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Perception of Family Functioning Among Adolescents that are Overweight and Obese: A Cross-Sectional Study

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Abstract

This study measured differences in perceived family functioning scores among adolescents that are overweight or obese grouped by age, parent marital status, number of occupants in the family home, and race. We recruited fifty-six adolescents that were overweight or obese. Independent sample tests evaluated the research questions. Adolescents in family homes with 4 or fewer total occupants perceived poorer family functioning and expressed less moral religious emphasis. Non-Hispanic adolescents perceived greater family conflict. Those with single parents experienced poorer family functioning, family cohesion, greater family conflict and less moral religious emphasis. This study supports weight management programs to include family functioning assessments.

Keywords: *Overweight; Obesity; Adolescents; Perceived Family Functioning*

Introduction

About a third of U.S. children between 2-19 years of age were classified as overweight or obese according to National health and nutrition examination survey (NHANES) data from 2011-2012 [1]. Approximately, 20% of 12-19 year-old adolescents were at or above the 95th percentile for BMI-for-age, and the prevalence of high BMI among U.S. children and adolescents appears to remain high for the past ten years. As a result, children and adolescents that are overweight are suffering mentally, emotionally, and socially [2]. Adolescents that are overweight subjected to ridicule about their weight were most likely to experience negative feelings, and weight bias internalization was associated with higher eating frequency as a coping strategy [3]. Pont et al. (2017) found that youth who endured weight teasing were social isolated, decreased their levels of physical activity, and increased weight gain [2]. Children that are overweight also experienced the fear of being laughed at – gelotophobia [4].

Obesity is a multi-factorial problem involving behavioral, biological and environmental factors [5]. It has long been accepted that nutrition and physical activity were the primary determinants of weight status among adolescents. However, one factor, often overlooked is family functioning and its association with obesity. Family functioning and parenting style account for 14-24% of the variance associated with a child's body mass index [6].

Family functioning variables examine the relationship between parent-adolescent, sibling-adolescent and the interaction between the two. The way in which families function appears to effect children's weight. For example, poorly functioning families exhibited poorer communication, dysregulation, disorganization and an inability to express emotion, which resulted in poorer health outcomes; whereas, high functioning families had clear familial roles, open communication, well regulated affect and improved health [7]. Higher family cohesion was associated with higher self-esteem, and higher scores on family conflict scale were associated with lower self-esteem scale among adolescents that were overweight or obese [8]. Frontini et al. (2018) assessed perceived family cohesion and found that

high perceived family cohesion was related to healthy weight management behaviors, such as higher levels of social life, body self esteem, and lower internalizing symptoms [9].

Adolescents that are overweight or obese may find themselves within an atypical family structure. Over the past decades, perhaps related to the no-fault divorce clause, it has become increasingly common in the US for children to be raised in family homes without two biological parents [10]. The children are trying to cope with the stress associated with their parents' poor marital quality [11] or their parents' divorce [12] which has led to increased family structure complexity.

Additional research is needed to understand the relationship between family functioning and adolescent obesity [13]. Specifically, research related to understanding the relationship between ethnicity, obesity and family functioning. A recent review found that minority groups may exhibit poor family functioning due to lifestyle changes, cultural perceptions and acculturation [13].

Furthermore, few studies investigate the relationship between age and the association with obesity and family functioning. There is evidence that behavioral problems are related to obesity and are likely mediated by the adolescent's age, however, additional studies are needed to understand this relationship [13].

A suitable questionnaire to assess perceived familial stress identified by adolescents that are overweight is the Family Environment Scale (FES) [14;15]. The 3 subscales evaluated with the FES include perceived *family conflict*, *family cohesion, and family moral-religious emphasis.*

The literature lacks research evaluating the relationship between family functioning and adolescents that are overweight/obese. Given this lack of research, these adolescents eligible to participate in a family-based weight management intervention in San Mateo County, CA were evaluated. The current study evaluates differences in perceived family functioning scores among adolescents that were obese or overweight, who were classified as 1) under 15 years of age or 15 years of age and older, 2) parents were married or non-married parents, 3) living in a household with 4 or fewer total occupants or 5 total occupants and more 4) non-Hispanic or Hispanic.

