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The Role of Fathers on Masculinity and Obesity in African American Adolescent Males

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The Role of Fathers in Masculinity and Obesity in African American Adolescent Males

Ailton Santonio Coleman, Ph.D.

University of Connecticut, 2015

African American adolescents suffer higher rates of obesity than European American adolescents. Greater prevalence in obesity among African American adolescent males is a particular concern for public health as adolescent obesity is linked to an increase in later life co-morbidities and earlier mortality, which African American adult males already experience at higher rates.

The goal of this dissertation was to understand socio-behavioral factors associated with obesity in African American adolescent males. To accomplish this goal, three different studies were conducted, including a systematic literature review. The systematic review examined research that focused on paternal influences on adolescent weight status.

Study 1 and 2 used the National Survey of American Life-Adolescent to understand the factors related to paternal nurturing and how the paternal nurturing affects obesity in Black American adolescents (13-17 years old). In study 1 ($n=596$), Black American adolescent males reported better relationships with their fathers than Black American females ($\beta = 3.14, p < .01$). Additionally, though actual income did not predict paternal-child relationships ($\beta = -.01, p = .31$), adolescents who perceived that they had more than enough ($\beta = -6.34, p < .01$) or just enough ($\beta = -5.13, p < .01$) had better nurturing relationship with their fathers than adolescents who reported not enough. Study 2 focused solely on adolescent males and the association between nurturing father relationships and obesity in father-present and kinship households ($n=507$). In father-present households, nurturing father scores failed to attain significance ($\beta = -0.53, p = .79$). However in kinship

households, closer nurturing father scores with social fathers was associated with lower weight status ($\beta=-6.36, p<.01$).

Study 3 investigated the function of gender role conflict and everyday discrimination on adolescent obesity (15-19 years old) in solely African American father-son dyads. This was completed using an Actor Partner Interaction Mediation Model within a respondent driven sample population ($n=118$). In sons, emotional eating fully mediated the relationship between everyday discrimination and weight status ($\beta=0.12, p<.01$), while sexual orientation had an indirect effect ($\beta=-20.29, p=.03$). In fathers, everyday discrimination ($\beta=1.12, p=.01$) and son's gender role conflict ($\beta=-0.40, p=.05$) had an indirect effect on the relationship between emotional eating and weight status ($\beta=0.08, p=.04$). These findings have implications for fatherhood and obesity-reduction programs.

Ailton Santonio Coleman-University of Connecticut, 2015

The Role of Fathers on Masculinity and Obesity in African American Adolescent Males

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A Dissertation

Submitted in Partial Fulfillment of the

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at the

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2015

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Ailton Santonio Coleman

2015

Doctor of Philosophy Dissertation

The Role of Fathers in Masculinity and Obesity in African American Adolescent Males

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This body of work represents my commitment to enhancing diversity in higher education and my field of study. Though many people have inspired and helped me from the conception of this body of work, I bear the sole responsibilities for any mistakes, omissions or flaws that this work may contain.

Dedication

I dedicate this work to my family,

To my father, Eldridge R.A. Coleman who taught me determination

To my mother, Onanonk Pantongcome who taught me strength

To my sister, Narlee Coleman who taught me graciousness

To my sister, Marla Coleman who taught me humility

To my stepfather, Misael Bermudez-Milan who taught me patience

Aperi os tuum muto et causis omnium filiorum qui pertranseunt
Aperi os tuum decerne quod iustum est et iudica inopem et pauperem

Proverbia 31 8:9

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Definition of Terms

The following terms are operationalized in accordance with their specific meaning in this dissertation. When referring to previous research, the dissertation uses the ethnic nomenclature used by the original authors.

African Diaspora: this dissertation uses the definition of *African Diaspora* proposed by Colin Palmer

“The modern African diaspora, at its core, consists of the millions of peoples of African descent living in various societies who are united by a past based significantly but not exclusively upon "racial" oppression and the struggles against it; and who, despite the cultural variations and political and other divisions among them, share an emotional bond with one another and with their ancestral continent; and who also, regardless of their location, face broadly similar problems in constructing and realizing themselves.” (Palmer, 1998, pg.58)

Black American: *Black Americans* are members of the African Diaspora who currently reside in the United States of America who trace their ancestry through the shared experience of the Trans-Atlantic Slave Trade in the United States or the Caribbean (Jackson, et al., 2004).

African American: An *African American* is a person of African descent who as a result of the Trans-Atlantic Slave Trade self-identifies as an American due to result of one of their direct ancestors being sold into slavery in the United States of America (Jackson, et al., 2004).

Caribbean Black: A *Caribbean Black* is a person of African ancestry who as result of the Trans-Atlantic Slave Trade self-identifies as West Indian or claims descent from an English, French, Spanish or Creole speaking country in the Caribbean (Jackson, et al., 2004).

Father-figure: The term *father figure* is defined as “any man-biological or social father-who exhibits paternal behavior toward a child” (King, 2010, pg.151)

Biological Father: *Biological fathers* are men who are the genetic progenitor of the adolescents in this study (Sangeetha & Roy, 2012).

Social Father: *Social fathers* are men that are in non-intimate relationships with the adolescent’s mother but still fulfill a paternal role within the household, such as an uncle, grandfather, or close familial friend (Sangeetha & Roy, 2012).

Father-present Household: Households that the biological father serves as the primary father figure are *father-present household*. The biological father does not need to reside with their child for their household to be considered a father-present household (Cole & Green, 2009).

Kinship Household: *Kinship households* are households where the primary father figure is a social father. Again, household type is not determined by residence of father figure (Cole & Green, 2009).

Actor Effect: The *actor effect* is the impact from a person's own independent variables on their mediators or dependent variables (Kenny, Kashy, & Cook, 2006).

Partner Effect: The *partner effect* is the impact from a person's partner's variables on their mediators or dependent variables (Kenny, Kashy, & Cook, 2006).

Overview of Dissertation Chapters

This dissertation comprises of five chapters investigating the role of father figures on African American adolescent obesity. The results of the dissertation are presented in a three-papers format. Chapter 1 demonstrates the necessity for this dissertation research by examining the existing literature, reviewing commonly used theoretical frameworks and highlighting gaps in current body of knowledge through a systematic review. The following three chapters present the dissertation research. Chapter 2 is cross-sectional secondary data analysis that explores sociodemographic predictors of paternal-child relationship using the nationally representative sample of African American and Caribbean Black adolescents in the National Survey of American Life-Adolescent. Chapter 3 builds upon the prior chapter as a descriptive study that investigates the role of paternal-child relationships on adolescent obesity in father-present and kinship households using the National Survey of American Life-Adolescent. Chapter 4 then examines the relationship between obesity and everyday discrimination along with gender role conflict in a purposive sample of African American father-son dyads. Finally, Chapter 5 threads the common theme between the three papers, summarizes the dissertation findings and addresses the implications for future work.

Chapter I:
The Role of Fathers on Adolescent Obesity
Introduction and Systematic Review

Approximately 60% of the Earth's total population will be overweight or obese by 2030 (Kelly, Yang, Chen, Reynolds, & He, 2008). The financial burden of the predicted obesity pandemic will overwhelm the healthcare systems of many countries (Balkau, et al., 2007). For example, in 2008 approximately 30% of Americans were obese (Freedman, 2011). In that year, economists estimated that the United States spent between 5-10% of its total national healthcare expenditure on direct medical costs of overweightness and obesity and 21% of the total national healthcare expenditure on obesity-related health costs (Tsai, Williamson, & Glick, 2011). Researchers have attempted to identify contributors of obesogenic environments to prevent the realization of an obesity pandemic. Primary factors for the growth in the rate of global obesity are changes in lifestyles and increases in the incidences of obesity within younger-age groups. Many of the current reviews on obesity focus on early childhood predictors of the disease (Brisbois & Farmer, 2012; Fraser, et al., 2011; Parsons, Power, Logan, & Summerbell, 1999). The results of these studies are that fathers have a significant, yet limited impact on childhood obesity. Of the seven potential markers of adult obesity, only one marker is a paternal-related variable, whereas the remaining markers split evenly between maternal or child-related variables (Brisbois & Farmer, 2012). However, a major disadvantage of the current approach of the childhood obesity paradigm is that paternal influences on childhood obesity do not appear in early childhood but appear in adolescence (Casey, et al., 1994). Moreover, the magnitude of the effect of paternal-

related variables on childhood obesity increases over time (Svensson, et al., 2011).

Additionally, as adolescence is a critical age of obesity entrainment that has a significant impact on obesity-related mortality, its comparison to early childhood remains unique (Burke, Beilin, & Dunbar, 2001; Dietz, 1994). Therefore, researchers may overlook the true effect of fathers on childhood obesity by focusing on the earlier years of childhood.

