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Parenting Dimensions and Styles: A Brief History and Recommendations for Future Research

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Abstract

Over the last decade, researchers have uncovered relationships between general parenting styles and children's obesity. This is an emerging area of research, and there currently is a great deal of interest in the parent's role. This review was written to provide researchers entering this area with a historical introduction to parenting research and to point to some directions for future inquiry. Over the last 75 years, considerable insight has been gained into individual differences in parenting behavior, especially regarding the dimensions underlying individual differences in general parenting approach, and parenting styles resulting from individual differences on these dimensions. The history of empirical attempts to identify parenting dimensions and styles is reviewed briefly, followed by a review of more recent studies of parenting styles. Next is a discussion of data analytic approaches to measuring parenting, with a particular emphasis on variable-centered versus person-centered approaches. Because investigators have often disagreed about which of these approaches is the most appropriate, the advantages and disadvantages of each are considered, along with recommendations for future research.

Introduction

For approximately 75 years, researchers have been investigating how individual differences in general parenting practices might influence child development.[1–7] Rather than focusing on specific parenting practices (such as breast versus bottle feeding or physical punishment versus time out), these researchers have tried to identify the child development correlates of general, cross-situational variations in general parenting approach, often referred to as parenting styles or dimensions. These studies focused less on what parents do and more on how they do it. One of the main reasons that researchers moved to this approach in the 1930s and 1940s was the failure of studies examining specific early caretaking practices in predicting individual differences in children's social/emotional development.[8]

The purpose of this article is to review the foundational research on the measurement and identification of parenting dimensions and styles, assess the consistency in findings, and discuss limitations that future research needs to address. Following this is a discussion of data analytic approaches to measuring parenting, with a particular emphasis on variable-centered versus person-centered approaches. Because investigators have often disagreed about which of these approaches is the most appropriate, the advantages and disadvantages of each will be considered, along with recommendations for future research.

Part I: Identifying Parenting Dimensions

Early Research

Researchers in the 1930s to 1960s, employing a variety of theoretical perspectives and methodological approaches, used various factor analytic methods to identify the major dimensions underlying observer ratings of general parenting characteristics.[1,6,7,9,10] In the typical study, trained observers spent considerable time interviewing or observing parents (or sometimes read through large files of material on parents) and rated parents on general trait terms (*e.g.*, strict, accepting, harsh) using Likert scales. Factor analyses of the data from these primarily European American, middle class samples typically identified two dimensions of parent behavior: One assessing constructs such as parental acceptance, warmth, or support and the other assessing constructs related to parental control. In five classic studies during this time period, the labels for

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the first factor were: Acceptance versus rejection,[7] emotional warmth versus hostility,[1] warmth,[6] love versus hostility,[10] and warmth versus hostility.[9] Labels for the second factor in these same five studies were: Dominance versus submission,[7] detachment versus involvement,[1] permissiveness versus strictness,[6] autonomy versus control,[10] and permissiveness versus restrictiveness.[9] The consistency of findings across studies was impressive, and two influential literature reviews (one in the late 1970s and one in the early 1980s) concluded that these two major dimensions of parenting could be labeled as parental support and parental control[11] or as parental responsiveness and parental demandingness.[4] As discussed in these reviews, these two factors were usually found in studies employing global observer ratings, parent reports, or child reports of parenting behavior.

Although it is tempting to conclude from the consistency of these findings across samples, methods, and analytic approaches that these are the major dimensions of individual differences in parenting, these findings may tell us more about how people think about and make judgments about the self and others than about actual parent behavior.[12] Two of the major dimensions identified in factor analytic and multidimensional scaling studies of person perception, for example, are evaluation and activity/potency[13,14]—dimensions that are close to warmth and control when applied to parenting. Thus, similar dimensions emerge for parents and nonparents when raters describe individuals with general trait terms (*e.g.*, kind, active, strict).

Reservations about the validity of coders' global ratings also came from a number of studies demonstrating that ethnicity of the coder (whether trained or untrained) appears to affect global ratings of parent behavior.[15–18] Although the nature of this bias differed across studies, it does suggest that observers' global ratings likely reflect, at least partially, the cognitive schemas of the coder.