San Mateo County, California was chosen as the location for the current study because 16.6% of children and adolescents in the county were classified as being obese with a BMI-for-Age ≥ the 90th percentile and 17% were classified as being overweight with a BMI-for-Age between the 85th and 90th percentile [16]. Furthermore, children and adolescents of African-American (42.9 %), American Indian (54.3%), Hispanic (43.3 %) and Pacific Island (56.1%) ethnicity exhibited higher rates of obesity compared to their Asian (20.5%) and White (26.7%) counterparts. The average family size in San Mateo County is 3.14 occupants.

Methods

Design

A cross-sectional study was conducted and Independent Samples tests were performed to evaluate the research questions. The between-participant approach was utilized to measure differences in perceived family functioning scores among adolescents that were overweight or obese, grouped by age, parent marital status, the number of occupants in the family home, and race. Family functioning was assessed at one-time point.

Participants

Fifty-six adolescents that were overweight or obese were recruited for the study. The adolescent participants (25 females, 31 males) ranged in age from 10 to 16, and the average age of participants was 13 (*SD* = 1.74). A majority of the adolescent participants were younger than 15 years of age (73%), and 27% were 15 or older. Participants were recruited via referrals from pediatricians and family practitioners serving San Mateo County, CA. The study was conducted in multiple cohorts between January 2012 and September 2014.

Measures

Demographic Questionnaire

The questionnaire accessed adolescents' race, gender, age, the number of members living in the family home, and parents' marital status.

Family Environment Scale

The 90-item, self-report, true/false, fourth edition, FES questionnaire [17; 18] used was based on the family systems theory. Multiple researchers have also used the same scale to assess some form of family functioning [7; 15; 17; 20]. *Family cohesion* measured

the perceived commitment and support family members provide one another. For example, if an adolescent perceived high family cohesion he or she may have felt strongly connected to his or her family; hence, the child perceived adequate cohesion. If an adolescent felt isolated and not cared for this may result in a low family cohesion subscale score, thus indicating an inadequate amount of family cohesion.

The *family conflict* subscale examined the frequency of conflict within the adolescents' family. If an adolescent perceived high conflict within the family, it was indicative of an unhealthy amount of conflict. If adolescents perceived their family to exhibit low conflict, then that family may show effective conflict resolution and work together to correct family issues to avoid conflict.

Lastly, the *moral-religious* subscale assessed the promotion of personal growth which measured an adolescent's perceived family emphasis on ethical matters, religious issues and moral values. A high subscale score indicated that the adolescent perceived a sufficient amount of moral-religious emphasis. On the other hand, a perceived low subscale score indicated that moral-religious emphasis was lacking in the family.

Procedure

Overweight and obese adolescents eligible to participate in a family-based weight management intervention were invited to complete a perceived family functioning questionnaire and a demographic questionnaire after a parental consent form was signed. The FES was completed by study participants to assess adolescents perceived family conflict, family cohesion and family moral/religious emphasis, and in return, they received a complimentary t-shirt. The adolescents completed the FES separated from their parents.

Statistical Method

Statistical analyses were performed using IBM SPSS Statistics (Version 22; IBM Corporation 1989, 2011). Descriptive statistics are given as a number with percent for variables. Internal consistency for each scale was assessed using Cronbach's alpha procedure. The overall Cronbach alpha score for the current study was .83, which suggested high internal reliability. Results were reported for three subscales because the Cronbach alpha was greater than .6 and those subscales were *Family Cohesion*, *Family Conflict* and *Moral-Religious emphasis*. Standard subscale scores above 60 indicated a high level for that subscale. Standard subscale scores that fell below 60 indicated a low level for that subscale.