To address these issues, this review examined the impact of fathers on adolescent obesity. Specifically, this review examined the relationship of obesity and father-child dyads and how paternal variables influences obesity in adolescents between the ages of 13 to 18 years old. This review encompassed a broad range of study designs including qualitative, longitudinal, cross-sectional, and interventions studies to capture the multifactorial influences of fathers on adolescent obesity.

Methods

The review protocol for this study is accessible on *Prospero*; International prospective register of systematic reviews <http://www.crd.york.ac.uk/prospero/>, registration number: CRD42012002832. The framework of this review included physiological/genetic factors, social determinants of health, and psychological influences.

Types of studies: Both prospective and retrospective longitudinal observational studies were included in the review. Longitudinal studies could start before, during, or after adolescence as long as one data collection point occurred between the ages of 13 to 18 years old. Cross-sectional studies were included if the median age of the participants was between the ages of 13 to 18 years old. If the median age of the participants was not given, the study was included if range of age of the participants was between the ages of 13 to 18 years old. Qualitative studies were considered if the participants were

adolescents or fathers of adolescents. Intervention studies were considered if they met the inclusion criteria of longitudinal studies. Case studies were excluded from the review. No restriction was made on language or year of publication. Articles in French, Spanish, Italian, Portuguese, Thai and English were read in their original language. In consultation with an academic librarian, articles in other languages were translated with an electronic translator. If the full article of a study could not be found, then the abstract of the article was used in the review if the abstract contained the relevant criteria to warrant the study's inclusion.

Types of participants: Studies were restricted to human subjects. Participants were from developing and industrialized countries. Participants could not have genetic obesity-related disorders such as Prader-Adipositas-Willi syndrome, Bardet-Biedl syndrome, Cohen syndrome and Momo syndrome. Additionally, participants could not have pre-existing obesity related diseases such as metabolic syndrome or diabetes.

Outcome: Measures to determine obesity included body composition such as fat-free mass or body fat percentage, waist to hip ratio, or body mass index (BMI).

Literature search strategy: An extensive search of the scientific databases PubMed, Scopus, CINAHL Plus with Full Text, PsycINFO, Psychology and Behavioral Sciences Collection, ERIC, NIH reporter and PsycARTICLES was completed. The initial search was conducted in PubMed and then adapted to the search coding of the other databases. The database searches were conducted using the following English terms within the subject heading and text: (fatherhood OR masculinity OR father* OR father OR paternal) AND (obese [tiab] OR obesity OR overweight OR BMI OR "body mass index" OR overeating) AND (children OR child OR adolescent OR adolescence OR

teens OR teenager*) NOT ("metabolic syndrome" OR "case reports"[pt] OR diabetes). In addition, the abstracts of International Journal of Obesity [1997-2015], International Journal of Men's Health [2002-2015], Fathering [2003-2015] and Childhood Obesity [2005-2015] were hand searched because relevant articles may not have included the specified search terms in their title or abstract. References were organized and managed using RefWorks. The last search was run on April 28, 2015.

Results

Approximately 3000 articles were included in the initial screening for this review. The author of the review examined the abstract of 1134 articles and the full text of 206 articles. The reasons for article exclusion fell into four major categories 1) articles did not meet the age requirement, 2) participants had co-morbidities such as metabolic syndrome or a genetic disorder 3) articles did not include a separate analysis for fathers and 4) articles did not include weight status as a variable of analysis. 86 articles met the criteria of this review, 67% ($n=58$) were cross-sectional and 33% were longitudinal ($n=28$).

Table 1

The articles of this review came from 30 different countries. According to the World Bank classification 78% ($n=67$) of the studies came from High Income Economies, 6% ($n=5$) from Latin America, 8% ($n=7$) from the Middle East, 14% ($n=12$) from Asia and none from Sub-Saharan Africa, the Pacific Islands, the Caribbean or Former Socialist Countries. The years of article's publication are provided in Table 2.

Discussion

The Link Between Paternal And Adolescent Weight Outcomes

Paternal Weights Affects Adolescent Obesity.

The contribution of parental BMI to offspring's weight status changes over time (Magarey, Daniels, Boulton, & Cockington, 2001). Adolescence is a critical time to investigate paternal influences on childhood obesity because the correlations between offspring and paternal obesity increases in adolescence (Burke, Beilin, & Dunbar, 2001; Garn, Sullivan, & Hawthorne, 1989; Heude, et al., 2005; Lindeboom, Lundborg, & Van der Klaauw, 2010; Svensson, et al., 2011; Williams, 2001) and continues onto mid-life (Casey, et al., 1994). While earlier researchers report that a father's BMI does not influences his children's BMI (Staessen, et al., 1985), more recent results suggest to the contrary. An almost equal number of longitudinal (Frisancho, 2000; Lawlor, et al., 2006; Jaaskelainen, et al., 2011; Mo-suwan, Tongkumchum, & Puetpaiboon, 2000; Nhingpanha-Palomba, Chalencon, Bonnetterre, Raynaud, & Patural, 2013) and cross-sectional studies (Fuentes, Notkola, Shemeikka, & Nissinen, 2002; Liou, Liou, & Chang, 2010; Martinez, et al., 2001; Mihas, et al., 2008; Ozmert, Ozdemir, Pektas, Uckardes, & Yurdakok, 2011; Park, Yim, & Cho, 2004) reveal a positive relationship between paternal weight status and their children's weight status during adolescence. The positive relationship between father's weight gain and the increased risk for adolescent obesity is an example of how fathers' actions may nurture obesogenic behaviors in their children (Fasting, Nilsen, Holmen, & Vik, 2011).

Another recent pattern in the research is the correlation in father-son weight status. The asymmetrical relationship between paternal weight status and the biological sex of their offspring suggests that the correlation in BMI in father-child dyads may be a result of genderized modeling and acceptance of obesogenic behaviors rather than strict

genetic implications (Fosse & Haas, 2009; Lake, 1997; Magnusson & Rasmussen, 2002; Mostazir, 2014; Yoshinaga, et al., 2011).

Paternal Variables That Influence Adolescent Weight Outcomes

Paternal Genetics.

Genetics play an important role in the paternal influences of childhood obesity. Geneticists have identified the paternal link between gene transmission and obesity in genetic disorders such as Prader-Willi syndrome. Yet, the exploration of the genetic linkage between adolescent obesity and fathers is limited. The research into the effects of genetics and genetic mutation on adolescent obesity is promising though not extensively developed. Only two studies examine the relationship between paternal genetics and adolescent obesity.

Northstone et al. (2014) investigated the interaction of environmental factors and genetic mutations. In a transgenerational study, Northstone et al. report that fathers who begin smoking before the age of 11 are more likely to have overweight/obese children, than fathers who never smoke or fathers who start smoking later in life. Northstone et al. hypothesize that smoking before puberty causes cellular mutation to sex cells that causes the fathers' children to have a higher risk for obesity. Paternal smoking is associated with increased risk of overweightness and obesity for adolescents in other studies (Harris, Willet, & Michels, 2013).

Researchers have also found a paternal link in five of the six gene regions that showed evidence for genomic imprinting with the expression of obesity (Gorlova, et al., 2003). However, these regions only expressed themselves during early childhood (5 to 11 years old) and young adulthood (17 to 30 years old). Scientists have not discovered a

genetic region that has active genomic imprinting during adolescence that expresses itself through obesity phenotypes. Since the link between paternal influences on obesity presents itself during adolescence, environmental factors must at least have an equal contribution to adolescent obesity as paternal diathesis of the disease.

Paternal Occupation.

Researchers have reported the impact of father's occupation on adolescent obesity since the late 1980's (Hitchcock, Maller, & Gilmour, 1986; Lasker & Mascie-Taylor, 1989). Fathers with lower occupational status in advanced economies are more likely to have adolescents with greater BMIs than fathers with higher occupational status (Abreu, et al., 2014; Guven, Odaci, Ozgen, & Bek, 2008; Hitchcock, Maller, & Gilmour, 1986; Kautianianen, et al., 2009; Lasker & Mascie-Taylor, 1989; Kromeyer-Hauschild, Zellner, Jaeger, & Hoyer, 1999; Morrissey, 2013; Thibault, Contrand, Saubusse, Baine, & Maurice-Tison, 2010). The relationship between paternal occupational status and adolescent BMI is inverse in emerging economies (Abudayya, Thoresen, Abed, & Holmboe-Ottesen, 2007; Bharati, Deshmukh, & Garg, 2008). This cross-cultural dichotomous relationship may suggest the influence of paternal occupational status on adolescent obesity interplays between political-economic and cultural frameworks of obesity.

