IDENTITY DEVELOPMENT, PARENTING STYLES, BODY UNEASINESS, AND DISGUST TOWARD FOOD. A PERSPECTIVE OF INTEGRATION AND RESEARCH

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Abstract

Objective: International literature has shown that a child's relational experiences from infancy to adolescence are crucial for the formation of personal and social identity. The representations and patterns of self and others might be risk factors for the dysfunctional perception of one's body, above all during adolescence. Likewise, certain defective parenting styles may prove crucial in the etiology of eating disorders. In particular, rejection and disgust for food may sometimes represent the negative product of early dysfunctional experiences.

The present paper investigates the relationship between identity development, parenting styles, perception of body image and refusal of specific foods in a group of adolescents and young adults.

Method: The group of participants consists of 100 subjects, aged 18 to 32 (M = 21.56, SD = 2.67), of which 71 girls and 29 boys, who were recruited among university students in Sicily. Participants completed the following instruments: the Ego Identity Process Questionnaire, the Parental Bonding Instrument, the Body Uneasiness Test, and an ad hoc questionnaire to identify the food which individuals feel more disgust, and the family experiences associated with that specific food.

Results and conclusions: Data show the predictive role of parenting styles on identity development. Furthermore, identity commitment seems to predict the perception of body image. The hypothesis about the influence of parental control, especially the paternal one, on the intensity of food-specific disgust has also been confirmed.

Results confirm the importance of relation between personal identity and family, the latter considered to be a predictor of personal and social development, not just a precursor of a high level of self-esteem, but also an expression of new tastes and food preferences.

Key words: identity, parenting, body uneasiness, disgust

Declaration of interest: the authors declare that the present research has not had commercial or financial relationships that could be represented as a potential conflict of interest

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Introduction

Research on behavioral mediators of family patterns indicate that parents' eating habits and their parenting practices influence the development of children's eating behaviors. Parents shape the eating behavior development, not only by the food they make accessible to children, but also by their own eating styles, behavior at mealtimes and child feeding practices (Pellerone et al. 2016a, Pellerone et al. 2017d, Scaglioni et al. 2008). Parents play a pivotal role in the development of their child's food preferences and energy intake; they represent the basic environment in which children live, grow up and develop, so they watch and imitate adults, in order to learn the proper behavior for everything, including the food habits, which are acquired in childhood and continue into adulthood (Meals 2012, Patrick et al. 2005, Pellerone et al 2017a, Wardle et al. 2005).

There are many variables within the family setting that can affect children's eating behavior and, ultimately, their weight (Iacolino et al. 2016, Pellerone et al. 2017b, Pellerone et al. 2017c). Research indicates that certain child feeding practices, such as exerting excessive control over what and how much children eat, may contribute to children being overweight (Birch et al. 2001). In particular, Nicklas and colleagues (2001) refer that common food-related parenting styles correlate to shape or guide a child's behavior.

Therefore, the acquisition processes of food repertoires are realized through primary and secondary social interaction, such as parents and peer-groups, but also through personal experience, such as identity development; in fact, food can be considered as a central element to our sense of identity, because any given human individual is constructed, biologically, psychologically and socially by the foods one has chosen to incorporate (Fisher et al. 2002, Magnano et al. 2014). Furthermore, the way any given human group eats, helps it assert its diversity, hierarchy and organization, but also, at the same time, both the oneness and otherness of whoever eats differently.

Paul Rozin (Rozin 1976), analyzing and interrelating the processes of food identification and the construction of the eater's identity, provides the most up-to-date comprehensive approach to human food selection, in which food is a key element in the construction of

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identity. On the one hand, because of a need of variety, man is inclined towards diversification, innovation, exploration and change, which can be vital to his survival; but, on the other hand, man has to be careful, mistrustful, and conservative in his eating, because any new, unknown food could be a potential danger to personal identity (Paolillo et al. 2015). This conflict, named as the "omnivore's paradox", represents the oscillation between the two opposite poles of neophobia (prudence, fear of the unknown, resistance to change) and neophilia (the tendency to explore, the need for change, novelty, variety). There is perhaps a fundamental anxiety in an individual's relationship to food, resulting not only from the need to distrust new or unknown foods, but also, and more importantly, from the tension between the two contradictory and equally constraining imperatives of the omnivore's double bind (Garcia et al. 1966, Rozin 1976).

In the psychology of eating behavior, the term "neophobia" is used to define a young child's tendency to accept only a limited range of familiar foods and to refuse or manifest disgust toward foods which lie outside it, whether they be unknown, unusual, ill-identified or simply mixed with others; in this circumstance, the disgust represents a socially re-constructed biological safeguard. Furthermore, literature demonstrates that children's neophobic behavior follows a phase of exploratory behavior less prudent than adult' ones, during which the repertoire of familiar foods (those which subsequently escape neophobia) is established (Duncker 1938). In particular, neophobia seems to appear only after the age of two and then declines very slowly after the age of five or sometimes much later (Fischler 1988, Fischler and Chiva 1986). This gradual decline seems to occur under the influence of social factors such as education, although the most important influence seems to be that of the peer group (Birch 1980, Trotta et al. 2013), and under the role of individual factors such as identity development, above all in adolescence (Pellerone et al. 2015).