Independent Samples Test procedure was used to compare the mean scores of the two samples for each outcome variable. Mann-Whitney U test was used when the assumption of normality was not met. The alpha was set at 0.05 significance level. G*Power 3.1 determined the power for Independent Samples Test to be 0.38.

Results

About half of the adolescent's participants sampled that were overweight or obese were male (55%) as opposed to being female (45%). A majority of participants were less than 15 years of age (73%) and almost three-quarters classified themselves as Hispanic (73%). The adolescents overweight or obese participants reported that 65% lived in a household with 5 or more occupants, whereas 35% stated 4 or fewer occupants lived in their home. Lastly, 53% of adolescents stated that their parents were married and 47% reported their parents were not married (See Table 1).

Table1. *Demographic Information of Adolescents Participants Overweight or Obese*

Variables		N	%
Gender	Male	31	55.4
	Female	25	44.6
Age Group	Less than 15 years	40	72.7
	15 years or older	15	27.3
Race	Hispanic	41	73.2
	Non-Hispanic	15	26.8
Occupants in Home	4 or less	14	35.0
	5 or more	26	65.0
Parents' Marital Status	Married	28	52.8
	Single	25	47.2

Independent Samples Test

An Independent Samples test was conducted to compare perceived family conflict among adolescents that were overweight or obese who were less than 15 years of age and 15 years or older. There was a significant difference in family conflict scores among those who were less than 15 years of age (M = 53.98, SD = 8.97) and 15 years or older (M= 46.33, SD =10.95, $p < 0.05$). These results suggested that adolescents' age may have an effect on family conflict. Specifically, adolescents that were overweight or obese who were younger than 15 years of age perceived increased family conflict versus those 15 years of age and older (See Table 2).

Table2. *The difference between how adolescents that were overweight or obese less than 15 years of age perceived their families to be functioning compared to those 15 years and older*

Family Environment Scale (FES)	Less than 15 years of age (N = 40)	15 years of age and older (N = 15)	*p-value*	
Overall FES	486.38	481.33	0.734**	0.682*
	(41.23)	(38.21)		
Conflict	53.98	46.33	0.006**	0.011*
	(8.97)	(10.95)		
Cohesion	44.53	47.87	0.313**	0.396*
	(12.84)	(13.05)		
Moral-Religious Emphasis	54.75	52.07	0.359**	0.281*
	(7.23)	(10.24)		

Standard Deviations appear in parentheses below means. **Mann-Whitney U test, *Independent Samples Test

Additional Independent Sample tests were performed to measure differences in overall family functioning, family conflict, family cohesion and family moral and religious emphasis between adolescents that were overweight or obese with married parents compared to those whose parents are not married. A significant difference for overall FES scores was detected among those whose parents were married (M = 503.11, SD = 27.87) and not married (M = 468.64, SD = 37.24, $p < 0.001$). These results suggest that parents' marital status may have an effect on overall perceived family functioning among adolescent overweight or obese. Specifically, adolescents whose parents were not married experienced poorer overall family functioning than adolescents who had married parents (See Table 3). Differences in family cohesion, family conflict and family moral religious emphasis ($p < 0.05$) were detected between adolescents who had married parents and those who did not (See Table 3). These results suggest parents' marital status may have an effect on family cohesion, family conflict, and family moral religious emphasis. Specifically, adolescents with single parents experienced less family cohesion, greater family conflict and less moral religious emphasis compared to adolescents whose parents were married.

Table3. *The difference between how adolescents that were overweight or obese with married parents versus non-married parents perceived their families to be functioning.*

Family Environment Scale (FES)	Married (N = 28)	Non-married (N = 25)	*p-value*	
Overall FES	503.11	468.64	<0.001**	<0.001*
	(27.87)	(37.24)		
Cohesion	51.61	40.16	<0.001**	<0.001*
	(11.03)	(11.00)		
Conflict	48.07	55.56	0.009**	0.009*
	(7.23)	(11.78)		
Moral-Religious Emphasis	56.89	52.04	0.026**	0.028*
	(5.78)	(9.15)		