Whereas reviews of paternal influences on early childhood obesity dismiss the effect of paternal occupation as only a proxy measure for social economic status (SES), the influence of paternal occupation on adolescent obesity is present after accounting for other SES proxies (Abudayya et al., 2007). Moreover, researchers have evaluated the mechanism of paternal occupation on adolescent obesity by examining the separate

impact of paternal wages and the number of hours fathers worked (Benson & Mokhtari, 2011). Researchers found a significant positive relationship between paternal time at work and adolescent obesity; however, they found only a slight association between wages and obesity. This may imply that in developed nations paternal occupation status may actually be a proxy for father's involvement in child rearing activities and not a proxy for indirect economic benefits such as income or access to healthcare (Benson & Mokhtari, 2011).

Differences in the measure of father's occupation make it difficult to make comparison across studies. However, it can be generalized that fathers with occupations that require higher education levels in established economies tend to have children with lower weight status: whereas, in transitional economies paternal occupations that require higher educational attainment correlate with higher adolescent BMI.

Paternal Education.

Paternal education may have an adverse or beneficial impact on adolescent obesity depending on culture. A strong trend among studies suggests that higher paternal education levels relates to lower levels of adolescent obesity (Eidsdottir, Kristjansson, Siqfusdottir, Garber, & Allegrante, 2013; Garn, Sullivan, & Hawthorne, 1989; Ibrahim, Mousa, & Sivarajan, 2010; Koziel, Kolodziel, & Ulijaszek, 2000; Seidman, Laor, Gale, Stevenson, & Danon, 1991; Silva, Pelegrini, Ferreira de Lima e Silva, & Petroski, 2011; Tschumper, Nagele, & Alasker, 2006; Ullman, Bittenheim, Goldman, Pebley, & Wong, 2011; Wang, Slawson, Relyea, Southerland, & Wang, 2014; Wronka, 2014; Yen, et al., 2010). Researchers of these studies report that a father's education has an effect on daughters and sons. However, authors of select studies also report a difference depending

on the sex of the child (Musaiger, Al-Roomi, & Bader, 2014). Silva et al. found an association of lower paternal education and higher prevalence of whole body, peripheral and central adiposity in daughters but not in sons. Alternatively, Koziel et al. (2000) report that fathers with only an elementary level education have sons with greater BMI but did not find a significant effect on daughters. Jimenez-Pavon et al. (2010) reported a similar result in sons, however they found that father's education levels only affects lower central body adiposity.

In contrast to the previous findings, the authors of one study found a neutral relationship between the paternal educational levels and adolescent obesity and the authors of two studies report a positive relationship between education and child weight status. In a study from Saudi Arabia, researchers report that fathers' education does not influence the weight status of their offspring (Mahfouz, et al., 2011).

Doustmohammadian et al. (2012) state that Iranian adolescents are more likely to be obese as their father's education increases. Shi et al. (2005) show a similar positive relationship between male adolescents' BMI and paternal education level in China. The authors of this study report that within the cultural context of China, sons of higher educated fathers were less likely to walk to school than sons of lower educated father and the reduction of daily activity increases the prevalence of obesity within this group (Shi, Lien, Kumar, & Holmboe-Ottesen, 2006). Girls with fathers with higher education in South Korea have lower BMI; however, boys with fathers with higher education have higher BMI (Kim, Lee, & Han, 2015). Interestingly, the effect of lower education on weight status may be stronger than the effect of higher education on weight status.

Yinghui et al. (2013) report that the correlation between father-child BMI was larger for lower educated father than higher educated fathers.

The directional inconsistency of these studies implies that paternal education may not directly affect obesity, but serves as a pathway for microsystemic interactions. Gikas et al. (2003) note that adolescents with higher educated father are more likely to eat breakfast. Researchers report that teens that eat breakfast consume less sweets and soft drinks and more servings of fruits and vegetables than teens who skip breakfast. Liu et al. (2010) report that the paternal education levels moderate the relationship between adolescent smoking and BMI. Contrary to Shi et al. (2005) findings, Li et al. (2006) and Mota et al. (2009) report that adolescents' physical activity increases as paternal education status increases. Thus, adolescents of higher educated fathers have higher scores of physical functioning and are less likely to be overweight or obese (Al-Alkour, Khader, Khassawneh, & Bawadi, 2011). These authors provide convincing evidence that regardless of direction, paternal education influences adolescent behaviors such as physical activity and food intake, which leads to unhealthy weight status.

Paternal Influences of Physical Activity.

It is important to assess the role of paternal influences of physical activity in adolescent obesity since physical activity is a strong predictor of obesity. A father's physical activity is a more consistent correlate of early childhood physical activity than a mother's physical activity (Ferreira, 2007; Lam & McHale, 2015). Yet, a majority of studies that examine parental predictors of adolescent physical activity do not conduct an analysis of a father's influences (Ferreira, 2007). Three themes surrounding paternal influence on adolescent obesity emerged within the context of this review. They include

the following variables: paternal education status, paternal encouragement and paternal physical activity. Interestingly, paternal influence on adolescent physical activity interacts differently according to gender and cultural context.

As discussed earlier, researchers report both positive and negative relationships between paternal education and adolescent physical activity depending on gender (Al-alkour, Khader, Khassawneh, & Bawadi, 2011; Gikas, Triantafillidis, & Perdiki, 2003; Mota, Ribeiro, & Santos, 2009). The differences in communication between fathers and sons and fathers and daughters may be the reason behind this variation. Fathers are more likely to engage in conversation about healthy eating and physical activities with their sons than their daughters (Berge, et al., 2015). Thus, perceived paternal encouragement of physical activity relates to higher physical activity in males but not in females (Ferreira, 2007). The major finding of one longitudinal study is that male adolescents are more likely to be active in sports into adulthood if they have physically active fathers (Savage, DiNallo, & Symons Downs, 2009). In the United States, researchers report that African American adolescent males who engage in sports with their fathers are more likely to have a lower BMI, however a similar effect was not found in African American females, or European Americans of either sex (Jose, Blizzard, Dwyer, McKercher, & Venn, 2011). While these studies suggest a disproportional impact of paternal influences within father-son dyads, a limited number of studies demonstrate the beneficial influence of paternal physical activity on daughters. Authors report in cross-sectional (Robinson, Stevens, Kaufman, & Gordon-Larsen, 2010) and longitudinal studies (Siegel, 2011) that a father's physical activity associates positively with a daughter's physical activity. These studies suggest that in adolescence, paternal role modeling of physical activity is

important to both daughters and sons, yet gender roles may promote same-sex interactions between fathers and sons that foster physical activity through communication and mutual physical engagement.

Paternal Influences of Food Intake.

An evaluation of early childhood eating habits suggests that a mother's and father's feeding practices have an equal effect on shaping their children's adolescent weight (Crawford, 2010). Also a father's interaction with their adolescence children influences their children's diets (Berge, et al., 2013; Cella, Iannaccone, & Cotrufo, 2014; Kim, et al., 2008; Swaminathan, Thomas, Yusuf, & Vaz, 2013; Zhang L. M., 2011). During adolescence, fathers model eating habits for their children (Kim, et al., 2008). As a result, fathers and their children's food intake are similar (Fuentes, Notkola, Shemeikka, & Nissinen, 2002). However, same-gender correlations are more common in parent-child relationships (Berge, 2010). McIntosh et al. (2011) found a positive relationship between the number of times that fathers ate at fast food and full service restaurants and number of times their children ate at similar establishments. This relationship affects weight outcomes in father-son dyads as both father's and son's BMI positively relate to the number of times they eat away from home. However, this relationship did not exist between mothers and their children. Some might speculate that this is due to the genderized role of food preparation and that fathers are less likely to prepare food at home than mothers. In a study of single parent households, Stewart et al. (2009) found that adolescents of single mothers are more likely to eat fast food than adolescents who live with their single fathers, which suggests that single fathers are more likely to prepare food at home. One of the more interesting avenues of research is the role

of paternal absences on adolescent food intake. Fatherless boys report greater daily caloric intake than other groups (Field, et al., 2008). Children with non-resident fathers are more likely to skip breakfast; however, children of more involved non-resident fathers have greater breakfast and vegetable consumption than children of less involved non-resident fathers (McIntosh, et al., 2011). While one study found that paternal communication did not affect emotional eating (Vandewalle, Moens, & Braet, 2014) most studies demonstrate that negative communications with fathers have a negative influence on an adolescents' food intake. Overweight or obese girls are more likely to have unhealthy relationships with their fathers compared to normal weight girls (Darke, Disselduff, & Try, 1980; Stewart & Manning, 2009). Paternal teasing about weight is linked to binge eating and increase drive for muscularity in sons (Turner, Rose, & Cooper, 2005; Schaefer & Blodgett-Salafia, 2014) and concern about overeating increases as intimacy problems with fathers increases in both adolescent males and females (Mueller, et al., 1995). Conversely, a positive father-daughter relationship is a protective factor for metabolic risk factors in daughters (Ehrlich, Hoyt, Sumner, McDade, & Adam, 2015). Intriguingly, a father's communication with others may also influence a child's weight status. Fathers who report stronger social networks have children with healthier weight statuses (Watt, Martinez-Ramos, & Majumdar, 2012). The culmination of these studies challenge the concept that fathers are absentee figures in their children's nutrition, on the contrary fathers play an integral role in the development of healthy eating habits in adolescents.