Studies Employing Specific Behavioral Coding

Because of concerns about the validity of self-report and global rating measures of parenting in the early 1960s,[19,20] there was a movement away from self-reports and global ratings to detailed observational coding later in that decade.[2,21,22] Researchers have since suggested numerous ways to increase the validity of parent self-reports,[23,24] including avoiding vague questions and quantifiers, providing appropriate time referents, and clearly specifying the context in which behaviors occur. However, because global ratings are by design broad and context free, it is likely that they will always generate data that are contaminated by the observer's personal cognitive schema.

One way to reduce the impact of such person perception processes is to examine the results of factor analytic studies where specific parental behaviors were coded by highly trained observers. In such studies, observers code the occurrence of specific parenting behaviors (*e.g.*, commands, suggestions, threats) and the frequencies with which specific parenting behaviors occur. Because such studies involve training coders to simply record the occurrence of specific parent behaviors as they happen, these studies are less susceptible to the general person perception processes involved in making global judgments about the self or others (although admittedly, such processes still can come into play). Unfortunately, such studies are hard to find, mostly because behavioral coding is so labor intensive that the vast majority of studies employing specific behavioral coding do not have sample sizes large enough for conducting factor analyses.

Literature Review

To locate such studies, an extensive literature review was conducted of observational studies found in PsycINFO from 1900 to 2012. To ensure that relevant studies were not missed, a wide approach to the search was employed that identified a large number of abstracts. The keywords were ''mother*, father*, or parent*'' and ''observ*''. To reduce the search results, the abstracts were restricted to quantitative studies of preschool and school age children published in English in peer-reviewed journals.

Although the search yielded about 3000 abstracts, only seven studies reporting factor analyses of observational data were located. As expected, most observational studies had sample sizes too small for factor analyses. The seven studies were observational studies of mother–child or father–child interaction that involved molecular coding of specific parental behaviors (*i.e.*, the frequency of specific parent behaviors were coded during live or videotaped interactions of parents and their children) and factor analyses of the observational data were reported. Four of these articles were evaluations of large-scale, behaviorally based, parenting interventions,[25–28] and three were smaller-scale, correlational studies of parent–child interaction.[29–31] The sample sizes ranged from 80 to over 800 (two factor analytic studies employing smaller samples are not reviewed here). The studies were published between 1985 and 2010 and involved children between the ages of 2 and 9 years. Across studies, parents and children were observed in a range of settings including unstructured home observations, free play, teaching, and cleanup tasks. Although one study employed multidimensional scaling,[29] the rest reported the results of exploratory factor or principal components analyses, all using varimax rotations (rotations that identified uncorrelated factors). The number of behavioral codes entered into the factor analyses ranged from 6 to 28; the data were collected in four countries (Israel, Italy, the United Kingdom, and the United States).

Most of these factor analyses yielded three factors (one study reported one factor, five studies reported three, and one reported four). Examination of the behaviors loading on the factors showed that three similar factors were identified across most studies. Two factors concerned two patterns of parental control—the first (found in all seven studies) reflected highly directive and often critical parent

behavior (*e.g.*, commands, restrictions, negative comments, and threats) and the second (found in four studies) reflected autonomy promoting forms of control (*e.g.*, suggestions, gives choices, cooperation, and encouragement). These are similar to what Baumrind referred to as authoritarian and authoritative control practices[2] and what others have referred to as parent-centered and child-centered control.[32,33] The third commonly occurring factor (found in five studies) was a factor that reflected positive parental involvement with the child (*e.g.*, laughs, smiles, physical affection, praising, attending, and encouraging).

Comparison of these three factors to those derived from interview or global rating studies reveals similarities and differences. Although the three factors identified in the behavioral coding studies are similar to the global rating factors of warmth and control, control was broken into two separate factors characterized by high (authoritative) and low (authoritarian) warmth. The factor most similar to warmth (positive involvement) had to do with the level of parental enjoyment or support of the child in these play and teaching sessions.

Two less commonly occurring factors emerged as well. These apparently were a consequence of the coding systems used in some studies. Three studies yielded a factor that assessed neutral conversation (*e.g.*, providing information and responding to child verbalizations) and three studies yielded a factor assessing ineffective discipline (*e.g.*, excessive control, lack of follow-through on discipline, and provides child with no opportunity to comply). The neutral conversation factors likely reflect the fact that some coding systems used mutually exclusive and exhaustive codes to cover all verbalizations, so a factor reflecting general conversation emerged. The ineffective parenting factors likely emerged because codes for ineffective parenting were included in some of the evaluation studies. The ineffective parenting factors would likely fall into the ''structure'' dimension described in the next section.