Standard Deviations appear in parentheses below means. **Mann-Whitney U test *Independent Samples Test

Independent Samples test were conducted to compare overall perceived family functioning (with the overall FES score) and family moral and religious emphasis among adolescents that were overweight or obese who lived in a family home with 4 or fewer total occupants and 5 or more total occupants. There was a significant difference for overall FES scores among those who lived in a home with 4 or fewer total occupants (M = 460.50, SD = 43.28) and 5 or more total occupants (M= 493.31, SD =41.54, $p < 0.05$). These results suggest that the number of occupants in the family home may have an effect on overall perceived family functioning in adolescents that were overweight or obese. Specifically, these adolescents who lived in a family home with 4 or fewer total occupants perceived less overall family functioning than adolescents who lived with 5 or more total occupants in the family home (See Table 4).

Moreover, there was a significant difference in perceived family moral religious emphasis scores among adolescents who lived in a family home with 4 or fewer total occupants (M = 48.93, SD = 10.00) and 5 or more total occupants (M = 55.04, SD = 7.21, $p < 0.05$). These results suggest that the total number of occupants within the family home may have an effect on family moral religious emphasis. Specifically, adolescents that were overweight or obese who live in a family home with 4 or fewer total occupants perceived less family moral religious emphasis than adolescents who lived with 5 or more total occupants in the family home (See Table 4).

Table4. *The Difference between how adolescents that were overweight perceived their families to be functioning when they resided in a family home with 5 or more occupants compared to those in a family home with 4 or fewer occupants.*

Family Environment Scale (FES)	4 or less (N = 14)	5 or more (N = 26)	*p-value*	
Overall FES	460.50	493.31	0.048**	0.024*
	(43.28)	(41.54)		
Cohesion	40.71	47.69	0.124**	0.124*
	(14.32)	(12.90)		
Conflict	50.57	51.81	0.864**	0.744*
	(11.57)	(11.20)		
Moral-Religious Emphasis	48.93	55.04	0.032**	0.032*
	(10.00)	(7.21)		

Standard Deviations appear in parentheses below means. **Mann-Whitney U test *Independent Samples Test

Lastly, an Independent Samples test was conducted to compare perceived family conflict among adolescents that were overweight or obese who classified themselves as Hispanic or non-Hispanic. There was a significant difference for perceived family conflict among Hispanic adolescents (M = 50.00, SD = 9.74) and non- Hispanic adolescents (M= 56.20, SD =10.00, $p < 0.05$). These results suggest that being Hispanic may have an effect on family conflict in adolescents that were overweight or obese. Specifically, non- Hispanic adolescents overweight and obese perceived slightly greater family conflict than their Hispanic counterparts (See Table 5).

Table5. *The Difference between how adolescents that were overweight Hispanic versus overweight non-Hispanic perceived their families to be functioning*

Family Environment Scale (FES)	Hispanic (N = 40)	Non-Hispanic (N = 15)	*p-value*	
Overall FES	486.56	482.47	0.572**	0.737*
	(38.63)	(44.56)		
Cohesion	46.20	44.67	0.592**	
	(13.67)	(11.38)		
Conflict	50.00	56.20	0.035**	0.035*
	(9.74)	(10.00)		
Moral-Religious Emphasis	54.54	52.63	0.663**	0.464*
	(7.35)	(9.97)		

Standard Deviations appear in parentheses below means. **Mann-Whitney U test *Independent Samples Test

Discussion

Notable results were uncovered after adolescents that were overweight and obese completed the FES. Those adolescents who were younger than 15 years of age perceived increased family conflict versus those 15 years of age and older. Such findings are consistent with the literature whereby Granic, Disshion, and Hollenstein (2003) developed a longitudinal study to assess parent-adolescent interactions and found that adolescent boys experienced increased conflict beginning at around age 11-12 and peaked at age 15-16 followed by a decline through age 18 [21]. Granic and colleagues (2003) also found a rise in familial role variability around age 13-14. They suggested that the variability is perhaps due to adolescents expressing new interpersonal goals, testing out new roles, and playing more active roles in initiating and controlling family interaction. It is important to note that it is unknown whether any of these adolescents were overweight or obese.