Framework

Within this review, fathers influenced adolescent obesity through eight paternal pathways. They included related obesity, genetics, occupation, education, physical activity, food intake, paternal absence and communication. Whereas previous reviews on early childhood obesity negate the roles of fathers to non-essential figures, this review highlights the importance of fathers and opens new avenues for obesity interventions. The authors mapped a theoretical framework of paternal influences on adolescent obesity that allows for cross-cultural and interdisciplinary research by using the Seven Models of Population Obesity (Ulijaszek, 2008) (Table 3). One of the major findings of this review was how culture transverses paternal influences on adolescent obesity. The effect of genderized roles for fathers and their children based on biological-sex shows the interaction between genomes and culturally dictated activities that affect weight status. The productivity of parents and other community members then causes a bi-directional effect, which sustains the political-economic system. Specifically, the political-economic system directs paternal occupation selections and educational attainment. Nations experience a nutritional transition as political-economic systems shift from developing markets to established economies. Nutritional transition influences dietary intake and caloric expenditure that influences obesogenic environments and behaviors. Obesogenic behaviors and environments then lead to obesity. A combination of assortive mating and epigenetic mutations in obese fathers may lead to the development of thrifty genotypes, which are passed down from fathers to their offspring and creates a transgenerational paternal influenced cycle of obesity (Speakman, Djafarian, Stewart, & Jackson, 2007). This model adds to the current body of knowledge by serving as an alternative framework for adolescent obesity research or interventions that includes fathers. There were an

adequate number of cross-sectional and longitudinal studies, yet there were not any obesity interventions that target adolescents and their fathers. Authors of reviews on family based interventions report that family based obesity interventions are not often based on theoretical principles (Skelton, Buehler, Irby, & Grywacz, 2012). However, a growing trend in childhood obesity prevention is the use of ecological models, such as Davison and Birch's (2001), in which the predictors discuss the role that mothers play in nutritional knowledge, food preparation, feeding practices and monitoring children's weight. However, Davison and Birch (2001) only highlight the role of fathers as providers by identifying two examples of how fathers' work and education influences their children diet. Our paradigm provides greater insight into the multiple influences of fathers in a meta-model framework.

Limitations and Future Research Priorities

This review highlights some of the limitations of the field. The type of studies and the participant pools are examples of limitations. While this review included- both cross-sectional and longitudinal studies, there is a lack of qualitative studies and interventions that focus on father-child obesity. Future qualitative studies should examine the perspective of fathers and their children on paternal roles in adolescent obesity. Family based interventions should investigate microsystemic factors such as paternal communication, physical activity and food intake. The lack of studies from Africa, the Caribbean and the Pacific Islands reflect a limitation of the participant pools. We did not find any studies that met our criteria that collected data from nine of the top ten obese countries. Though this review included studies from 33 different countries, a majority of these studies were conducted in established countries. However, greater research is

needed in developed countries also. There were not any studies from Canada or Ireland that met the selection criteria; however Canada and Ireland are two of three established markets that the Organization for Economic Co-operation and Development has identified as having large increases in obesity (Policy Brief: OECD Obesity Update 2012, 2012). Lastly, researchers have overlooked the diversity of home environments. Gay adoption rights exist in almost half of the countries represented in this review, yet none of the studies included in this review examined the role of homosexual fathers on adolescent obesity.

Another limitation of this review is the lack of uniformity in measurements. Varying classification of weight status poses challenges for interpretation of results and comparisons across studies. Similar to the findings of findings of Guillaume (1999), the cutoff points of overweightness and obesity for adolescents often varied from study to study. For example, some studies included international standards such as the categories set by the International Obesity Taskforce (IOTF) while others used locally determined ranges such as China's reference curve. The use of local BMI stands allows authors to place their findings in the context of the communities they research, however future researchers should also report their findings using the IOTF cutoffs to allow global comparisons and meta-analysis. Occupational classification also differs between studies. The number of occupational categories for fathers range from two to five within the nine studies that qualified for this review. Future studies should use standardized occupational classifications such as International Standard Classification of Occupations to allow for cross study comparisons. Additionally, education was not a consistent measure across studies. Some studies reported father's education as the attainment of a specific type of

education (e.g. university, vocational/trade, or compulsory only) while others reported the number of years. In future studies, authors who use categorical variables of education should also report the number of years needed to meet that educational qualification.

The next stage of research should explore the mechanism that the paternal variables use to affect adolescent obesity. For example, the evidence of this review indicates that paternal education has an effect on adolescent weight status; however, researchers have not examined if greater education attainments lead to greater nutritional knowledge and skills, healthier food selection, or increase in access to physical activity with fathers. While studies included in this review suggest that genderized role modeling by fathers is a pathway of adolescent obesity, none of the studies examine how gender roles are transmitted between fathers and their offspring. A possible direction of research is the influence of gender expression between fathers and their children on adolescent obesity.

Conclusion

Mueller (2009) states that reviews of obesity are useless unless they offer potential solutions to the growing obesity pandemic. The framework created in this review offers both short-term and long-term avenues for researchers. Interventionists in family based obesity prevention can promote paternal dietary changes and increases in paternal physical activity to address the needs of overweight adolescents. Family health clinicians should work with fathers to insure positive communication that promote healthy weight status for their children. Health practitioners who are interested in long-term obesity prevention may have to become public health activists by joining with educators to promote higher education attainment and job placement to reduce the

prevalence of adolescent obesity as of the role of paternal education and occupation status plays a crucial role for adolescent obesity. This review does not negate the roles of mothers in adolescent weight status, however, it challenges anti-feminist scholarship that denies the role of fathers on childhood obesity and thereby places the “blame” of obesity solely on mothers. The results of this review promote a more egalitarian viewpoint of adolescent obesity by supporting the masculinist perspective that fathers contribute to their children’s health status.

Chapter II: (Article 1)

Predictors of Adolescents' Perceptions of Paternal-Child Relationships in African American and Caribbean Black Families

Abstract

This study examined whether contextual factors and child-related factors predicted paternal child relationships among African American and Caribbean Black adolescents within the context of the Responsible Fathering Model. Data included 596 adolescents who were interviewed as part of the National Survey of American Life-Adolescent. A series of multivariable linear regression suggested that perception of household income sufficiency and not actual income predicted greater paternal-child relationships among Black American teenagers (13 to 17 years old). Additionally, younger adolescents reported better relationships with their fathers than older adolescents. These results provide a possible venue for understanding father-child relationships within the Black American communities.

Introduction

My Brother's Keeper is a presidential initiative in the United States that seeks to address the persistent gaps in educational and economic prospects as well as health disparities that young men of color experience. Specifically, the initiative calls for the examination of opportunities to increase positive life outcomes in select critical indicators (The White House, 2014). One venue to achieve this goal is paternal involvement (The White House, 2014). A review of paternal involvement in longitudinal studies reports that paternal engagement has a positive effect on behavioral, social, psychological and cognitive outcomes (Sarkadi et al., 2008). Previous research that focused on African American fathers describes them as "absentee" and thereby "invisible" in the study of African American family dynamics (Rasheed & Rasheed, 1999). However, current investigations into African American fathers show them as active participants in their families even though they face familial restructuring caused by systematic barriers to economic resources (Cole & Green, 2009; Jones & Mosher, 2013; Peart, 2006; Roy & Burton, 2007).