The theoretical framework of the present study is: the analysis of the relationship between identity development according to the psychosocial approach of Marcia's Model; parenting styles in accordance to Baumrind's Model; body image perception according to the Model of Cuzzolaro and colleagues; and refusal of food in a group of adolescents and young adults.

The cross-sectional study that we report can be considered as a picture of the group of people examined, in order to formulate research hypotheses, adding to some major studies on relationships between personal identity and family, which are considered an important context for personal and social development, not just a safe nest and precursor of good self-esteem, but also an expression of new tastes and preferences. In fact, only a few studies have examined the relationship between parenting, identity development and eating problems, and have found indications of such a relationship (Pellerone et al. 2016b, Lucas 2010); although the presence of these relationships within male groups has not been investigated in the international literature.

In fact, previous researches with parental factors and eating disorders do not address a comprehensive model that misures parenting styles and ego development in young adults, although these researches demonstrates that: adolescents and young adults at risk for developing an eating disorder would report experiencing their parents style as high in control and low in warmth, or low in control and high in warmth; parents will report a higher incidence of personal eating disordered behaviors and attitudes; and the adolescent's level of ego development will mediate the impact of these parental factors (Lucas 2010).

This result underlines the role of identity as an important focus in the creation of positive development programs aimed at fostering positive adjustment and optimal functioning.

Identity development and body satisfaction

The acquisition of behavioral food patterns seems to be more complex during adolescence, until it stabilizes in adulthood. In fact, adolescence can be considered as a phase of suspension, in which identity strategies are challenged, and infantile identifications become identity; adolescents construct *imaginary representations* of themselves, which are not directly accessible to the conscience (Guichard and Huteau 2001, Santisi et al. 2014, Wigfield and Wagner 2005). In fact, according to Marcia's Model (1991), adolescents come to develop an autonomous and integrated self through identity commitment, with which they make choices on material issues, and identity exploration of alternatives in relation to objectives, beliefs and convictions (Wigfield and Wagner 2005, Laghi 2009, Ramaci et al. 2017). Adolescence is a phase that encourages the development of identity because of the wide variety of experiences available to adolescents; this phase stimulates questioning of identity issues and personal growth, above all relating to body image.

In fact, literature underline the relation between self-identity, deep body dissatisfaction, and altered body personal experience, above all during adolescence (Petta et al. 2016, Platania et al. 2015). For example, in a longitudinal study, Gilbert and Meyer (2005) show that low self-esteem predicted an increase in body dissatisfaction among young women. Likewise, Abell and Richards (1996) found that a decrease in self-esteem contributes to a poorer body image; self-esteem, simply stated, is a judgment that shows how a person values him/herself. In another study on self-esteem and body image, Huang and colleagues (2007) demonstrate that adolescents showed an improvement in body image when they experienced weight loss or weight maintenance as compared to those who had experienced weight gain during the study, showing a link between body image and self-esteem. According to Dittmar and colleagues (2007), body image has a major influence on adolescents' self-esteem, and they manifest more importance on their appearance than adults and report higher levels of dissatisfaction, implying that appearance is a highly significant aspect of adolescent identity. Similarly, Herzog and colleagues (1984) found a higher weight preoccupation in adolescents who had not yet committed to an identity than for those who had.

According to Marcia's Model, it is possible identify four identity statuses that correspond to as many modalities for facing events and, especially for representing and managing the personal body image, in particular: in the *achievement status*, an adolescents or young adult makes an identity choice after investigating the possible alternatives through experimentation; it is characterized by a positive self- body-image, flexibility, openness and social participation (Laghi et al. 2011). The *moratorium status* is characterized by tension and reflection on the different solutions, although a choice has not yet been made; so, the moratorium status is typical of individuals who present greater uncertainty, fears for the future, limited flexibility, reduced cooperation and competition and negative self-body-image (Cawood and Huprich 2011, Herzog et al. 1984). The *foreclosure status* is typical of those adolescents that cling uncritically to

the first identificatory models without experimenting with alternative ones; the *foreclosure status* is a stage characterized by conventionality, rigidity, low self-esteem, lack of autonomy, conflictual relationships and authoritarianism. Finally, the *diffusion status* is typical of those who effect superficial experimentations, without reflections and therefore not aiming at a future commitment; this status is typical of those who manifest greater cognitive complexity but poor self-respect, and low body dissatisfaction, showing higher levels of disordered eating than those who are in the foreclosed or achieved identity statuses (Crocetti et al. 2017, Pellerone 2015, Pojaghi 2008).

Data support previous findings of Cash and Deagle (1997) that body dissatisfaction is one of the best predictors of eating disorders and that self-esteem is associated with this variable (Fisher et al. 1994), because, among adolescents, the weight and/or body influence how they felt about themselves (Kamps and Berman 2011).

Development of eating behaviors among adolescents and young adults

The psychosocial approach to the study of eating behaviors shows that individual food repertoire is learned through exposure: its familiarity explains much of the variance in preferences (Birch 1980). Repeated experience with a food increases the perception of its acceptability and consumption (Domel et al. 1993, Wardle et al. 2003). Furthermore, these behaviors are often the result of associations between food and a specific situation, named *conditioned taste aversion*, which can be considered as a form of associative conditioning, for which a taste becomes unpleasant after being associated with the ingestion of a substance that evokes nausea or has caused physical illness (Garb and Stunkard 1974).

