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# Parenting Influences on Child Obesity-Related Behaviors: A Self-Determination Theory Perspective

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## Abstract

The relationships between parenting behaviors and child obesity-related behaviors have been extensively investigated through the use of different constructs such as parenting styles, domain-specific styles and specific parenting practices, but there is currently a need for a more comprehensive and integrative theoretical framework. This chapter argues about the usefulness of self-determination theory, and in particular of the specific dimensional parenting model related to the theory, as a framework to conceptually organize parenting practices relevant to children's obesity-related behaviors. The three parenting dimensions of autonomy support, provision of structure and parental positive involvement, identified by self-determination theory as particularly relevant to the process of child's internalization of socially desired behaviors and values, will be applied as a framework to conceptually organize the parenting practices in the feeding and physical activity domains.

**Keywords:** child obesity, parenting styles, feeding practices, food parenting practices, physical activity parenting practices, self-determination theory, autonomy support, provision of structure, parental positive involvement

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## 1. Introduction

Childhood obesity, viewed from a systemic and ecological standpoint, could be regarded as a complex and dynamical clinical condition based on a dysfunctional pattern of ineffective regulation of eating behavior coupled with diminished physical activity and increased sedentary time, which develops within a specific physical and social environment often characterized by the presence of obesogenic elements [1, 2]. Child overweight and obesity, in turn, are likely to produce social and psychological consequences [3–6] that could further reinforce

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and perpetuate the aforementioned dysfunctional pattern. Parents, as the primary socializing agents of children's eating and physical activity-related behaviors, are crucially—although not exclusively—responsible for preventing and contrasting the onset of this condition.

The crucial role played by parenting influences in either favoring or discouraging child obesity-related behaviors and ultimately childhood obesity seems conceptually clear, empirically well-supported and generally shared within the scientific community. Nevertheless, research findings on the relationship between child overweight or obesity and single constructs such as parenting styles, feeding styles or specific parenting practices are generally weak and sometimes mixed or inconsistent [7, 8]. Indeed, many different factors intertwined in a complex causal network contribute to childhood obesity, among those factors, parenting behavior is likely to play an equally complex and multifaceted role.

Therefore, there seems to be a need for a more articulated theoretical framework to organize the parenting constructs relevant to child obesity-related behaviors and to guide future investigations. A particularly useful theoretical framework can be found in self-determination theory [9], a general theory of human motivation which addresses parenting influences on child social development by providing a socialization model based on children's autonomous internalization of socially prescribed/endorsed behaviors and values, with a focus on the specific parenting behaviors suitable for facilitating versus hindering such process of internalization. The aim of this chapter is to argue about the usefulness of self-determination theory as a theoretical framework for conceptualizing the role of parenting in influencing child obesity-related behaviors. To this scope, first, an overview of parenting constructs used in the study of parenting influences on child obesity-related behaviors is provided; then, a brief outline of self-determination theory's basic tenets and of the related parenting model is presented; finally, the self-determination theory-based parenting model is used as a framework for conceptually organizing the parenting practices in the feeding and physical activity domains.

## **2. Parenting constructs in the study of child obesity-related behaviors: parenting styles, domain-specific styles and parenting practices**

The construct of parenting styles [10] has been widely used as a theoretical framework to investigate the relationship between parenting and child overweight/obesity or child obesity-related behaviors.

In particular, the typology originally developed by Baumrind [11] and refined by Maccoby and Martin [12], based on the two dimensions of parental responsiveness and parental demandingness, has been extensively adopted in a conspicuous number of studies.

In the model proposed by Maccoby and Martin [12], parental *responsiveness* is defined as the degree of warmth, acceptance and involvement displayed by the parent toward the child; on the other hand, parental *demandingness* is defined as the degree of maturity demands, control and supervision used by the parent in socializing the child. These two dimensions are