Additionally, researchers have overlooked potential differences within sub-cultures by taking the broad approach of including all subgroups within the term "African American" (Arthur & Katkin, 2006; Williams & Jackson, 2000). The larger Black American population in the United States includes several small subpopulations such as African Americans, Caribbean Blacks, Afro-Europeans and recent migrant African families (Agyemang, Bhopal, & Bruijnzeels, 2005). Although each group has a distinct yet related culture, their shared racial status limits their access to power and resources that may have influences on financial, academic and health outcomes (Rong & Brown,

2002; Williams & Jackson, 2000). Moreover, the emphasis of most research on paternal-child relationship focuses on the effect of paternal closeness and not the potential sources of paternal closeness. Therefore, the sociodemographic factors that explain the variability in paternal closeness among different subgroups of Black adolescents are not well understood (Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008). The National Survey of American Life Adolescence is the first survey of its nature to examine difference in emotional, mental and structural conditions of Black American subpopulations (Jackson, et al., 2004). Utilizing the data from this survey, this study assessed the differences in paternal closeness scores in relationship to gender and ethnicity and identifies sociodemographic predictors of paternal closeness within Black American adolescents.

Background

Paternal Relationships.

Research on European American populations indicates that during adolescence youth begin to identify more strongly with their same-gender parent, and the quality of this relationship has implications for their social and mental adjustment (Couter, Manke, & McHale, 1995). Yet, research on parent-child relationships traditionally focuses on the maternal roles. Less information is available about the role of the father and the influence of his parental style, attitudes and behavior, in particular among Black American fathers. In addition to being depicted as uninvolved fathers, the media often portrays African American men in terms of negative masculine traits such as hypersexuality, aggressiveness, overbearingness and misogyny (Robert-Douglass & Curtis-Boles, 2013). However, African American men continually express the need to be role models for their children and provide family leadership in their conceptualization of positive masculinity

(Cazenave, 1979; Hunter & Davis, 1994; Sanchez, Liu, Leathers, Goins, & Vilain, 2011). African American and Caribbean Black fathers are more likely than mothers to reinforce gendered based behaviors with their sons and daughters (Hunter & Davis, 1994; Roberts-Douglass & Curtis-Boles, 2013; Roopnarine, 2004). Therefore, paternal-child attachment and interaction may take a different form than maternal-child attachment and interaction (DeFranc & Mahalik, 2002). Thus, scholars have called for greater attention to the role of a parent and child's gender in research on parental and family dynamics, specifically with father-son relationships (McHale, Crouter, & Whiteman, 2003).

Impact of Paternal Closeness.

In contrast to paternal involvement, defined as “engagement, accessibility and responsibility” (Lamb, 1986), paternal closeness refers to “feelings of affection, connectedness and warmth” between fathers and their children (Regnerus & Luchies, 2006, pg. 161). Likewise, to paternal involvement, paternal closeness affects several childhood outcomes. Firstly, paternal closeness influences intrapersonal development. Children who report positive relationships with their father report better psychological well-being (Coley, 2003; Davis, Rhodes, & Hamilton-Leaks, 1997; Grant, et al., 2000) more life satisfaction, higher self-esteem and lower reports of depression (McHale, et al., 2006). Secondly, father-child connection has implications for school performance. A growing body of literature reports that perceived paternal closeness among African American adolescents has a positive effect on academic outcomes (Lamborn & Nguyen, 2004; Lee, Kuser, & Cho, 2007) such as better grades, increased occupational aspirations (Hanson, 2007) and more academic engagement (Cooper, 2009). Lastly, paternal closeness has an impact on illicit substance abuse among African American

adolescents (Caldwell, Sellers, Bernat, & Zimmerman, 2004). Greater paternal warmth correlates to less risky behaviors such as lower underage drinking in adolescents (Jordan & Lewis, 2005; Stanik, Riina, & McHale, 2013) and greater drug refusal self-efficacy (Boyd, Ashcraft, & Belgrave, 2006).

Currently, few studies examine the role of ethnicity on paternal relationships in Black American subgroups. Despite the growing number of Caribbean Black migrants to the United States, differences in familial socialization and family structure between African American and Caribbean Blacks in the United States are relatively understudied (Roopnarine, Krishnakumar, Metindogan, & Evans, 2006). Reid and Finley (2010) note a positive correlation between nurturant fathering scores and both self-esteem and life satisfaction among African Americans. This relationship is not present in English-speaking Black Caribbean subgroups (Reid & Finley, 2010). Collectively, the previous research indicates the positive impact of paternal closeness and engagement on adolescent outcomes. However, the research has yet to evaluate empirically how social demographics promote or hinder paternal-closeness among Black American adolescents.

The Present Study.

While several theories are used in fathering research, a comprehensive or leading theoretical framework in the field has not emerged (Adamson & Palkovitz, 2014). Several conceptual models of fathering include contextual factors; however, they do not demarcate the effect of interactions between micro-, meso-, and exosystem (Cabrera, Fitzgerald, Bradley, & Roggman, 2014). A strength of an ecological approach is ecological models account for the bidirectionality of paternal-child relationship and external influences. This study used the Responsible Fathering Model to examine the gap

in the literature surrounding predictors of paternal-child closeness (Doherty, Kouneski, & Erickson, 1998). Responsible Fathering Model is an ecological model that posits that fathering is influenced by five elements: contextual factors, child factors, mother factors, coparental relationship and father factors. Specifically, the Responsible Fathering Model focuses on factors that help create and maintain bonds between fathers and their children regardless of parental marital status or paternal residential status (Doherty, Kouneski, & Erickson, 1998). This study examined two aspects of contextual factors, specifically economic support through reports of household income and cultural factors through subgroup populations of Black Americans. Additionally, we examined child-related factors such as a child's gender, age and perception of income sufficiency. As such, the hypotheses of this study are enumerated below:

Hypothesis 1: African Americans and Caribbean Blacks will differ in reports of paternal-child relationship as measured by paternal closeness scores.

Hypothesis 2: Black American males will report stronger paternal-child relationship as measured by paternal closeness scores than Black American females.

Hypothesis 3: Paternal-child relationship as measured by paternal closeness scores will be lower in older adolescents.

Hypothesis 4: Paternal-child relationship will increase as reported household income increases.

Hypothesis 5: Paternal-child relationship as measured by paternal closeness scores will increase as perception of household income sufficiency increases.

Methods

Participants

The participants of this study were African American and Caribbean Blacks who participated in the National Survey of American Life-Adolescent supplement study (Jackson, et al., 2004). The study was part of the National Institute of Mental Health Collaborative Epidemiology Survey initiative that included three national representative surveys—the National Survey of American Life, the National Comorbidity Survey Replication, and the National Latino and Asian American study (Colpe, Merikangas, Cuthbert, & Bourdon, 2004). The National Survey of American Life is based on a stratified, multistage area probability sample, consisting of a nationwide survey of African American, Caribbean Black and non-Hispanic European American adult population living in the continental United States. However, the National Survey of American Life-Adolescent differs from the larger National Survey of American Life study as it does not contain data on European Americans adolescents. The National Survey of American Life-Adolescent study received Institutional Review Board approval from the University of Michigan and the University of Connecticut granted approval for this secondary data analysis after the study proposal was approved by the Program for Research on Black Americans at the University of Michigan.

Procedure

The National Survey of American Life consisted of a national probability sample of Black households. The original National Survey of American Life-Adolescent sample consisted of 1,170 Black youth ($n = 810$, African American and $n = 360$, Caribbean Black). African American ancestry was defined as persons who self-identified as black

without named ancestral ties to the Caribbean. Caribbean Black ancestry was defined as persons who identified as black and indicated one or all of the following: 1) they were of West Indian or Caribbean descent, 2) they were from a country included on a list of Caribbean countries presented by the interviewer, and/or 3) their parents or grandparents were born in a Caribbean country. Description of the sampling methods of the survey has been reported in previous research (Jackson, et al., 2004). The National Survey of American Life-Adolescent sample included adolescents who reported on nurturing relationships with biological and non-biological parents. Since the purpose of this study was to examine paternal-child relationships, for this study the number of participants was limited to those who reported relationships with only their father and mother ($n=596$). The ages of the participants ranged from 13 to 17 years old. Approximately, 97% of the sample was enrolled in high school. The sample equally comprised boys ($n= 298$ unweighted, 53% weighted) and girls ($n= 298$ unweighted, 47% weighted).

Measures

Paternal Closeness: The primary outcome variable for this study was Paternal Closeness Scores. Paternal Closeness was a summative value that included the responses to a 12-item survey related to adolescent perception of father-child relationships. The survey's responses were scored on a 5-point Likert scale, from 1) *strongly agree* to 5) *strongly disagree*. Questions measured concepts of affection (e.g. "I can tell my father just about everything"), connectedness, (e.g. "My father and I are much closer than most fathers and daughters/sons") and warmth (e.g. "I feel like my father and I can share our feelings with each other").