In this study, adolescents overweight and obese who lived in a family home with 4 or fewer total occupants perceived poorer overall family functioning, compared to those living in families with 5 or more, which is contrary to one study found in the literature [18]. Dunn (1998) however, found that sibling relationships can promote moral reasoning, conflict resolution and social understanding in children [22]. Also, being a part of a larger family was beneficial for children's social skills, psychological development and overall well-being. This may explain why in the current study, an adolescent in a family with 5 or more occupants experienced greater overall family functioning compared to those who resided in a family with 4 or fewer family members. The current study also found that those who lived in a family home with 4 or fewer occupants experienced less moral religious emphasis than adolescents who lived with 5 or more total occupants in the family home, which has strong support in the literature. In a twin study, a child's family appeared to be more influential on promoting positive characteristics and virtues as opposed to negative characteristics [22]. Bandura (1977) found that positive role models, who practiced positive characteristics, helped foster good moral character in young peoples' lives [23]. This may explain why in the current study, the greater number of occupants in the family home, the greater emphasis on moral values and religion, because there may have been more positive role models present to help develop and promote morals and religion. The benefit of having moral values and a good character is that they help the individual buffer the negative effects of stress and trauma, [24] which may be important with an adolescent that is overweight who experiences physical, mental or emotional problems. Noller (2005) found that sibling relationships influence the cognitive, social and emotional development of an individual [25]. It is important to mention that the studies discussed did not take into account whether the adolescents were overweight or obese. Additional research with a greater sample size is needed to better explore this topic.

Non-Hispanic adolescents overweight and obese perceived slightly greater family conflict than their Hispanic counterparts. Thayer, Updegraff and Delgado (2008) found that adolescents who adopted Hispanic familial values such as an emphasis on family harmony, thinking of themselves less and placing others' needs first, were positively associated ($p < 0.001$, $d = .17$) with the likelihood of the adolescent adopting solution oriented strategies during times of high conflict, in close relationships [26]. Solution oriented strategies include *collaboration* (negotiation and compromise) and *accommodation* (thinking of others needs more and oneself less).

The current study revealed interesting findings related to parent's marital status and perceived family functioning among adolescents that were overweight or obese. Adolescents that were overweight or obese, whose parents were not married, experienced poorer overall family functioning than adolescents who had married parents. Moreover, these adolescents who did not have married parents, perceived less family cohesion, greater family conflict and less moral religious emphasis compared to adolescents whose parents were married.

Utilizing data collected from the Adolescent Health Study, Amato and colleagues (2005) found that adolescents living in single parent homes consistently reported experiencing more problems and were more likely to see a therapist for an emotional problem [27]. Adolescents that grew up in stable two parent homes received effective parenting and experienced more cooperative co-parenting. Cooperative co-parenting models interpersonal skills, showing respect, communicating clearly, resolving disputes

through negotiation and compromise. Cooperative co-parenting means that parents support one another's decision with consistent discipline. This consistency between parents helps children learn and internalize social norms and values. Children in stepfamilies experience more problems than children in married homes, which is comparable to children who come from single parent homes. Furthermore, the literature found that compared with continuously married parents, single parent family structures vary with less emotional support of children, less child supervision, fewer rules, inconsistent discipline dispensation, and increased engagement in conflict with their children [27]. This supports current study findings in that adolescents in non-married homes did experience less moral-religious emphasis, less family cohesion and more family conflict. The unique aspect of the current study shows that the participants were all either overweight or obese, whereas this is not specified in the current literature. Lastly, children living in single parent homes report more emotional distress, reduced capacity to function in family roles, an increase in physiological indicators of arousal and observe conflict and hostility between nonresident parents. Inter-parental conflict is a direct stressor of children and can also interfere with attachment to parents, resulting in feeling more emotional insecurity [27]. Hence, the current study sheds new light on this area which may yield future research ideas.