The acquisition processes of food repertoires are realized through personal experience but also, through social interaction; for example, several experiments have found a positive correlation between the number of people present at the table and the amount of ingested food (Castro and Brewer 1992, Clendenen et al. 1994).

Even modeling can be considered a particular type of social facilitation, selectively oriented towards specific foods, so the individual food behavior is socially facilitated only when the food which is on the plate is qualitatively similar to food on the model's plate (Addessi et al. 2005).

Research on eating behaviour has identified four major predictive variables to food habits during adolescence (Rolls et al. 2000): *genetic transmission*, *food experience restriction*, *modeling*, *practices and parental styles*. While some studies have not been able to confirm the existence of a genetic component in food preferences (Desor et al. 1975, Fabsitz et al. 1978), others have discovered this effect for one or two foods of the many considered ones (Falciglia and Norton 1994, Rozin and Millman 1987).

In reference to modeling, some researches (Craparo 2014, Craparo et al. 2014a, Cutting et al. 1999, Gori et al. 2014, Specchiale et al. 2013) show that modeling not only affects food consumption, but also individual orientations and behavioral styles with regard to food: for example, children tend to imitate dietary practices, typical of the parents, and also attitudes and behaviors related to eating disorders (Craparo et al 2014b, Magnano et al. 2014, Craparo et al. 2013).

In reference to parental styles, literature underlines that excessive control or permissiveness of children can negatively affect a child's healthy eating habits (Ledda et al. 2017). In fact, excessive control impedes the development of children's self-control relating to the eating habits (Birch 1980). If, on the other hand, children are allowed to choose freely what they want to eat, they choose foods high in sugar, sodium and saturated fat (Klesges et al. 1991). Additionally, restricting children's food access does not produce dislike for the restricted food, and encouraging a child to eat certain foods does not produce a liking of that food (Casey and Rozin 1989). These results contrast the model of De Bourdeaudhuij and Van Oost (1998), which suggest that parents should be encouraged to impose restriction and obligation rules as this could be translated into a lower frequency of consumption of unhealthy foods in adolescence and, later, in adulthood (Fisher and Birch 2000, Nicklas et al. 2001, Pellerone et al. 2107b).

In fact, literature reveals that family determinants can be considered as possible predictors of dietary behavior among adolescents and young adults; although the subject's representation of family interactions is mainly a reflection of an individual's perception, which can be influenced by identity development, above all during adolescence (De Bourdeaudhuij and Van Oost 2000).

According to this, Lau and colleagues (1990) in their model predict an enduring parental influence unless the child is exposed during a vulnerable period (clearly manifested during adolescence development, characterized by various aspects of physical, cognitive, and emotional changes, and where identity development occurs and identity status changes) to important social agents, whose beliefs and behavior differ from those of the parents. In this case, beliefs and behavior should change to become more consistent with those of the new socializing agents from infancy to adulthood. These new beliefs and behaviors should then persist throughout life, unless they are overridden in turn by new social norms during a subsequent vulnerable period.

Objective and aims

The general purpose of the present study is the analysis of the relationship between identity development (according to Marcia's Model), parenting styles (in accordance to Baumrind's Model), body image perception (according to the Model of Cuzzolaro and colleagues), and refusal of food in a group of adolescents and young adults. The specific objectives of this study are the following: to analyze the possible influences of parenting styles on identity development; to measure the relationship between identity, parenting and the possible presence of body dysmorphism in the group of participants. Besides, on the base of recent literature, it is hypothesized that:

a. parental care and control predict identity development and in particular: in females, maternal care can predict identity commitment, and paternal control can predict identity exploration; in the male group, the maternal care can predict both identity commitment and exploration;
b. a low level of identity development can predict the relationship that adolescents have with their body;
c. dysfunctional parenting can influence the eating habits and in particular, the level of disgust toward a specific food;
d. age, gender, identity commitment, parental control and eating habits are predictive variables to dysfunctional body perception.

Materials and methods

Participants

The present study was conducted on a group of 100 subjects, aged between 18 and 32 (M = 21.56; SD = 2.67), of which 71 females and 29 males.

In reference to the age variable, the group is stratified by:

a) a group of 48 adolescents (48%), aged between 18 and 20 (M = 19.86; SD = 0.46);

b) a group of 52 young adults (52%), aged between 21 and 32 (M = 23.13; SD = 2.90).

The level of education of both parents is almost comparable, with a predominance of high school. In detail, the analysis on the cultural context of the family finds that, with respect to the qualification of the father: 48% have a high school degree; 30% have a middle school degree; 16% a bachelor's degree. Compared with the level of education of the mother: 45% have a high school degree; 26% have a middle school degree; 22% a bachelor's degree.

This data is positive if considering the age of the parents, whose average age was 53.72 years ($S.D$ = 5.45) for the father and 50.18 years ($S.D$ = 5.89) for the mother.

Procedure

A cross-sectional study was conducted from May to December 2016. The questionnaires were distributed by qualified researchers, and participants were given 30 minutes to complete them. The questionnaire data were collected anonymously. Participants were recruited among university students in Palermo (Sicily). Participants were informed about the study aims and procedures, and they completed a written informed consent.

After informed consent had been obtained, the questionnaires were distributed to the participants.