combined in order to obtain a fourfold typology of parenting styles. The *authoritative style* is typical of parents who show both high demandingness and high responsiveness toward their child; this style is characterized by parental positive involvement, nurturance, use of reasoning and provision of negotiable rules. The *indulgent style* is typical of parents who show high responsiveness but low demandingness; this style is characterized by warmth and acceptance toward the child, together with a lack of maturity demands and control of the child's behavior. On the contrary, the *authoritarian style* is typical of parents who show low responsiveness but high demandingness; such a style is characterized by rejecting attitude toward the child, coupled with directive, restrictive and punitive behaviors. Finally, the *uninvolved style* is typical of parents who show both low responsiveness and low demandingness, and is characterized by little affection and involvement with the child, as well as by little efforts to control the child's behavior. The conceptual relevance of such parenting style typology for the study of parental influences on child obesity-related behaviors is based on the analogy with other child behaviors that typically need to be socialized by parents such as good manners, school homework, household chores, prosocial behaviors, responsible conduct, and so on. The guiding hypothesis is that the same relationship between different parenting styles and child outcomes regarding the socialization of the aforementioned behaviors may hold true also for children's obesity-related eating and physical activity behaviors. Research results [13–16] on the relationship between parenting styles and child obesity-related behaviors indicate that an authoritative parenting style tends to be linked to a healthier child's eating behavior, and to a physically active lifestyle, and therefore can be viewed as protective against obesity, while indulgent and uninvolved parenting styles are associated with a higher risk of obesity.

Alternatively, the parenting style typology proposed by Parker [17, 18] and based on the notion of parental bonding has also been adopted in studies on adolescent overweight/obesity [19, 20]. Parker's typology is widely used in the broader field of studies investigating parenting influences on eating disorders [21, 22] and on psychopathology in general [23], in which the supportive and emotional aspects of parenting are thought to play a more prominent role than the socializing ones. In fact, unlike Maccoby and Martin's typology, which is mainly focused on the parent as a socializing agent, Parker's typology hinges on the construct of parental bonding, conceptualized as the parental contribution to the parent-child relationship, and defined by the two dimensions of parental *care* and parental *overprotection*. Parental care refers to the amount of material and emotional support, acceptance and positive affection provided to the child by the parent; on the other hand, parental overprotection refers to the amount of parental intrusive, controlling behaviors and limitations on the child's physical and psychological autonomy. By combining the two aforementioned dimensions, a fourfold typology has been created: high levels of care coupled with low levels of overprotection delineate an *optimal parenting* style; high levels of care and high levels of overprotection outline a style defined as *affectionate constraint*; on the other hand, low levels of care and high levels of overprotection outline a style defined as *affectionless control*; finally, low levels of care and protectiveness delineate a *neglectful parenting* style. Parental bonding style in eating disorders appears to be generally characterized by low levels of care and high levels of overprotection [21, 22], and a similar association has been found in studies on youth overweight/obesity [19, 20].

Besides, along the lines of general parenting styles, a more specific construct of *feeding styles* has been developed [24], which to some extent can be considered as an adaptation of the Maccoby and Martin typology of parenting styles [12] to the particularity of the feeding domain. To that scope, the same dimensions of parental responsiveness and demandingness have been adapted to fit the specificity of the feeding context. In particular, demandingness has been redefined in terms of how much parents prompt their children to eat, whereas responsiveness has been redefined in terms of the forceful and parent-centered versus sensitive and child-centered way in which such encouragement to eat is provided. Research results [8, 14, 25] suggest that, similar to general parenting styles, an authoritative feeding style plays a protective role against obesity, while an indulgent style is associated to a higher risk of obesity.

Finally, the most widely adopted construct in the study of parental influences on child obesity-related behaviors is that of specific *parenting practices*. Located at a lower level of abstraction as compared to general parenting styles and domain-specific parenting styles, the construct of parenting practices denotes the more specific and goal-directed behaviors used by parents to directly influence their children's behaviors.

Regarding parenting influences on child's eating behavior, the role of *feeding practices*, alternatively known as *food parenting practices*, has been extensively investigated. This construct comprises the concrete strategies adopted by parents to regulate their child's eating behavior and weight, for instance, by increasing or decreasing the intake of certain foods.

Research has especially concentrated on two opposite and complementary feeding practices: *pressure to eat* and *restriction* of food consumption [26, 27]. Pressure to eat refers to parents' demands and insistence that the child eats more food, or a greater amount of healthy foods such as fruits and vegetables, and involves the use of strategies like demanding that the child cleans the plate, prompting the child to eat even in the absence of hunger, or even physically struggling with the child to force him/her to eat. On the other hand, food restriction typically denotes parental efforts to limit the child's consumption of foods, especially energy-dense palatable foods, by restricting the child's access to or by otherwise reducing the opportunities to consume such foods. The practice of restriction is typically thought to be carried out by the parent in a self-centered way, and through the use of an overtly authoritarian type of control.