No factors emerged in the molecular coding studies that were not examples of one of the five dimensions described above. This is remarkable given the wide range of methods, samples, coding systems, and procedures employed.

Identification of Parenting Dimensions beyond Warmth and Control

As illustrated by the ''neutral conversation'' and ''ineffective parenting'' factors described above, what comes out of a factor analysis is to a large extent a function of what goes into it. So, besides the person perception processes described above, a second reason that the classic parenting studies of the 1930s to the 1960s identified only two factors is that these studies focused primarily on the quality of parent-child interactions (*i.e.*, warmth) and the nature of parental discipline (control). Starting in the 1960s, parenting researchers began to investigate a wider range of parenting characteristics, including cognitive stimulation,[21,34,35] scaffolding (*i.e.*, assistance during problem solving),[36] monitoring,[37] and family rituals.[38] This led to a greater diversity of items being entered into factor analyses of parenting practices, which in turn led to additional dimensions.

As a result of these studies, several researchers have added a third general dimension to the assessment of parenting—a dimension-labeled structure—*i.e.*, the degree to which parents provide their child with a predictable, organized, and consistent environment. In three studies using parenting self-report questionnaires, the parenting characteristics making up the structure dimension included: (1) Involvement, consistency, and organization[39]; (2) clear and consistent guidelines, expectations, and rules for child behavior[40]; and (3) rules, routines, and organization.[41] In a large-scale questionnaire study involving over 1200 parents of 3rd to 5th graders, Skinner, Johnson, and Snyder identified six parenting dimensions: Warmth, rejection, autonomy support, coercion, structure, and chaos.[42] These six dimensions represent both ends of the warmth, control, and structure dimensions. In their confirmatory factor analyses, Skinner and colleagues found that the six dimension solution fit the data better than the three dimension solution.

So are warmth, control, and structure the primary parenting dimensions? On the basis of the research to date, these three factors do appear to reflect the major parenting dimensions identified thus far by most parenting researchers, especially if one acknowledges that parental control may be multidimensional (*e.g.*, authoritarian and authoritative control). More research on the nature of control needs to be conducted. Moreover, it is very likely that a fourth factor, cognitive stimulation, would emerge if standardized parenting assessments included measures of maternal behaviors such as verbal interactions and complexity of nonverbal stimulation. Such items, for example, are included on the well-validated HOME assessment.[35,43] It is also possible, however, that as new parenting theories identify additional domains of parent behavior, new dimensions will be identified as well.

Part II: From Parenting Dimensions to Parenting Styles

Baumrind's Pioneering Research

Although most early parenting researchers focused on identifying general parenting dimensions and their correlates, in the mid-1960s, Diana Baumrind[2] identified three common styles of parenting behavior. Rather than independently examining the correlates of various dimensions, she instead looked simultaneously at how parents differed on multiple dimensions to classify parents into various parenting styles. Because her work has become so central to studies of socialization in the family context, and because many researchers are familiar with it only through secondary sources, her work will be briefly reviewed here.

In Baumrind's first study of parenting styles,[2] she identified three groups of preschool children who showed very different patterns of behavior: (1) Assertive, self-reliant, self-controlled, buoyant, and affiliative ($n = 13$); (2) discontented, withdrawn, and distrustful ($n = 11$); and (3) little self-control or self-reliance, and retreat from novelty ($n = 8$). These children were selected out of a pool of 110 children, who had been rated by the preschool teacher and a psychologist; they were children who scored the highest or lowest on two of five dimensions and showed similar behavior in the classroom and in structured experimental tasks. On the basis of home observations, laboratory observations, and parent interviews, Baumrind identified three parenting styles associated with these three patterns of child behavior. The three parenting styles, as argued later by Maccoby and Martin,[4] corresponded to high and low values on the responsiveness (warmth) and demandingness (control) dimensions. The authoritative style (characterized by high levels of both responsiveness and demandingness) was associated with assertive, self-reliant child behavior; the authoritarian style (low responsiveness and high demandingness) was associated with discontented, withdrawn child behavior; and the permissive style (characterized by high responsiveness and low demandingness) was associated with child behavior characterized by low self-control and low self-reliance. Maccoby and Martin[4] also described a fourth parenting style that was low on both responsiveness and demandingness that they labeled the uninvolved style (a style very similar to the rejecting-neglecting style Baumrind identified in her third study; see below).