A convenience sampling was used to recruit the participants of the present research; in particular, the participants were consecutively selected in order of appearance according to their convenient accessibility (also known as consecutive sampling). The sampling process was finished when the total amount of participants (sample saturation) and/or the time limit (time saturation) were reached. Although randomization is a probabilistic process to obtain two comparable groups, the samples used in these studies are generally not representative of the target population. In fact, in the context of non-probabilistic sampling, the likelihood of selecting some individuals from the target population is null. This type of sampling does not render a representative sample; therefore, the observed results are usually not generalizable to the target population. Still, unrepresentative samles may be useful for some specific research objectives, and may help answer particular research questions, as well as contribute to the generation of new hypotheses.

Research procedures described in this article were performed in compliance with the American Psychological Association, ethical guidelines for research by the Italian Psychological Association and in compliance with the Declaration of Helsinki (the statement of ethical principles for medical research involving human subjects).

Instruments

For the measurement of the variables, participants completed the following instruments: *Identifying Information Form*, *Ego Identity Process Questionnaire* (EIPQ), *Parental Bonding Instrument* (PBI), *Body Uneasiness Test* (BUT) and *Food Questionnaire* constructed ad hoc to investigate eating habits.

The *Identifying Information Form* is used to measure the following anamnestic data: age, gender, parental instruction level and parent's age.

The *Ego Identity Process Questionnaire* (EIPQ) is a tool that investigates identity status according to Marcia's model through the dimensions of exploration and commitment. The exploration level is measured through the analysis of four ideological domains (occupation, religion, politics, and values), and the commitment level is investigated through four interpersonal domains (family, friendships, gender roles, and sentimental relationships). Pace and Zappulla (2009) reported the estimates of internal consistency of the Italian version of EIPQ: .80 for commitment and .86 for exploration, respectively.

The *Parental Bonding Instrument* (PBI; Parker et al. 1979) is a questionnaire consisting of 25 items, divided into two parts (one for mother and one for father), which measures the perception of behavior of the parents during childhood. The instrument investigates the processes of parenting across two domains, parental care and control or overprotection, from the combination of which four types of attachment were classified: a) affectionate constraint (high scores in both scales); b) optimal parenting (high care and low protection); c) affectionless control (high protection and low care); d) and neglectful parenting (low care and low protection). The Italian adaptation reports the following estimates of internal consistency of the tool: .75 for mother's care, .84 for mother's overprotection, .83 for father's care, and .88 for father's overprotection (Scinto et al. 1999).

The *Body Uneasiness Test* (BUT; Cuzzolaro et al. 2006) is a valuable multidimensional tool for the clinical assessment of body uneasiness in subjects suffering from eating disorders and/or obesity; it is a self-administered questionnaire designed to evaluate the body image and its pathologies, and to explore several areas in clinical and non-clinical populations. The instrument is composed of 71 items, rated on a 5-point Likert (1 = never and 5 = ever), and it consists of two parts:

a. BUT-A, composed of 34 items, which values body shape/weight dissatisfaction, avoidance, compulsive control behaviours, detachment and estrangement feelings towards one's own body. Some examples are: "*I avoid mirrors"*; "*If I begin to look at myself*, *I find it difficult to stop"*; "*I have the sensation that my body does not belong to me"*;
b. BUT-B, composed of 37 items, which measures specific worries about particular body parts, shapes, or functions. Some examples of item are: "*The shape of my face*; *buttocks*; *odor*; *blushing"*.

The BUT-A scores were combined in a Global Severity Index (GSI, 34 items) and in 5 subscales or factors: Weight Phobia (WP), Body Image Concerns (BIC); Avoidance (A), Compulsive Self-Monitoring (CSM), and Depersonalization (D).

The levels of Cronbach's alpha coefficients range between .64 and .89. All the subscales show Cronbach's

alpha coefficients greater than .70 (Cuzzolaro et al. 2006).

The *Food Questionnaire* is a constructed ad hoc instrument to investigate eating habits, composed of 8 items, which measure the following areas: 1) a specific food which feels disgust; 2) the perceptual characteristics associated with refused food; 3) the frequency with which parents consume the specific food; 4) the first time that the specific food-disgust occured; 5) the timing of the reverberation of disgust; 6) identification of the subject who proposed that food for the first time; 7) the identification of the place where the specific food was consumed; 8) and the level of disgust and nausea toward the particular food. An example of item is: *"I ask You to indicate a specific food (not combined with another one) toward which You manifest an intense feeling of disgust"*. The assessment is rated on a 4-point Likert scale (1=strongly disagree, 4= strongly agree).

The levels of Cronbach's alpha coefficients are greater than .54.

Data analysis

All analyses were conducted with SPSS software (v 23.0).

In reference to preliminary data, the following analyses were performed: T test on independent groups in order to evaluate identity development, parenting styles and body image perception (males versus females). Regarding the analysis of the eating habits, descriptive and correlation analyzes were carried out.

The linear multiple regression analysis was used to verify the hypothesis concerning the predictive influence of parenting on identity development (first hypothesis).

In order to verify the predictive role of identity development on perception of body image, another linear multiple regression analysis was performed (second hypothesis).

A Multivariate Variance Analysis (MANOVA) was conducted to measure the possible influence of parenting styles and identity development on the perception of one's own body (third hypothesis).

Finally (fourth hypothesis), linear multiple regression analyses were conducted in order to value predictors of body perception, assuming that among predictive variables there were: gender, age of participants, and parents' type of instruction (socio-cultural level); parental styles (emotive-affective level); identity development (psycho-social level); and food habits (behavioral level).