However, besides pressure to eat and food restriction, a list of common specific feeding practices investigated in studies on child obesity-related eating behaviors could include rewarding the consumption of healthy food with desired objects and activities, rewarding positive behaviors with palatable food, directly modeling healthy or unhealthy eating behaviors in front of the child, as well as making certain types of food more or less easily available and accessible at home. Such a list, far from being exhaustive, is suffice to demonstrate the remarkable variety and conceptual heterogeneity existing among feeding practices. Consequently, there have been several attempts to classify and to cluster singular feeding practices into broader functionally homogeneous constructs or categories.

For instance, a very general categorization of feeding practices is based on the distinction between *responsive* and *nonresponsive* feeding practices [28]. Responsive feeding practices are those characterized by the parent's recognition of and respect for the child's cues of hunger

and satiety. On the contrary, nonresponsive feeding practices are characterized by a lack of reciprocity between the parent and child; this can take the shape of an excessive parental control of the feeding situation (especially by pressuring or restricting food consumption); alternatively, it can take the shape of an almost complete control of the feeding situation by the child. Such categorization closely matches the concepts of authoritative, authoritarian and indulgent styles presented in parenting styles and feeding styles typologies.

Another general categorization is based on the distinction between *controlling* feeding practices [29] and *instrumental* feeding practices. Controlling feeding practices are defined as those in which all the decisions regarding the kind, the quantity, the time and other aspects of child food consumption are seen to reflect unilateral choices made by the parent. Feeding practices like parental pressure to eat and food restriction are considered part of this category. On the other hand, instrumental feeding practices are defined as those parenting practices aimed at regulating either the behaviors or the emotions of the child by using food as a reward.

Recently, there have been efforts to map food parenting practices more systematically [30, 31]. In a recent contribution, Vaughn and colleagues [32] proposed a very articulated model, clustering several feeding practices into three general constructs named *Coercive control, structure, and autonomy promotion/support*. These constructs, as it will become evident later, recall and partially make reference to analogous parenting dimensions underlined by self-determination theory. The first construct, Coercive control, has been defined by the authors as characterized by parent-centered goals, parental dominance and determination to impose their will upon the child in the feeding domain. Coercive control comprises practices such as food restriction, pressure to eat, threats and bribes and using food to control negative emotions. On the other hand, structure has been defined as a type of parental control that involves the use of noncoercive parenting practices, aimed at fostering the child's competence in the feeding domain. Structure includes practices such as rules and limits setting about what and how much the child should eat, offering to the child limited or guided choice relative to food preferences, monitoring of the child's eating behavior and consumption of food, parental modeling of healthy eating behaviors, adequate availability and accessibility of healthy food at home; furthermore, a category named "unstructured practices" has also been considered part of the construct. Finally, the construct of autonomy promotion/support has been defined in terms of facilitating the child's independence around food and promoting the child's capacity to self-regulate and to autonomously conform to parental-endorsed norms relative to food consumption in the absence of the parent. Autonomy promotion comprises food parenting practices such as nutrition education, child involvement in food purchase and preparation, encouraging the child to consume healthy food, praising the child for healthy eating behavior, the use of reasoning to convince the child to adopt healthy eating habits and, finally, negotiation between parent and child about the amount and the kind of food to be consumed.

Regarding parenting influences on child physical activity and sedentary behavior, the role of several parenting practices such as encouraging the child to engage in physical activity and directly modeling an active lifestyle has been investigated in several studies [33–35].

A model for conceptually organizing parenting practices relative to the physical activity domain, partially overlapping to that presented by Vaughn et al. [32] in the feeding domain,

has been recently proposed by Mâsse et al. [36]. The model clusters physical activity-related parenting practices into three general constructs named *control/neglect*, *structure* and *autonomy support*. Control/neglect is conceived as a bipolar construct: it refers, on the one hand, to coercive parental attempts aimed at pushing or pressuring the child to engage in physical activity without any consideration for the child's interests and attitudes; on the other hand, it refers to an opposite parental attitude in which the parent neglects to structure the child's participation in physical activity and allows the child to reject physical activity and to indulge in sedentary behavior. The construct of autonomy support is defined in terms of attunement and sensitivity to the child's requests in order to foster the child's individuality and self-assertion. Autonomy support comprises practices such as encouraging the child to be physically active, especially by virtue of reasoning, guided choice of physical activities by providing different options and allowing negotiation, parent's involvement in the child's physical activity, by watching or otherwise showing interest; and praise and rewards to the child for being physically active. The construct of structure is described in terms of parental efforts to organize the child's environment in order to promote desired childrearing outcomes. Structure is seen as encompassing practices such as communicating clear expectations about the amount of physical activity that the child should engage in, facilitating the child's physical activity by providing occasions and material resources; monitoring the child's actual engagement in physical activity and directly modeling an active lifestyle in front of the child.