In the second study, Baumrind and Black studied a second sample of preschool children and examined the correlation between observer ratings of child behavior in preschool and parenting practices (based on both parent interviews and home observations).[44] The correlations were consistent with the findings of the first study, but only about 10% of the correlations were significant at the $p < 0.05$ level. In this study, parents were not classified into parenting styles; only parenting dimensions were used.

In Baumrind's third study, observers rated parents from 134 families on 50 ratings scales during home observations.[45] These ratings were reduced through cluster analysis to 15 parenting dimensions (data on 16 African-American families were excluded from this analysis because these families showed different patterns than the rest of the sample). On the basis of the prototypes of parenting styles identified in the first study, parents in 102 of these families were grouped into eight parenting styles. These included two authoritarian styles (not rejecting and rejecting), two authoritative styles (nonconforming and not nonconforming), two permissive styles (nonconforming and not nonconforming), and two additional styles—nonconforming (not permissive or authoritative) and rejecting-neglecting (not authoritative). Differences in child behavior as a function of parenting style were then examined separately for boys and girls. The findings were complex; in general, there was support for the conclusions of the first study, but there were many qualifications (*e.g.*, sex differences, interactions with nonconformity). These families (and some additional families) were followed up at ages 9 and 15 with similar results.

Since Baumrind conducted her groundbreaking research in the 1960s and 1970s, a large number of studies have investigated the relationship between the parenting styles that she identified and child outcomes.[4,5] In general, authoritative parenting has been associated with positive developmental outcomes (*e.g.*, emotional stability, adaptive patterns of coping, life satisfaction); authoritarian parenting has been associated with poor academic achievement and depressive symptoms; and permissive parenting has been associated with poor self-control, low self-esteem, and aggression. It should be noted that in many of these studies, the investigators did not assess parenting style, but instead looked at the correlates of parenting dimensions related to Baumrind's parenting styles.[46,47]

These findings appear to hold true across ethnicity and social class, with one exception—several studies of low-income African-American parents have not found negative effects associated with authoritarian parenting.[48,49] Baumrind, as noted above, did not include the 16 African-American families in her sample when defining her prototypes because they showed different patterns than the rest of her families. In fact, in her study, authoritarian African-American parents had girls who were the most assertive and independent.[50] Whether these findings reflect differences in the validity of parenting assessments across ethnic groups or reflect the differential effects of authoritarian parenting in low-income environments is an issue that has yet to be resolved.[51]

More Recent Cluster Analytic Studies

Because Baumrind based her parenting styles on the parenting styles associated with child behavior in only about a third of her sample of preschool children, it is possible that other parenting styles may exist. One way to uncover additional parenting styles is to examine the results of studies where parents were rated on various dimensions and cluster analysis was used to assign parents to various parenting clusters (or in this case, parenting styles). In such person-centered studies, cluster analysis identifies groups of parents who show similar patterns of scores across multiple parenting dimensions—*i.e.*, their profile across dimensions appears the same—see Power et al.[51] for a more detailed description.

Literature Review

To locate such studies, an extensive literature review was conducted of cluster analytic studies of parenting found in PsycINFO from 1900 to 2012. To ensure that relevant studies were not missed, a wide approach to the search was employed. The keywords were ''mother*, father*, or parent*'' and ''cluster''. To reduce the search results, the abstracts were restricted to quantitative studies

of preschool and school age children published in English in peer-reviewed journals.

The review yielded about 300 abstracts, but only eight cluster analytic studies of parenting were found that used at least one measure of parental warmth and control.[52–59] The studies were published from 1992 to 2010, used parent or adolescent reports of parenting, used eight different parenting questionnaires, and involved parents of children from 3 to 18 years of age. The sample sizes ranged from 116 to 7866. Investigators clustered parents on 2 to 18 dimensions and used one of two approaches to cluster analysis (Wards or K-Means). Numerous approaches were used to determine the number of clusters, and the studies were conducted in four countries: Finland, Germany, Scotland, and the United States.