The level of significance was set at $p \leq 0.05$.

Preliminary analyses

From the analysis of the frequency distribution on the basis of identity development, the following emerged: 39% of the students were identified as having an achievement identity status, followed by 24% with a diffusion status, and 21% with a moratorium status.

In reference to identity development, T test on independent groups (male versus female) shows significant differences in the importance attributed to family and friendships dimensions, and in the level of identity commitment. The average score analysis shows how girls manifest significantly higher scores in the above dimensions (**table 1**).

Table 1. *Mean scores, standard deviations and T test scores on each scale of the identity development in the male and female groups*

Variables	Sex	M.	S.D.	*P-value*
Occupation	Male	2.31	.72	.07
	Female	2.57	.46	
Religion	Male	2.50	.84	.63
	Female	2.57	.47	
Politics	Male	2.18	.63	.16
	Female	2.36	.43	
Values	Male	2.44	.70	.13
	Female	2.65	.46	
Identity Exploration	Male	1.89	.52	.07
	Female	2.03	.21	
Family	Male	2.41	.74	<.001***
	Female	2.88	.47	
Friendships	Male	2.68	.76	.02*
	Female	3.01	.43	
Gender role	Male	2.17	.66	.08
	Female	2.41	.48	
Sentimental relationships	Male	2.57	.87	.35
	Female	2.73	.58	
Identity Commitment	Male	1.96	.55	.01**
	Female	2.20	.26	

Notes:* *p < .001, two-tailed; **p < .01, two-tailed; *p < .05, two-tailed.*

Another T-test on independent groups (adolescents versus young adults) shows significant differences in importance attributed to friendships and sentimental relationships, and in the level of identity commitment. The average score analysis shows how adolescents seem to manifest a higher scores in friendships and sentimental dimensions, than young adults who show a higher level of identity commitment (**table 2**).

Table 2. *Mean scores, standard deviations and T test scores on each scale of the identity development in the adolescent and young adult groups*

Variables	Sex	M.	S.D	*P-value*
Occupation	Adolescent	2.56	.45	.58
	Young adult	2.50	.59	
Religion	Adolescent	2.56	.48	.98
	Young adult	2.57	.61	
Politics	Adolescent	2.35	.38	.84
	Young adult	2.33	.56	
Values	Adolescent	2.70	.40	.13
	Young adult	2.54	.60	
Identity Exploration	Adolescent	2.03	.21	.43
	Young adult	1.99	.35	
Family	Adolescent	2.86	.53	.30
	Young adult	2.75	.58	
Friendships	Adolescent	3.09	.37	.01**
	Young adult	2.83	.60	
Gender role	Adolescent	2.50	.50	.03*
	Young adult	2.27	.52	
Sentimental relationships	Adolescent	2.82	.56	.10
	Young adult	2.61	.69	
Identity Commitment	Adolescent	2.09	.28	.02*
	Young adult	2.25	.37	

***Notes:** **p < .01, two-tailed; *p < .05, two-tailed.*

In reference to parenting, a subsequent T test on independent groups was performed, comparing males and females within the group of participants. The data analysis shows significant differences in paternal control (p <.05) and paternal care (p <.05). The average score analysis underlines that females show a higher scores in paternal control (Males: M = 10.41, SD = 7.06; Females: M = 14.33, SD = 5.03) and paternal care (Males: M = 18.00, SD = 9.53; Females: M = 24.91, SD = 6.44).

Regarding the perception of body image, a subsequent T test on independent groups (male versus female) shows significant differences in the following dimensions: BUT total score, GSI, WP, BIC and CSM. The average score analysis shows that girls show significantly higher scores in all sizes (**table 3**). There are not significant difference between adolescents and young adults (p>.05).

Table 3 *Mean scores, standard deviations and T test scores on each scale of the body image in the male and female groups*

Variables	Sex	M	S.D	*P-value*
Total BUT	Male	28.35	26.80	.01*
	Female	50.28	31.93	
GSI	Male	.88	.78	.02**
	Female	1.47	.93	
WP	Male	1.14	1.02	<.001***
	Female	2.13	1.17	
BIC	Male	1.06	1.01	.03*
	Female	1.75	1.15	
A	Male	.45	.87	.33
	Female	.69	.90	
CSM	Male	1.00	.70	.09
	Female	1.43	.97	
D	Male	.60	.77	.13
	Female	1.02	1.04	

Notes: ****p < .01, two-tailed; **p < .01, two-tailed; *p < .05, two-tailed.*

Abbreviations: BUT= Body Uneasiness Test; GSI=Global Severity Index; WP=Weight Phobia; BIC=Body Image Concerns; A=Avoidance; CSM= Compulsive Self-Monitoring; D=Depersonalization.

Regarding the analysis of possible foods to which the participants feel an intense sensation of disgust, 32% of subjects indicated the food category of vegetables, followed by 12% and 10% who indicated fish and meat respectively.

In order to investigate perceptual characteristics associated with refused food, participants were asked to indicate characteristics of the food that caused them greater disgust, choosing between four possible options, namely, consistency, appearance, smell and taste. Data show that: 40% of the participants indicates smell, followed by 27% who indicates flavor, 23% consistency, and only 7% appearance.

When asked them: - *"How often do your parents eat this food?"*, 43% answered often, followed of 41% of participants who said rarely.