### **3. Self-determination theory as a framework for conceptualizing parenting influences on child obesity-related behaviors**

A basic, although often implicit, conceptual premise common to most studies investigating parenting influences on child obesity-related behaviors is that children need to be motivated by their parents to engage in healthy eating and physical activity-related behaviors and to avoid unhealthy ones. Such implicit relevance of motivational processes seems to render self-determination theory particularly suitable as a framework for conceptualizing the role of parents in effectively motivating their children to establish healthy habits.

In fact, self-determination theory [9, 37] can be regarded as a general theory of human motivation that pivots upon the dichotomy between self-determined, volitional behaviors versus externally coerced or internally pressured behaviors. Another fundamental distinction made by the theory is that between intrinsically and extrinsically motivated behaviors. Intrinsically motivated behaviors are those which the person performs by their own sake, that is, for the interest, pleasure or satisfaction they provide; and as such they represent fully self-determined behaviors. On the other hand, extrinsically motivated behaviors are defined as those behaviors that are performed because they are perceived as instrumental to some separable consequence. Typically, the behaviors performed in order to conform to social norms (i.e., adopting a healthy pattern of eating and physical activity behavior) are extrinsically motivated. This does not mean that such behaviors must always be necessarily perceived by the person as coerced or pressured. According to self-determination theory, even such behaviors can become self-determined, by virtue of what is defined as a process of internalization.

Internalization is conceptualized as proactive process, consisting of the progressive transformation of behaviors regulated by external contingencies (i.e., material rewards and punishments, praises and reproaches, etc.) into behavior regulated by internal processes (i.e., inherent interest or congruence with the person's values). The process of internalization is seen as fostered by the inherent motivation to integrate within the self externally regulated behaviors as long as they are perceived by the person as useful for an effective functioning in the social world.

Furthermore, according to self-determination theory, the process of internalization is facilitated by the fulfillment of three basic psychological needs: the need for autonomy, broadly defined in terms of perceiving to be the origin of one's own behaviors; the need for competence, broadly defined in terms of mastery over one's own environment and the need for relatedness, broadly defined in terms of experiencing an adequate amount of interpersonal contact, warmth and affection.

Therefore, to view parenting influences on children's obesity-related behaviors through the lenses of self-determination theory means to emphasize the role of parenting in promoting versus undermining children's self-regulation and internalization of healthy norms and behaviors in the feeding and physical activity domains. Self-determination theory offers a detailed conceptualization of such process of behavioral self-regulation and internalization of social norms and, furthermore, can provide a comprehensive model of the parenting behaviors that can facilitate the achievement of this objective and those that are likely to hinder it.

#### **4. Parenting dimensions relevant to the child's internalization process in the light of self-determination theory**

Conceptually developed along the lines of self-determination theory is a tripartite dimensional model of parenting [38, 39], based on the parenting dimensions of *autonomy support*, *provision of structure* and *parental involvement*. These parenting dimensions are supposed to be strongly connected to the three basic human psychological needs for autonomy, competence and relatedness, which are seen to facilitate the autonomous, integrated internalization of social norms and values by the child.

*Autonomy support* is characterized by the parents' transmission of social norms and demands to the child in ways that recognize the child's perspective and point of view, allows the child the possibility of making choices, encourage the child's participation in decisions and foster the child's initiative and independent problem solving. An autonomy supportive parenting style is thought to promote the child's internalization of behaviors and values by fostering his/her sense of autonomy. On the contrary, a *coercive* parenting style is characterized by the unilateral consideration of the parent's perspective, and by parental attempts to motivate their child's behaviors through the use of controlling threats and rewards, punitive disciplinary techniques, and/or various types of psychological pressure such as guilt induction or love withdrawal. Such a coercive style is thought to undermine the child's experience of



him/herself as an autonomous agent, and consequently, to hinder the child's autonomous internalization of parental norms and values.