This study was designed to describe differences in family functioning among demographically different groups of adolescents that were overweight and obese in hopes to provide ideas for future research in this area. The biggest limitation is that this study had low power. The study sample was predominantly Hispanic and was a small sample of participants that were overweight or obese from San Mateo County, California. Future research should consider incorporating participants from a vast array of races and from multiple counties to increase external validity. Another limitation is that due to the cross-sectional nature of the study, causality cannot be inferred. This study only provided data at a single time point, so that at another time point, the results may have varied from the current study. Performing a study with additional time points may be important to identify whether the outcomes are consistent over time.

In conclusion, the current study uncovered differences in perceived family functioning among adolescents that were overweight and obese. Those adolescents who were younger than 15 years of age perceived increased family conflict versus those 15 years of age and older. Those who lived in a family home with 4 or fewer total occupants perceived poorer overall family functioning and expressed less moral religious emphasis compared to those living in families with 5 or more. Non-Hispanic adolescents that were overweight and obese perceived slightly greater family conflict than their Hispanic counterparts. Adolescents overweight or obese whose parents were not married, experienced poorer overall family functioning, less family cohesion, greater family conflict and less moral religious emphasis compared to adolescents whose parents were married. The literature strongly encourages adolescent weight management programs to include family functioning assessments, for reasons such as those presented in this current study. Healthcare professionals must understand that differences exist in family functioning among adolescents that are overweight and obese related to age, race, parents' marital status and the number of occupants in the family home. By uncovering family dysfunction and providing adolescents and their families, with tools to improve family functionality, real healing can begin by confronting and solving underlying problems, at their origin.

References

[1] Fryar CD, Carroll MD, Ogden CL. Prevalence of overweight, obesity, and extreme obesity among adults: United States, trends 1960–1962 through 2009–2010. 2012; NCHS Health E- tat. http://www.cdc.gov/nchs/data/hestat/obesity_adult_09_10/obesity_adult_09_10.htm

[2] Pont SJ, Puhl R, Cook SR, Slusser W. AAP SECTION ON OBESITY, THE OBESITY SOCIETY. Stigma Experienced by Children and Adolescents with Obesity. Pediatrics. 2017;140(6): e20173034

[3] Himmelstein MS, & Puhl RM. Weight-based victimization from friends and family: implications for how adolescents cope with weight stigma. Pediatr Obes. 2019; 14, e12453, January 2019.

[4] Kohlmann CW, Eschenbeck H, Heim-Dreger U, Hock M, Platt T, & Ruch W. Fear of Being Laughed at in Children and Adolescents: Exploring the Importance of Overweight, Underweight, and Teasing. Front Psychol. 2018; 9, 1447, doi:10.3389/fpsyg.2018.01447

[5] Park SH, Park CG, Bahorski JS, Cormier E. Factors influencing obesity among preschoolers: multilevel approach. Int Nurs Rev. 2019; Apr 23. doi: 10.1111/inr.12513.

[6] Mellor D, Renzaho A, Swinburn B, Green J, & Richardson B. Aspects of parenting and family functioning associated with obesity in adolescent refugees and migrants from African backgrounds living in Australia. Aust N Z J Public Health. 2012: 36(4), 317-324.

[7] Alderfer MA, Fiese BH, Gold JI, Cutuli JJ, Holmbeck GN, Goldbeck L, et al. Evidence-based assessment in pediatric psychology: Family measures. J Pediatr Psychol, 2008; 33(9), 1046-1061.