In order to investigate the intensity of disgust, it was asked: - *"Think about this food and how much You feel nauseated?"*. Data show that 43% of respondents indicated the answer enough, followed by 27% who indicated very, and 20% little.

Finally, Pearson's correlation analysis, which investigates the relationship between the frequency of food consumed and the level of disgust manifested, shows the presence of a positive correlation between the two dimensions (r = .27, p <.01). The same analysis, also, shows the presence of a positive correlation between the period during which the food was consumed for the first time and for the last time (r = .24, p <.05).

Results

In order to verify the first research hypothesis, four regression analyses were conducted.

In reference to the female group, the first analysis shows that an elevated maternal care is the only predictor of the level of identity commitment, explaining 14.5% of the overall variance (R^2=38.1; β=-.33; t=2.92; p<.01).

In reference to the male group, the same analysis underlines that an elevated maternal care is the only predictor of the level of identity exploration, explaining 73.5% of the overall variance (R^2=85.7; β=.73; t=4.38; p<.01). Furthermore, the predictive variables to the identity commitment are the elevated maternal care and paternal care, explaining 80% of the overall variance (**table 4**). The first hypothesis of research is confirmed.

Table 4. *Model summary of hierarchical regression analyses that predicts the level of identity engagement in the male group*

Variable	R^2	Adjusted R^2	SE	*β*	*T*	*P-value*
Mother's control	.90	.80	.01	.38	2.18	.06
Mother's care			.01	.65	4.48	<.001***
Father's control			.01	-.26	-1.46	.17
Father's care			.01	.43	2.65	.02*

Notes: *** p <.001; * p <.05

Abbreviations: SE= Standard Error; β=beta standardized coefficients.

Confirming the second research hypothesis, the multiple regression analysis shows that the only predictive variable of Compulsive Self-Monitoring (CSM) is the reduced level of identity commitment, explaining 18.2% of the overall variance (R^2=42.5; β=-.26; t=-2.15; p<.05).

Confirming the third research hypothesis, the Univariate Analysis of Variance shows the influence of maternal care on the frequency with which food is consumed (F=2.11, p<.05); the analysis of mean scores shows that: individuals with maternal parenting characterized by a high level of care seem to consume the food that disgusts them very little.

Similarly, the same data analysis shows that the level of paternal control influences the frequency and the level of disgust manifested towards the food itself (**table 5**); the analysis of mean scores shows that: subjects with parenting characterized by a high level of paternal control seem to consume the food very much, and manifest a higher level of disgust towards the food itself.

Table 5. *The influence of paternal control on the eating habits*

Measures	F	P-value
Frequency of consumption	2.37	.00
First experience	.62	.91
Last experience	1.41	.13
Level of disgust	1.50	.04

Notes: *p < .001, two-tailed; p < .05, two-tailed;*

As previously specified, a multiple regression analysis was used to detect the predictive variables of body perception in all participants.

The first analysis shows how a lower level of identity commitment and higher level of maternal control are predictive of the general level of body uneasiness (BUT), and they explain 23% of the overall variance (**table 6**).

Moreover, being younger, having a reduced identity commitment and an elevated level of perceived maternal control are predictive of weight phobia (WP), explaining 25% of the overall variance (**table 8**).

The only predictive variable of body image concerns (BIC) is the reduced level of identity commitment, explaining 18.3% of the overall variance (R^2=43.1; β=-.27; t=-2.27; *p*<.05).

Furthermore, a higher level of paternal control can be considered the only predictor of avoidance, explaining 15.2% of the overall variance (R^2=40.3; β=.28; t=2.30; p<.05).

Finally, being younger, having a reduced identity commitment and an elevated level of perceived maternal control are predictive of compulsive self-monitoring (CSM), explaining 29% of the overall variance (**table 9**).

Table 6. *Model summary of hierarchical regression analysis that predicts the total level of BUT*

Measures	R^2	Adjusted R^2	SE	*β*	*T*	*P-value*
Age	.48	.23	9.57	0.18	1.61	0.11
Gender			1.68	-0.19	-1.39	0.17
Father's age			1.08	0.25	1.34	0.18
Mother's age			0.99	-0.18	-1.01	0.31
Education level's father			3.45	0.01	0.07	0.94
Education level's mother			3.09	-0.18	-1.57	0.12
Identity exploration			14.71	0.13	0.96	0.34
Identity commitment			14.33	-0.30	-1.99	0.04*
Mother's control			0.56	0.24	2.22	0.03*
Mother's care			0.54	0.06	0.53	0.60
Father's control			0.67	0.14	1.16	0.25
Father's care			0.51	0.00	-0.02	0.98

Note: * p <.05.

Abbreviations: SE= Standard Error; β=beta standardized coefficients.

Similarly, the second analysis shows how a lower level of identity commitment and a higher level of maternal control are predictive of the global severity index (GSI), and they explain 22% of the overall variance (see **table 7**).