*Provision of structure* conceptualized in terms of the parents' provision of clear and consistent guidelines, expectations and rules for the child's behaviors, in combination with clear feedback and consistent follow-through on contingencies. This condition is seen to facilitate the child's sense of competence in pursuing socially desired norms and behaviors. In particular, Farkas and Grolnick [40] identified several components of an adequate provision of structure, with specific reference to the school/academic domain. These components consist of the provision of (1) clear and consistent rules, guidelines and expectations relative to child's academic life; (2) opportunities to meet parental expectations; (3) predictability of consequences; (4) informational feedback on the child's performance; (5) provision of rationales for parental rules and requests and finally (5) parent's willingness to exert an adequate level of parental authority to enforce rules.

Finally, *parental positive involvement* is a construct which encompasses parental warmth and affection, but can be better conceptualized as the parent's degree of positive attention and dedication to the child and to foster its optimal development [41]. Positive involvement is reflected in parents who show interest in, are knowledgeable about, and take an active part in the child's life. Through those behaviors, positively involved parents are seen to provide emotional and as well as concrete resources to foster a sense of confidence and self-direction in the child. In this respect, positive involvement can be regarded as similar to the dimension of parental care in Parker's conceptualization of parental bonding and related parenting style typology [17, 18]. Furthermore, by satisfying the child's fundamental need for relatedness, positive involvement is hypothesized to facilitate the child's identification and autonomous internalization of social requests and values promoted by parents. It is important to note that, besides lack of involvement, inadequate forms of parental involvement have also been identified [42–45], and that such forms of involvement are likely to undermine the child's autonomous internalization of parental norms.

Finally, a fundamental point to underscore is that, according to self-determination theory, autonomy support and provision of structure are conceived as virtually independent parenting dimensions. Consequently, parents may provide an adequate structure either in an autonomy supportive or in a coercive and controlling way [40]. On the contrary, parental involvement seems to represent, at least in part, a precondition of both autonomy support and provision of adequate structure. In fact, autonomy supportive parenting behaviors (such as recognition of the child's perspective, providing options and allowing negotiation) are likely to require a greater amount of material, temporal and psychological resources than their coercive counterparts such as threats and bribes or psychological pressure. Similar considerations can be done regarding the resources necessary for an adequate provision of structure as compared to unstructured parenting behaviors (i.e., lack of consistent rule setting and follow-through, lack of monitoring).

## **5. Autonomy support versus coercion in the feeding and physical activity domains**

According to a self-determination theory perspective, parental autonomy support is crucial to promote children's self-regulation and autonomous, integrated motivation in engaging in not

intrinsically motivated healthy behaviors (such as consumption of fruit and other nutrient foods or engaging in some kind of physical activity) as well as in the determination to avoid unhealthy, obesity-inducing habits (such as junk food consumption and prolonged sedentary behavior).

Several feeding practices associated with child's healthy eating and physical activity behavior can be interpreted as autonomy supportive techniques through which parents can better promote the child's autonomous internalization of healthy norms regarding eating behavior and physical activity. For example, feeding practices such as allowing the child to choose among several healthy foods for a snack, or discussing and negotiating with the child food choices and preferences, could easily be located within the parenting dimension of autonomy support, as defined by self-determination theory.

The polar opposite of an autonomy supportive parenting is represented by coercive or controlling parenting, in which parents' efforts to socialize their children are based on external or internalized forms of coercion. Accordingly, in the specific feeding and physical activity domains, autonomy supportive feeding practices can be contrasted with *coercive or controlling parenting practices* such as parental pressure to eat healthy food and pressure to practice physical activity as well as forceful restriction of unhealthy food or forceful restriction of screen media use.

## **6. Provision of adequate structure versus lacking or inadequate structure in the feeding and physical activity domains**

From a self-determination theory standpoint, parental provision of structure in the feeding and physical activity domains is crucial to promote children's competence in self-regulating eating and physical activity-related behaviors, in conforming to parental norms and engaging in healthy habits. This, in turn, represents a facilitating condition for the child's development of an integrated, autonomous motivation to adopt healthy and to avoid obesity-related eating and physical activity behavior.

The importance of parental provision of structure has been increasingly acknowledged as a pivotal construct especially in the literature on feeding practices [30–32]. Anyway, in such literature, the concept of structure appears to be not fully recognized as a bipolar construct, not clearly contrasting adequate with inadequate provision of structure. Instead, it seems more useful to view parental structure both in the feeding domain and in the physical activity domain as a bipolar construct characterized by effective versus lacking or ineffective practices through which such structure is provided.

The same components identified by Farkas and Grolnick [40], applied to the feeding and physical activity domains, may represent a useful template to organize different food parenting practice and physical activity parenting practices explored in the literature in a meaningful conceptual pattern, distinguishing those practices that contribute to an adequate provision of structure from those which represent a lacking or inadequate structure.