Control Variables

Demographic questionnaire: Adolescent gender, age and ethnicity were assessed with standard questions as part of the randomized respondent selection process used in the household sampling procedure for the study. Interviewers also recorded the gender of the adolescent respondent. Imputed family income was calculated based on information provided by the adult respondent for the household in which the adolescent lived for the year prior to the adult interview. Additionally, participants answered a question about perception of income, “Does your family have enough money?” Participants could respond on a 5-point Likert scale 1) *More than enough*, 2) *Just enough* 3) *Not enough* 4) *Refuse to answer* 5) *Do not know*.

Data Analysis

For all statistical analyses, we adjusted the standard errors to account for the complex sample design of the National Survey of American Life-Adolescent. Complex survey analysis in SAS 9.3 was used to evaluate the study’s hypotheses. SAS 9.3 software adjusts for complex survey sampling methods that includes multistage and cluster study design. Descriptive statistics identified response levels to the items of the survey. Researchers assessed the initial association between paternal closeness scores and sociodemographic factors by a bivariate regression analysis. Then a series of multivariable linear regressions were performed to a) examine the relationship between demographic predictors and paternal closeness scores, and b) assess gender differences in paternal closeness scores. Linear regression models were considered an appropriate statistical approach because paternal closeness score variables met the criteria of an approximately continuous variable (DeMaris, 2004). All analyses presented are weighted data, with the exception of the examination of internal consistency. The Cronbach alpha

test was used to check for internal consistency for paternal closeness using SPSS 21.0. Researchers selected 0.7 or higher as a cut-off point for the inclusion of an item into the paternal closeness summative value score.

Results

Instrument Analysis and Variable Description

The Cronbach alpha for Paternal Closeness scores, ($\alpha = .87$, $n=11$), demonstrated a moderate to high level of internal consistency. As displayed in Table 1, the mean age for participants was approximately 15 years old. The mean household income was between \$40,000 and \$50,000. Overall, participants reported their household income was just enough or more than enough, as shown in Table 2.

Contextual Factors: The Relationship between Ethnicity and Household Income on Paternal Closeness

As presented in Table 3, African American and Caribbean Black adolescents have similar Paternal Closeness Scores, ($\beta = -2.37$, $p = .09$), with little association between household income and Paternal Closeness Scores ($\beta < .01$, $p = .25$).

Child Related Factors: The Relationship between Gender, Age, and Perception of Household Sufficiency on Paternal Closeness

Table 3 shows the association between paternal closeness and sociodemographic factors. Across ethnic groups, adolescent sons perceived a greater closeness to their fathers than daughters did ($\beta = 3.04$, $p < .01$). A majority of African American males (86.25%) and Caribbean Black males (82.89%) reported having a good or excellent relationship with their father. A lower percentage of African American females (75.69%) and Caribbean Black females (73.51%) reported good or excellent relationships with their

father. Younger adolescents reported closer paternal relationship than older adolescents did ($\beta=0.64$, $p<.04$). Lastly, adolescents with higher perceived income sufficiency reported better paternal relationships.

Combined Model: Contextual and Child-Related Factors on Paternal Closeness

In a combined multivariable linear regression that contains both contextual and child-related factors, ethnicity and household income continue to be non-significant. Gender and perception of income sufficiency retain significance; however, age becomes non-significant in the model Table 4. Lastly, Table 5 shows that in a male-only analysis: age and perception of income sufficiency are significant predictors of paternal closeness, however contextual variables remain non-significant.

Discussion

Previous research into the role of Black fathers proposes two different perspectives: the first view is that Black fathers are permissive or absentee figures in family dynamics; in the second view, Black fathers are active in contributing to the health and well-being of their children. This present study took a step back from these debates on the types of paternal involvement to examine sociodemographic factors that influence father-child relationships in African American and Caribbean Black communities. The results of this study provide empirical support for the influence of child-factors on paternal-child relationships under the Responsible Fathering Model. Contrary to the dominant pathology of Black fathers as “deadbeat dads,” a majority of participants in the study reported a good to excellent relationship with their father. Adolescent boys who reported higher perceptions of household income sufficiency reported closer paternal-child relationships regardless of ethnicity. Additionally, a majority of participants stated

that they had enough or more than enough income despite their parents facing racialized discrimination in the education system and workforce.

The link between father-child relationship and the concept of father-provider has been explored in other studies. The perception of being a provider is so intricately linked to the concept of being a father in the African American community that African American fathers fear their position of being a father could “be revoked” if they do not meet the role of provider (Hammond, Caldwell, Brooks, & Bell, 2011). Thus, the lower paternal closeness score maybe the result of the strain that African American fathers experience in trying to be emotionally present and economic providers for their children (Hammond, Caldwell, Brooks, & Bell, 2011). The similar findings between Caribbean Black fathers and African American fathers in this study may be due to the shared institutionalized barriers based on the legacy of slavery and racial discrimination that both groups must overcome to meet the prototypical American concept of father-provider (Peart, 2006). Glauber & Gozjolko (2011) report European American males may increase or decrease their work load based upon perception of gender ideologies following the birth of their child, while African American males in general are not afforded this opportunity and will continue to work regardless of personal concepts of male-female dynamics. These studies imply that fathers and their children are affected by the concept of fathers being sufficient providers. Future research should explore the bi-directional effect of access to financial resources by exploring reports of income sufficiency from fathers and sons dyads.

Another child-factor that influenced paternal closeness score was the child’s gender. In both African American and Caribbean Black groups, adolescent males

reported higher paternal closeness scores than females. This supports earlier findings of gender differences on paternal warmth and socialization (Peart, 2006). Additionally, age influenced paternal-child relationships. Older adolescents reported lower paternal closeness scores for males but not females. This finding supports a trend in the literature in which negative emotional states toward parents increase as children transition through adolescence (Dubas & Gerris, 2002; Smetana, Campione-Barr, & Metzger, 2006).

Contrary to expectations set forth by the Responsible Fathering Model, contextual factors such as ethnicity and actual household income did not predict paternal-child relationships. Reid and Finley (2010) reported a similar finding as participants in their study did not report a significant difference in paternal closeness based on ethnicity. Specifically, the comparable mean scores in paternal closeness may be a result of similar socialization processes for African American and Caribbean Black males in which fathers instill the skills and traits to survive different forms of institutional racism that males of African descent face regardless of culture heritage in the United States (Palmer, 2000).

This study has two important limitations. Due to the cross-section nature of the National Survey of American Life, the results are predictors of paternal-child relationships and not causal functions of those relationships. Additionally, the National Survey of American Life-Adolescent did not collect information on who provides the household income. As such, participants could come from dual-income households or single-income households, where the sole source of income could be the mother or the father. Although household income did not predict paternal-child relationships, household income and perception of income sufficiency are strongly correlated. Future research should investigate the source of household income as well as the perception of

household income to examine potential maternal influences on paternal-child relationships.

Conclusion

Overall Black American adolescents reported a positive relationship with their father. Black American adolescents did not perceive differences in paternal-child relationships according to cultural subgroups, but sons reported higher paternal closeness scores than daughters. Gender differences also showed in other predictors of paternal closeness such as with age. Older adolescent boys had poorer relationship with their fathers than younger boys. However, this trend was not present in adolescent girls. Adolescents of both genders described closer relationships with their fathers when they believed they had enough or more than enough income, regardless of actual household income. This study empirically supports child-related factors of the Responsible Fathering Model.

For clinicians, these findings offer another avenue for potential intervention and conversation in family based therapy. Moreover, a clearer understanding on the impact of perception of income sufficiency on paternal-child relationships is imperative for policy makers. Our findings highlight the importance of the development and continual financial support of programs that provide opportunities for economic advancement for fathers such as the National Responsible Fatherhood Program, which promotes positive father-children relationship through job training, employment services and career promotion education for fathers.

Chapter III: (Article 2)

The Role of Male Closeness on Black Adolescent Male Weight Status in Father-Present Versus Male-Kinship Households

Abstract

Black males are the only adolescent group in the United States to experience a significant increase in obesity rates from 1999-2010. This study used the National Survey of American Life-Adolescent to examine the relationship between male closeness and BMI in father-present and kinship-led households among Black adolescents. The National Survey of American Life-Adolescent is a nationally representative survey that focuses on African American and Caribbean Black adolescents (n=434). Obesity levels were similar between father present (19%) and kinship households (20%). However, a greater percentage of Black adolescent males in male-kinship households (68%) were normal weight than in father-present households (60%). Male-kinship homes reported higher percentages of male closeness (49%) in comparison to father-present household (46%). Ethnic differences were not present between father-present and male-kinship households. In a bivariate analysis, Paternal Closeness Scores were negatively correlated with BMI in Black American males ($p=.05$). Yet, after accounting for age, income, ethnicity, and participation in sports, higher male closeness is only predictive of lower BMI in kinship households ($p<.01$). Family Structure has a macro level role on obesity in Black American adolescent males. Future intervention among Black adolescents should focus on male bonding as an avenue to reduce obesity levels.