Discussion

The present work, starting from the psycho-social approach, explored the relationship between the development of identity and parental style, as dimensions

Table 7. *Model summary of hierarchical regression analysis that predicts the level of GSI*

Variable	R^2	Adjusted R^2	SE	*β*	*T*	*P-value*
Age	.47	.22	0.28	0.18	1.65	0.10
Gender			0.05	-0.18	-1.26	0.21
Father's age			0.03	0.27	1.42	0.16
Mother's age			0.03	-0.22	-1.18	0.24
Education level's father			0.10	0.00	0.01	0.99
Education level's mother			0.09	-0.15	-1.31	0.20
Identity exploration			0.49	0.05	0.46	0.65
Identity commitment			0.43	-0.25	-2.09	0.04*
Mother's control			0.02	0.22	2.05	0.04*
Mother's care			0.02	0.04	0.34	0.74
Father's control			0.02	0.12	1.07	0.29
Father's care			0.02	-0.02	-0.14	0.89

Note*:* * p <.05.

Abbreviations: SE= Standard Error; β=beta standardized coefficients.

Table 8. *Model summary of hierarchical regression analysis that predicts the level of WP*

Variable	R^2	Adjusted R^2	SE	*β*	*T*	*P-value*
Age	.50	.25	0.36	-0.26	-2.37	0.02*
Gender			0.06	-0.12	-0.83	0.41
Father's age			0.04	0.29	1.56	0.12
Mother's age			0.04	-0.29	-1.56	0.12
Education level's father			0.13	0.03	0.27	0.79
Education level's mother			0.12	-0.13	-1.15	0.26
Identity exploration			0.62	0.11	1.02	0.31
Identity commitment			0.54	-0.20	-1.76	0.04*
Mother's control			0.02	0.25	2.30	0.02*
Mother's care			0.02	-0.04	-0.35	0.73
Father's control			0.03	0.04	0.33	0.75
Father's care			0.02	0.05	0.47	0.64

Note: * p <.05.
Abbreviations: SE= Standard Error; β=beta standardized coefficients.

Table 9. *Model summary of hierarchical regression analysis that predicts the level of CSM*

Variable	R^2	Adjusted R^2	SE	*β*	*T*	*P-value*
Age	.54	.29	0.27	0.12	1.09	0.28
Gender			0.05	-0.27	-2.02	0.04*
Father's age			0.03	0.27	1.50	0.14
Mother's age			0.03	-0.27	-1.47	0.15
Education level's father			0.10	0.16	1.41	0.16
Education level's mother			0.09	-0.14	-1.30	0.20
Identity exploration			0.47	0.07	0.65	0.52
Identity commitment			0.41	-0.27	-2.44	0.02*
Mother's control			0.02	0.34	3.25	0.00***
Mother's care			0.02	0.01	0.13	0.90
Father's control			0.02	0.08	0.74	0.46
Father's care			0.02	-0.06	-0.52	0.60

Notes: *** p <.001; * p <.05
Abbreviations: SE= Standard Error; β=beta standardized coefficients.

which influence food habits and body perception during adolescence and young adult age.

To date, few studies have linked parenting styles with the child's eating habits; literature, starting with the model of Darling and Steinberg (1993), have pointed out, for example, that fruit consumption and related knowledge (attitudes, subjective norms, perceived social support, modeling, self-efficacy and intentions regarding the consumption of fruit) differ according to the parental style. In particular, the above-mentioned research demonstrated the positive effect of these practices – characterized by high levels of engagement, or moderate or low levels of rigor – on an adolescent's food habits, in terms of lower consumption of harmful foods (such as sugary drinks).

Regarding the analysis of possible foods to which the participants felt an intense sensation of disgust, the present study shows, among teenagers and young Italian adults, the presence of a significant prevalence of refusal of vegetables. One possible interpretation is dictated by the fact that the trends of vegetable proteins diets have a contradictory effect on perceptual interaction with food; such foods may, in fact, be considered less attractive than others.

Furthermore, data show the presence of a positive correlation between the frequency of specific food and the level of disgust manifested toward it, and between the disgust experience and the flexibility to consume the same food; the results suggest that an experience of disgust at a tender age generates more resistance to the reverberation experience.

With regard to levels of disgust, our data show that the father's control is involved in levels of disgust for a particular food in the child. Probably, among the various factors that cause disgust, the rejection toward food can be considered by participants as a separating and individualizing element for their identity development.

To partially confirm the first hypothesis of research, the results obtained underline the predictive role of maternal care on the level of commitment to identity acquisition in the female group.

In the male group, maternal care can be considered

as a predictor of identity exploration; furthermore, maternal and paternal care are predictors of identity commitment, demonstrating once again that the parent's ability to provide affection and warmth is significant in identity development. These results confirm that parenting and identity formation are dynamically interlinked, and underscore that parents keep being an important source of socialization for their children, even in late adolescence and young adult age. Confirming the second hypothesis, the results seem to suggest that good identity development – characterized by high levels of exploration and commitment – could be a factor of protection from dysfunctional perception of one's own body, probably in relation to greater self-esteem, which favors the development of autonomous and integrated identity. In particular, data have shown that high-profile subjects tend to exhibit a lower level of compulsive monitoring of their body. One possible interpretation is dictated by the fact that high-profile subjects also had more positive views of how others evaluated their appearance, which allowed them to consider themselves more favorably. This data confirms the literature which underlines that body image may improve when an adolescent's sense of self becomes increasingly stabilized (Fisher and Birch 2000).

