanisms by which parental control is presumed to affect the child's moral development and his tendency toward hostility and aggressive behavior? Hoffman and Saltzstein (1967:54) proposed: "First, any disciplinary encounter generates a certain amount of anger in the child. . . . Power assertion is probably most likely to arouse intense anger in the child because it frustrates not only the act but also the child's need for autonomy." The fact that children with authoritarian parents often have feelings of discontent and unhappiness (Elder, 1961) supports this. The fact that aggression, dependency, and obedience have all been found to be outcomes of controlling parental behavior suggests that children of power-assertive parents may maintain an uneasy balance between conformity and defiance.

Based on the review of these previous studies of the effects of autonomy and control, on the findings in the present study indicating that autonomy was significantly and positively related to children's health practices, and on finding in the present sample that children's self-rating of competency was positively related both to autonomy and to health practices, the following conclusion is proposed: Granting of autonomy fosters competency and active coping behavior in children of which one important expression is sound health behavior. Control, on the other hand, inhibits the development of these capacities and produces instead a superficial and rigid conformity to adult standards that fails to obtain commitment or even sufficient persistency to enable the child to perform successfully the elementary routines of caring for his own body.

Developmental and Disciplinary Methods. Review of previous research as well as the results of testing the hypotheses in the present study point toward this general conclusion: that developmental child rearing methods are significantly more effective than disciplinary methods in developing
the child's capacities and resources so that he is able to cope effectively and take care of himself. The higher level of health practices of children reared by developmental than of those reared by disciplinary methods is viewed as an expression of the differential effectiveness of these contrasting child rearing approaches in developing children's competency and coping behavior.

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