Introduction

Black American males are the only ethnic group between the ages of 2 to 19 to experience a significant rise in obesity from 1999 to 2010, with the greatest obesity rates increase among Black American adolescent males between the ages of 12 to 19 (Ogden, Carroll, Kit, & Flegal, 2012). The growing number of overweight/obese Black American adolescent males represents yet another health disparity within this group. Adolescence is a critical age of obesity entrainment as obesogenic behaviors and attitudes that form during this stage of life have a significant impact on obesity-related mortality later in life (Craigie, Lake, Kelly, Adamson, & Mathers, 2011; Dietz, 1994). Historically, the racial difference in weight status between Black and White Americans forms during adolescence, not before this time period (Kimm, et al., 2001). Therefore, adolescence is a key stage of development to investigate obesogenic factors in the Black American males.

Researchers theorize that the large number of health disparities, including obesity, among Black American males may be a consequence of social and gender norming that occurs between Black American fathers and sons as a result of systematic discrimination and the lack of economic opportunities (Griffith, Gunter, & Watkins, 2012; Wade, 2008). Much of the research on paternal influences on obesity is based on parents' reports of behaviors and focuses on early childhood, parenting style, and normative two-parent households (Patrick, Hennessy, McSpadden, & Oh, 2013; Sleddens, et al., 2011). This research approach is problematic as it delegitimizes the diverse family structures that exist with Black American communities. The progressively complex and fluid parental, martial and residential status that adolescents experience creates the need for a broader investigation into the types of fathers that are present in these adolescents' lives as well

as other male adults who are may have father-like roles in their families (Jayakody & Kalil, 2002).

The paucity of information on the effect of parent-child relationships on obesity and obesogenic behavior has been called “One of the most substantial gaps in the literature” (Patrick, Hennessy, McSpadden, & Oh, 2013, pg. S-77). Parental-child relationship focuses on closeness between parents and their children and refers to “feelings of affection, connectedness and warmth” between parents and their children (Regnerus & Luchies, 2006, pg. 161). A positive parent-child relationship has an effect on energy balanced-related behaviors in adolescents. In a longitudinal study in the United States, family cohesion, parental-communication and parental engagement predicted adolescents meeting national recommendations of moderate to vigorous physical activity (Ornelas, Perreira, & Ayala, 2007). In addition, parental bonding moderates the relationship between parental physical activity and adolescent physical activity (Dzewaltowski, 2008). Parental closeness contributes to healthier eating habits. Adolescents that report greater familial cohesion also report greater fruit and vegetable consumption, and are more likely to eat healthy breakfasts and lunches (Parletta, Peters, Owen, Tsiros, & Brennan, 2012; Young & Fors, 2001). Perception of parental affection also affects weight outcomes in adolescents. Children are at greater odds for obesity if their parents have incendiary communication styles in which parents use negative language that exacerbate difficult situations (Parletta, Peters, Owen, Tsiros, & Brennan, 2012). Therefore, parental-child relationships impact adolescent's physical activity, eating habits and weight outcomes and understanding this relationship represents an important avenue for investigating adolescent obesity prevalence.

A crucial factor to consider in examining the role of paternal-child relationship on adolescent obesity in Black American communities is the predominate pathology of father-absent households (Wade, 2002). This deficit approach implies that Black American adolescent males do not have paternal role models within their homes while at the same time not accounting for cultural and economic pressures that may force Black males to become non-residential fathers (Sangeetha & Roy, 2012). A more culturally responsive method to examine the impact of Black fathers on adolescent obesity is the strengths based approach. Specifically, the Ethnicity perspective to fathering within the Black community investigates Black fathers through the lens of cultural strengths and norms within the Black community that support adaptive familiar behaviors (Bowman, 1992). One cultural strength within African and African Diasporic communities is flexible fathering (Sangeetha & Roy, 2012). Within the concept of flexible fathering there are three types of fathers a) *biological fathers* that may or may not reside with their children, b) *non-biological fathers* who may co-reside and c) *social fathers* who are men that are in non-intimate relationships with the adolescent's mother but still fulfill a paternal role within the household, such as an uncle, grandfather, or close familial friend (Sangeetha & Roy, 2012). In the changing landscape of familial structures, it is important to consider the relationship between children and other parental figures that may affect energy balanced-related behaviors and sequential weight outcomes (Patrick, Hennessy, McSpadden, & Oh, 2013).

The current study, investigated the relationship between paternal-child relationship and obesity in Black American adolescent males using data from the National Survey of American Life-Adolescent. For the purpose of this study father

present household represents biological fathers and kinship household consist of non-biological and social fathers. This study's threefold purpose was to a) identify differences in Black American adolescent male's BMI in father present versus kinship households b) examine levels of male closeness in kinship households versus father present households and c) compare predictors of Black American adolescent male obesity by household make-up by using the data from a nationally representative study of African American and Caribbean Black adolescents in the United States.

Methods

Participants and Procedures

The participants of this study were African American and Caribbean Blacks who participated in the National Survey of American Life-Adolescent supplement study (Jackson, et al., 2004). The study was part of the National Institute of Mental Health Collaborative Epidemiology Survey initiative that included three national representative surveys—the National Survey of American Life, the National Comorbidity Survey Replication, and the National Latino and Asian American study (Colpe, Merikangas, Cuthbert, & Bourdon, 2004). The National Survey of American Life is based on a stratified, multistage area probability sample, consisting of a nationwide survey of African American, Caribbean Black and non-Hispanic European American adult population living in the continental United States. The National Survey of American Life-Adolescent differs from the larger National Survey of American Life study as it does not contain data on European Americans adolescents. The National Survey of American Life –Adolescents study received Institutional Review Board approval from the University of Michigan. Additionally, the Program for Research on Black Americans at

the University of Michigan approved the study proposal and design and the University of Connecticut Health Center approved this secondary data analysis.

The National Survey of American Life consisted of a national probability sample of Black household. The original National Survey of American Life-Adolescent sample consisted of 1,170 Black youth: African American ($n=810$) and Caribbean Black ($n=360$). For this study, the term Black or Black American was used to mean a group that includes both African Americans and Caribbean Blacks. Additionally, we used the term Black or Black American when reporting on previous research that does not differentiate between ethnic subgroups of African descent. African American was defined as persons who self-identified as Black without identified ancestral ties to the Caribbean. Caribbean Black was defined as someone who self-identified as Black and indicated one or all of the following: a) West Indian or Caribbean descent, b) origin from a country included on a list of Caribbean countries presented by the interviewer, and/or c) parents or grandparents were born in a Caribbean country. A description of the sampling methods of the survey has been reported in previous research (Jackson, et al., 2004). The National Survey of American Life Survey-Adolescent sample included adolescents that reported on nurturing relationships with biological, non-biological and social parents. Since the purpose of this study was to examine paternal-child relationships in Black American adolescent males the number of participants was limited to males ($n=507$). The ages of the participants ranged from 13 to 17 years old. Approximately, 97% of the sample was enrolled in high school, with the average level of education being the ninth grade.

Measures

Dependent Variable.

BMI: was calculated using the standard formula (weight in kilograms/height in meters squared). Then sex and age specific BMI scores were recoded into four categories based on CDC standards for adolescent weight (Kuczmarski, et al., 2002): underweight <5%, normal weight 5% < 85%, overweight 85% < 95%, and obese >95%.

Control Variables.

Household type: Participants were asked, “What man mostly raised you?” The open-ended question was then recorded. For the purpose of this study, we categorized participants that responded with their biological father as father-present household; participants that responded with their non-biological father or a social father were categorized as male-kinship households.

Demographic questionnaire: Adolescent age and ethnicity were assessed with standard questions as part of the randomized respondent selection process used in the household sampling procedure for the study. Imputed household income was calculated based on information provided by the adult respondent for the household in which the adolescent lived for the year prior to the adult interview.

After-school physical activity: Participants were asked “How many hours a week outside of school do you usually spend participating in sports, athletics or exercise?” Respondents answers were coded into 0) None 1) One or Less 2) Two 3) Three to Four 4) Five or more hours.

Paternal Closeness: Scores were based on a summative value that included the responses to a 12-items survey. Father-child relationship could reflect participant’s relationships with either his biological father, non-biological father, or a social father. The survey’s responses were scored on a 5-point Likert scale from 1) *strongly disagree* to

5) *strongly agree*. Questions measured concepts of affection (e.g. “I can tell my father just about everything”), connectedness, (e.g. “My father and I are much closer than most fathers and daughters/sons”) and warmth (e.g. “I feel like my father and I can share our feelings with each other”).