The third research hypothesis has also been confirmed, related to the influence of excessive parental control – in particular the paternal one – on the intensity of food-specific disgust and the frequency with which it is consumed. According to the literature, it is noted that an authoritarian and normative style is counterproductive for the development of children's eating habits. In fact, in reference to the possible restriction in the field of food experience, literature shows that, apart from genetic factors, the influence of parents is mainly exercised by assuming the role of "guardians" of food access channels (Lewin 1951) and direct interaction with children (in forms of modeling and control). Similarly, Nicklas and colleagues (2001) identifying common food-related parenting styles, demonstrates that parents who use authoritarian parenting practices, one-sidedly attempt to control the child's food intake and eating practices through commands, instructions, directives or coercion, but also using food to pacify or reward their child. These eating habits tend to become stable during adolescence and adulthood.

The data also appear to demonstrate the influence of maternal care on reduced frequency with which the specific food is consumed. The result confirms the literature which underlines how this kind of parenting takes place by asking the son to make decisions about the type of food eaten, giving small portions when introducing new food, persuading the son to eat using discussion, explaining the health benefits of foods perceived as healthy; these elements seem to be positively associated with the number of healthy foods, which sons will consume during adolescence and young adult age (Fisher and Birch 2000).

Otherwise, according to the fourth hypothesis, the prediction model of body sensation shows that a lower level of identity commitment and a higher level of maternal control are predictive of the general level of body uneasiness; similarly, a lower level of identity commitment and a higher level of maternal control are predictive of the global severity index related to the body perception. Moreover, being younger, having a reduced identity commitment and an elevated level of perceived maternal control are predictive of weight phobia. This finding could be explained by the fact that, adolescents, above all females, learn specific food habits through imitation and observation of maternal behavior, providing explicit advice on dieting. Data confirm the literature which underlines that, among younger adolescents, mothers' attempts to control their children' eating habits are linked to children being overweight, and in particular that mothers of heavier children report greater use of external control to regulate how much and what their children eat (Williamson et al. 1995).

The only predictive variable of the body image concerns is the reduced level of identity commitment. Furthermore, a higher level of paternal control can be considered the only predictor of avoidance concern body perception. This probably occurs because adolescents and young adults are still heavily influenced by the paternal role and functions, typical of Sicilian culture (patriarchal), rather than by social adaptation typical of adolescence. This issue is related to the existence of patterns typical of the 'Mediterranean' family and to the predominantly structural characteristics of such patterns in marriage and family life, characterized by the extended patriarchal family, who is the preponderant form of co-residence in Sicilian cities (Ramaci et al. 2016).

Finally, being younger, having a reduced identity commitment and an elevated level of perceived maternal control are predictive of the compulsive self-monitoring; this result confirms the literature which underlines the effect of negative relationship with the mother on increased eating problems, operating both directly and indirectly by enhanced dissatisfaction with body and weight, one of the most potent predictors of eating problems.

This data is added to the study of relationships between personal identity and the family, the latter considered to be the most important laboratory for personal and social development, not just a safe and precursor nest of good self-esteem – especially during adolescence – but also an expression of new abilities, tastes and food preferences (Lau et al. 1990, Lucas 2010).

Conclusion

Based on the results described herein, it is appropriate to emphasize the limits of this work, namely: the absence of a sampling method, which prevents the presence of a representative sample, the generalization of results, and external validity.

Another limitation of this work is the lack of investigation of parents' eating habits; in fact, the processes of parental influence cannot be conceived as unidirectional, because literature has demonstrated that children's wishes and demands could influence family tastes and eating habits (Lupton 1996). The observation of everyday life leads us to believe that when children begin to explore the food options of the world outside their family, they can adopt new habits and introduce them in the home: children, adolescents and young people are more receptive to adults in novelties and fashion and often act as cultural innovators.

Another limit is represented by the absence of an investigation aimed to measure the influence of peers on the participants' eating habits; in fact, apart from the family environment, peer influence could also play a role in the development of attitudes and eating habits, especially during adolescence, the phase of life where the peer group is central to the conquest of autonomy and the development of identity. In addition to the impact of a kind of generic adolescent culture that would make the tastes and habits of boys and girls sharing the same environment relatively homogeneous, one may

expect that groups of friends mutually influence more specifically. Whether eating is a social experience or not, observing the eating behavior of other people like us and being exposed to their comments on food may have an effect on our own behavior.

The results of the present study add to some major studies on relationships between personal identity and family, considered an important context for personal and social development, not just a safe nest and precursor of good self-esteem, but also an expression of new tastes and preferences. In fact, only a few studies have examined the relationship between parenting, identity development and eating problems, and they have found indications of such a relationship, although the presence of these relationships within male groups has not been investigated in the international literature.

The complex relationship between parenting, identity development and body perception is important because of its influence on adolescents' health behavior. In fact, negative health consequences that may result from it include eating disorders associated to internalizing symptoms such as sense of perfectionism, reduced self-esteem and negative emotions including depression, anxiety and anger (Pellerone et al. 2016b, 2017e). Therefore, promotion of a healthy body image should be integrated across all interventions aimed not only to value the possible presence of food habits, eating disorders and health-related concerns, but above all to improve a multi-context assessment to measure family and identity dimensions.

This study also has another important clinical implication, because it underlines the role of identity as an important focus in the creation of positive development programs aimed at fostering positive adjustment and optimal functioning. Furthermore, by targeting body and weight, the dissatisfaction problems associated with eating could perhaps be decreased, even in the face of negative parental relations. This implies that other institutions, such as schools or youth activity organizations, have a responsibility in the prevention process.

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