Despite these differences, most studies yielded three or four parenting clusters (three studies yielded three clusters, four studies yielded four, and one yielded six). Clusters similar to the authoritative and authoritarian styles were identified in all eight studies, an indulgent/permissive cluster was identified in six, and an uninvolved cluster was identified in five. Only two studies yielded additional clusters that were not similar to Baumrind's styles. Shucksmith and colleagues, in an adolescent report study conducted in Scotland, yielded a cluster labeled ''problem parent–adolescent relationships.''[58] However, the main variable that defined this cluster was a self-report of family problem behaviors that was entered into the analysis—not a clear measure of parenting. The other exception involved a parent self-report study conducted in Finland.[56] In this study, six clusters were identified. However, these clusters were very similar to those found by Baumrind. The main difference was that the authoritative cluster was broken down into three clusters: One high, one medium, and one low on restrictiveness.

Given the similarity of these clusters to the parenting styles identified by Baumrind (and elaborated on by Maccoby and Martin), are these the four ''true'' parenting styles? As with a factor analysis, one problem with cluster analysis is that what comes out of the analysis is largely a function of what goes into it. Because most of these studies used only measures of warmth and control, it is not surprising that these four parenting clusters emerged (*i.e.*, high warmth–high control, high warmth–low control, low warmth–high control, and low warmth–low control). Two of the eight studies, however, clustered on a much wider range of parenting dimensions, providing a stronger test of the four parenting styles.

Mandara and Murray clustered on 18 variables in their study of the adolescent reports of 116 15-year-old African-American adolescents.[54] These variables included measures of warmth and control, but also measures of family achievement orientation, family recreation, family religious emphasis, family organization, family conflict, and ethnic socialization. Their results still yielded three clusters similar to the authoritative, authoritarian, and uninvolved styles (no permissive cluster was identified). Similarly, Power and colleagues, in a parent-report study of mothers of 3- to 6-year-olds in Japan and the United States, clustered on seven dimensions including measures of warmth, control, and structure.[57] Mothers from both cultures were included in the same analysis and five clusters were identified: Two were made up almost exclusively of mothers from the United States (authoritarian and authoritative clusters), one cluster had about two-thirds of the mothers from the United States (permissive), and two were made up almost exclusively of mothers from Japan (clusters very unlike Baumrind's styles—a highly permissive and a stricter, yet still inductive, parenting style). Together the results of these studies lead to two conclusions. First, in Western cultures, despite the wide range of dimensions used to classify parents, there is very little evidence to date to suggest that more parenting styles exist than those identified by Baumrind and elaborated on by Maccoby and Martin. Second, given the results of Power et al.,[57] the four parenting styles usually identified may be specific to Western cultures and more research needs to be conducted on parenting styles in non-Western cultures.

Discussion

Given the considerable research on parenting discussed above, both from the dimensional (variable-centered) and the parenting styles (person-centered) perspective, a reasonable question is ''Which approach is best?'' Like everything in psychology, ''it depends.''

Advantages of Variable-Centered Approaches

In the variable-centered approach, researchers examine the relations between scores on various parenting dimensions and measures of child outcomes. One can do this by examining one pair of variables at a time (bivariate correlations) or examining multiple parenting dimensions as simultaneous predictors of child outcomes (multiple regression). Such continuous parenting variables can be used as predictors in structural equations models (including those with latent variables) and in various approaches to longitudinal data analysis (including growth curve models). The advantages of the variable-centered approach are that this approach uses *all* of the existing data and it can examine the independent effects of each of the parenting dimensions.

Mandara points out several limitations of the variable-centered approach to studying parenting.[5] These are: (1) The predictions made by most parenting theories are person- not variable-centered; (2) the variable-centered approach ''assumes that the covariation of variables of interest is the same for every person or family'' (p. 131); and (3) ''the system parts (*i.e.*, dimensions) cannot be understood in isolation from the rest of the parts or the whole.'' (p. 131) In making a case for the person-centered approach to data analysis, he concludes that ''by isolating each element and then by looking at the linear relationships, the variable-centered approach does not sufficiently

account for the multidimensional and interactional nature of human behavior.'' (p. 131)

If the number of parenting dimensions is small, one can use variable-centered methods to address some of these concerns. For example, by examining statistical interactions, one can examine whether the effects of control are different at different levels of warmth. This addresses one of the main predictions derived from Baumrind's parenting style research—*i.e*., that high control paired with high warmth predicts better child development outcomes than high control paired with low warmth. The problem with examining statistical interactions, however, is that as the number of parenting dimensions increases, the power to detect significant effects decreases (because one has to examine higher order interactions such as three and four way interactions).