In the feeding domain, parental provision of clear and consistent rules about the kind and the quantity of foods that that child is allowed to eat represents an obvious instance of adequate provision of structure; but also feeding practices such as the use explicit didactic techniques to

encourage consumption of healthy foods or the direct modeling of healthy eating behavior by the parents should be assigned to this parenting dimension. Correspondingly, in the physical activity domain, clear and consistent rules and expectations about physical activity, and the use of television and other screen media, including limitations regarding their accessibility, can be regarded as prototypical instances of adequate provision of structure.

On the contrary, absent or inconsistent rules about food consumption and screen media use, the modeling of unhealthy eating and sedentary behavior and the availability and accessibility of unhealthy food and screen media in the house represent instances of inadequate parental structure in the feeding and physical activity domains.

## **7. Positive involvement versus lacking or inadequate involvement in the feeding and physical activity domains**

The last parenting dimension underlined by self-determination theory authors, parental positive involvement (versus lacking or inadequate involvement), appears to be the least considered and explored in studies investigating parental influences on child obesity-related behaviors. Instead, parental positive involvement, both in general and in the specific feeding and physical activity domains, can be viewed as the most fundamental prerequisite of a health-promoting and obesity-protecting parenting style. In fact, positive involvement can be regarded as a precondition both for an effective autonomy supportive style and for an effective provision of structure suitable for facilitating autonomous self-regulation and the internalization of norms relative to healthy eating and physical activity-related habits in children.

In this regard, feeding practices such as eating meals together as a family as well as asking the child to help in preparing food or engaging the child in food purchasing and in selecting healthy foods can be regarded as typical instances of parental positive involvement in the feeding domain. Similarly, parenting practices such as showing interest for the child's physical activity, providing practical and emotional support and co-participating can be regarded as prototypical manifestations of parental positive involvement in the physical activity domain.

Besides, some of the parenting practices contributing to promote child's healthy eating behavior, such as availability of healthy foods, usually placed in the parenting dimension of structure [30–32], could better be reframed in terms of parental positive involvement in the feeding domain. Similar considerations can be made regarding parental provision of opportunities and material resources to the child to engage in some kind of sport or physical activity [36]. The aforementioned practices, in the light of self-determination theory, are clearly suitable to convey to the child the parent's interest and positive involvement, thus fostering the child's sense of relatedness and facilitating the autonomous internalization of the healthy habits endorsed by the parents.

On the contrary, parental lack of positive involvement in the feeding and physical activity domains can be characterized in terms of the absence of the aforementioned parenting practices and resources. Besides, even specific negative parenting practices such as parents' use of unhealthy food (i.e., sweets) or allowance of prolonged screen media time to regulate children's

negative emotions could be interpreted as a lack of positive involvement, in the form of a negative, rejecting-neglectful parenting, in that parents resort to tasty food or screen media time to compensate for the lack of emotional support and emotional coaching to the child.

Lack of involvement or inadequate involvement can undermine parental efforts to transmit healthy dietary and physical activity-related norms and behaviors to the child even in the presence of a sufficient autonomy supportive parenting style and of an adequate provision of structure.

## **8. Conclusion(s)**

Many efforts have been dedicated to develop comprehensive models of parenting influences on child obesity-related behaviors. Self-determination theory can provide a conceptual framework specifically designed to account for the motivational processes implicated in the child's internalization of healthy behaviors and values in the feeding and physical activity domains. Furthermore, it can provide a parenting model especially suitable for conceptualizing parenting influences on children's obesity-related behaviors in the feeding and physical activity domains, and for organizing several food parenting practices and physical activity parenting practices in a powerful and comprehensive conceptual structure. From a self-determination theory perspective, an optimal parenting style in a specific domain is characterized by the simultaneous presence of autonomy support, adequate provision of structure and positive parental involvement. Similarly, optimal parenting practices in the feeding and physical activity domains can be described as those which convey autonomy support, adequate structure and positive involvement, fostering the child's autonomous internalization of healthy eating and physical activity behaviors. The focus on the parenting dimension of positive involvement versus absent or inadequate involvement provided by self-determination theory appears to be especially meaningful since the crucial role of such parenting dimension appears to be rarely considered in contemporary models of food and physical activity-related parenting practices.

## **Conflict of interest**

The authors declare no conflicts of interest.

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