[8] Nock NL, Ievers-Landis CE, Dajani R, Knight D, Rigda A, Narasimhan S, et al. Physical Activity Self-Efficacy and Fitness: Family Environment Relationship Correlates and Self-Esteem as Mediator among Adolescents Who Are OverweightorObese.ChildObes.2016;Oct;12(5):360-7:// doi.org/10.1089/chi.2016.0007

[9] Frontini R, Canavarro MC, Moreira H. Family cohesion and psychopathological symptoms in pediatric obesity: Is there an indirect effect? Child Health Care, 2018; 47:1, 101-117, DOI: 10.1080/02739615.2017.1316199

[10] United States Census Bureau. Living with mothers only is second-most common. Retrieved at https://www.census.gov/library/stories/2017/08/majority-of-children-live-with-two-parents.html, 2017.

[11] Elam K, Chassin L, Eisenberg N, & Spinrad T. Marital stress and children's externalizing behavior as predictors of mothers' and fathers' parenting. Dev Psychopathol. 2017; 29(4), 1305-1318. doi:10.1017/S0954579416001322

[12] Roizblatt S, Arturo Leiva F, Valentina M, & Maida S, Ana Margarita. Parents separation or divorce. Potential effects on children and recommendations to parents and pediatricians. Rev Chil Pediatr. 2018; 89(2), 166-172. https://dx.doi.org/10.4067/S0370-41062018000200166

[13] Halliday JA, Palma CL, Mellor D, Green J, & Renzaho AMN. The relationship between family functioning and child and adolescent overweight and obesity: a systematic review. Int J Obes. 2014; 38(4), 480-493.

[14] Zeller M, Reiter-Purtill J, Modi A, Gutzwiller J, Vannatta W, & Davies WH. Controlled study of critical parent and family factors in the obesogenic environment. Obesity. 2007; 15(1), 126-136. doi:10.1038/oby.2007.5

[15] Crossman A, Sullivan A, & Benin M. The family environment and American adolescents risk of obesity as young adults. Soc Sci Med. 2006; 63(9), 2255-2267. doi:10.1016/j.socscimed.2006.05.027

[16] San Mateo County Health Department. Report on overweight and obesity in children and adolescents. http://www.co.sanmateo.ca.us/vgn/images/portal/cit_609/21/25/650514357ObesityReport_FinalReport_041006.pdf. 2006.

[17] Moos R & Moos B. (1994). Family environment scale manual: Development, applications, research. 1994; 3 ed. Palo Alto, CA: Consulting Psychologist Press.

[18] Moos RH & Moos BS. Family Environment Scale Manual: Development, applications, research. 2002; 3 Ed, Palo Alto, CA: Center for Health Care Evaluation, Department of Veterans Affairs and Stanford University Medical Centers.

[19] Gundersen C, Mahatmya D, Garasky S, & Lohman B. Linking psychosocial stressors and childhood obesity. Obes Rev. 2011; 12(5), e54-e63. doi: 10.1111/j.1467-789X.2010.00813.x

[20] Stevenson N & Southerland W. Examination of Family Environmental Factors Associated with Obesity in African American Youth Resides in Baltimore City. McNair Scholars Undergraduate Research Journal, 2010; 2, 257-268.

[21] Granic I, Hollenstein T, Dishion TJ, & Patterson GR. Longitudinal analysis of flexibility and reorganization in early adolescence: a dynamic systems study of family interactions. Dev Psychol. 2003; 39(3), 606.

[22] Dunn J & Plomin R. Separate lives: Why siblings are so different. New York: Basic Books, 1992.

[23] Bandura A. Social learning theory. Englewood Cliffs, NJ: Prentice Hall, 1977.

[24] Park N. The role of subjective well-being in positive youth development. Ann Am Acad Pol Soc Sci. 2004; 591(1), 25-39.

[25] Noller P. Sibling relationships in adolescence: Learning and growing together. Pers Relatsh, 2005; 12(1), 1-22.

[26] Thayer SM, Updegraff KA, & Delgado MY. Conflict resolution in Mexican American adolescents' friendships: Links with culture, gender and friendship quality. J Youth Adolesc, 2008; 37(7), 783-797.

[27] Amato PR. The impact of family formation change on the cognitive, social, and emotional well-being of the next generation. Future Child. 2005; 15(2), 75-96.

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