Advantages of Person-Centered Approaches

If multiple parenting dimensions are being examined, the person-centered approach is usually superior because it makes it possible to examine how unique combinations of parenting dimensions act together in predicting child outcomes. As Mandara argues, the ''case-centered approach focuses on the whole functioning of the system, not just the major dimensions or subsystems.''[5] (p. 131) One can conduct person-centered analyses using traditional approaches to cluster analysis or more complex procedures such as latent class analysis. If the investigator has specific predictions based on known parenting styles, the person-centered approach allows for theoretically guided tests of hypotheses about the correlates of parenting style, even with small samples. The use of person-centered styles also allows one to test with very large samples the seldom tested hypothesis of Darling and Steinberg that the effects of different parenting practices can vary as a function of the larger parenting style.[60] Physical punishment, for example, might have very different effects when used by authoritarian versus authoritative parents.

The major disadvantages of the person-centered approach involve trying to draw boundaries between groups (*i.e*., deciding how many clusters best describes the sample and determining who is assigned to which cluster, especially for individuals near cluster boundaries) and the lack of statistical power when the number of groups is large and the number of subjects in each group is small. Unfortunately, none of the cluster analytic studies located in this review compared the relative effectiveness of variable-centered and person-centered approaches in predicting child outcomes, so it is an open question about whether one approach or the other is superior for the study of parental influences on child development. It would be useful for future researchers to conduct studies where they compared the effectiveness of the two approaches and also determined how useful each was when using different sample sizes. This could be done in Monte Carlo studies as well. Undoubtedly, however, the effectiveness of variable-centered versus person-centered approaches likely depends upon the research question, the number of parenting dimensions assessed, and the sample size.

Conclusions

Despite over 40 years of research, the parenting styles identified by Baumrind[2] and elaborated on by Maccoby and Martin[4] still are the only parenting styles with a strong empirical basis—at least in Western cultures. Moreover, these parenting styles are based upon two parenting dimensions first identified over 70 years ago. Empirical work on these styles, however, is based entirely on self- or adolescent-reports of parenting; it is not clear how they will hold up to observational measures. Although we have made substantial progress in understanding the nature of parenting, a number of questions should be addressed in future research.

First, will the development of new theoretical approaches to parenting yield dimensions of parenting over and above those identified here—warmth, control, and structure—or are these the three primary dimensions of parenting? Considerable work has been done on this issue over a very long time, but the limited number of dimensions may be a function of the reliance on self-report measures. Clearly more studies with diverse methods need to be conducted.

Second, will the parenting styles identified by Baumrind[2] and elaborated on by Maccoby and Martin[4] be replicated in studies employing observational methods or will new parenting styles be found? Given the complexity and cross-cultural variation of parent behavior, it is likely that additional parenting styles will be found. However, the question is will these simply be variations on the three existing styles, or markedly different styles? This is an area where cross-cultural work would be particularly important. Do parenting dimensions and parenting styles vary across different socioeconomic, ethnic, and cultural groups and are there ''universal'' parenting dimensions that allow for easy cross-group comparisons?

A number of questions concern the interaction between many of the factors discussed above. For example, what are the effects of specific parenting practices on child development and how are the effects of individual practices moderated by general parenting styles?[60] Do these effects vary with the developmental level or temperament of the child? It seems likely that the effects of parenting practices would vary significantly at different age periods, but this is clearly an understudied issue.

Another important question concerns the directions of effects. Although parents clearly influence their children, children influence their parents as well.[61] What is the complex nature of influences between parents and children—*i.e*., how do children and parents influence each other throughout the socialization process? Without a clearer understanding of the nature of complex transactions between parents and their children,[62,63] our understanding of the socialization process is still very limited.

Finally, what are the implications of these findings for understanding the impact of parenting on children's obesity? Is it more useful to focus on parenting dimensions or on parenting styles? Do different parenting practices contribute to childhood obesity at different ages and how does the child's eating style impact this process? Are different parenting styles or practices more influential for picky eaters or for children who show little self-regulation of intake? How do the parenting styles of mothers and fathers interact in influencing risk, and are their particular parenting styles that increase or decrease obesity risk for children in different cultural settings? Researchers have just begun to explore the important questions in this area and much more work needs to be done.

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