Data Analysis.

For all statistical analyses, we adjusted the standard errors to account for the complex sample design of the National Survey of American Life-Adolescent. All analyses presented are weighted data, with the exception of the examination of internal consistency. Complex survey analysis in SAS 9.3 was used to evaluate the study’s hypotheses. By using SAS software, Version 9.3, we were able to account for the complex survey sampling methods that include multistage and cluster study design. Descriptive statistics identified response levels to the items of the survey. Researchers assessed the initial association between BMI and paternal-closeness, household type, sociodemographic factors, and after-school physical activity by a bivariate regression analysis. Then a series of multivariable linear regressions were used to examine the relationship between paternal closeness and BMI by household type.

Results

Descriptive Analysis

A majority of participants reported that they were in father present households (59%). Other participants reported having kinship household (28%) or no male influence (13%). Participants reported a large diversity in parental combinations. Participants reported 30 different parental combinations such as father-mother, mother-stepfather, mother-uncle etc.

Table 1 shows the distribution of BMI, paternal-child relationship scores, ethnicity and participation in after school physical activity across father- present and kinship households. Within this sample, 38% of adolescent males in father-present household were overweight/obese compared to 36% of adolescent males in kinship households. A vast majority of participants reported good or excellent father-child relationship in both father present (86%) and kinship households (81%). The distribution of African American (93%) and Caribbean Blacks (7%) were similar in father present and kinship households. A majority of adolescent males in father present households (65%) and kinship households (68%) reported less than four hours a week of after school physical activity.

The median income for father present households was \$32,702, SE=4438, 95% CI [23,731, 41,672] and the median income for kinship households was \$29,877, SE=3862, 95% CI [22,071, 37,682]. The median age for adolescent males in father present households was 14.42 years, SE=0.19, 95% CI [14.04, 14.80].

Bivariate Regression Analysis

As shown in Table 2, no significant relationship existed between BMI and household income, participation in afterschool physical activity, household type or ethnicity; however, older adolescent males reported higher BMI and boys with higher paternal-child relationship scores had lower BMI than boys with the lowest paternal-child relationship scores.

Multivariable Linear Regression Analysis

Paternal-child relationship scores did not significantly predict adolescent males BMI when modified by household income, physical activity and ethnicity. Only

adolescent age remained a significant predictor, as indicated in Table 3. Within household type analyses yielded similar findings except for kinship households, where adolescent males with higher paternal closeness scores with social fathers reported lower BMI than boys with the lowest paternal-child relationship scores (Table 4).

Discussion

Previous work on the ecological aspects of childhood obesity has focused on the maternal contributions to adolescent weight status, yet the etiology of obesity is multifactorial (Patrick, Hennessy, McSpadden, & Oh, 2013). This is the first study to our knowledge that investigates the role paternal-child relationships on obesity in African American and Caribbean Black adolescent male populations using a nationally representative sample. In our study, we found an association between paternal-child relationships and obesity. Adolescent males with positive paternal-child relationships reported lower BMIs. However, after accounting for other social demographic factors and household type, the relationship was only significant in kinship households that were made up of non-biological or social fathers. Because of the dearth of information on the role of non-biological and social father on obesity in any age group, we theorize that male role models in kinship household fulfill a similar role as biological fathers (Jayakody & Kalil, 2002). The findings of this study support this theory, as social fathers did not differ significantly in nurturing scores from biological fathers. As such, social fathers would have a similar effect on obesogenic behaviors such as eating and physical activity (Dzewaltowski, 2008; Regnerus & Luchies, 2006; Young & Fors, 2001).

Our study represents a new approach to understanding intrapersonal contributors to adolescent obesity by taking into account the make-up of Black American households

that have members of the community that may take on father-like roles within a family. Contrary to the predominate depiction of father-absent households in the Black community (Wade, 2002), 87% of participants stated that they had a male figure in their lives that they felt had taken on the responsibility of raising them. A majority of Black American adolescent males considered themselves to have good/excellent father-son relationship regardless of the residential status of their biological father. Furthermore, over a quarter of Black adolescent males who would traditionally be considered to be in father absent households had non-biological or social fathers in their lives. Participants in this study reported 30 different parental combinations. While a majority of participants reported mother-father as the most common family make-up, the number of different combinations speaks to the diversity of household compositions within the Black American community.

Many of our results corroborate the findings of other studies. A majority of participants in this study reported 30 minutes or less of moderate to vigorous physical activity a day. While physical activity was self-reported, our findings were similar to those of Baskin et al. (2013), which used actigraph uniaxial accelerometers in a smaller sample of African American adolescent males. The low levels of physical activity among Black adolescent males are a source of concern as sedentary habits that develop in adolescence carries over into adulthood (Craigie, Lake, Kelly, Adamson, & Mathers, 2011). Consistent with previous studies, we found that family income was not a significant predictor of obesity levels in African American adolescent males after taking into account of paternal relationships (Parletta, Peters, Owen, Tsiros, & Brennan, 2012). This may be due to the complex interaction between income, income perception and

father-son relationship among African Americans and Caribbean Blacks males (Coleman et al., under review).

Due to the cross sectional nature of the data, one limitation of this study is that we cannot state causality between paternal-child relationship and adolescent weight status. Future research should investigate this relationship in longitudinal studies. Moreover, this study only investigated the role of paternal-child relationships on adolescent obesity. Future studies should examine these phenomena dyadically by investigating the perceptions of fathers on the paternal-child relationship and by examining if there is a reciprocal effect. Additionally, this study relied on self-reported anthropometric measures. In a review of the accuracy of adolescent self-report of BMI, Sherry et al. (2007) found that nationally representative sample have less weight bias, and furthermore males are more accurate in reporting weight outcomes than females. One of the greatest strength of this study is the generalizability of the findings. The National Survey of American Life-Adolescents is the first survey conducted in the United States to examine differences between Black ethnicities. This allows for cross cultural comparison and better understanding of African Diasporic populations in the United States.

Conclusion

Contrary to reports of father absent households in Black communities, the results of this study demonstrate that Black fathers and social fathers are active in the lives of Black adolescent males. A majority of participants in this study report a male role model. Positive paternal-child relationships were associated with lower obesity levels in Black American adolescent males. Among father present households, relationships with biological fathers did not predict obesity levels after accounting for social demographic

predictors. In households in which the father was not the primary male figure, male relationships were a significant predictor of obesity in adolescent African American and Caribbean Black males. Within these households, BMI decreased as male closeness scores increased. Additionally, we found that in households with adolescent males between the ages of 13 and 17 years old, traditional predictors of obesity were not significant. Household income, ethnicity and involvement in afterschool sports did not predict obesity levels. These findings have an important implication on interventions that focus on father-child relationships in the Black American community. Obese adolescent are more likely to have concurrent cardiovascular disease, prediabetes and experience social stigma. Furthermore, the effects of adolescent obesity carry over in adult diseases including metabolic diseases and several forms of cancer. These findings are significant for policy makers as they highlight the importance of the development and continual financial support of programs that encourage positive father-child relationships that promote children's healthy weight status, such as with the National Responsible Fatherhood Program. Moreover, the results of this study supports the expansion of father-focused obesity programs and community based social organization that seek to empower Black American adolescent males lives through the promotion of social fathers and male mentorship.

Chapter IV: (Article 3)

The Mediation Effect of Emotional Eating on the Relationship Between Everyday Discrimination and Gender Role Conflict and Obesity in African American Father-Son Dyads

Abstract

African American adolescent males have the largest increase in overweight, obese and class 2 obesity among American adolescent males. Obesity in adolescence can lower the quality of life of African American men by causing the earlier development of co-morbidities and may eventually lead to a shorter lifespan. This study examined whether emotional eating mediated the relationship between everyday discrimination and gender role conflict on obesity, and assessed the degree that African American fathers and sons affect each other on these variables. A total of 118 African American males (59 father-son dyads) participated in this study. Data from the father and sons were used together in a multilevel dyadic mediation regression model to determine the predictors of weight status. A son's emotional eating fully mediated the relationship between everyday discrimination and weight status. In fathers, everyday discrimination and son's gender role conflict had an indirect effect on the relationship between emotional eating and weight status. Thus, emotional eating may be a key mechanism for obesity interventions among African American adolescents and adult males.

Introduction

The National Health and Nutrition Examination Study reports that 1 in 3 African American males between the ages of 12 to 19 years old are overweight or obese (Ogden, Carroll, Kit, & Flegal, 2014). Based on a 14-year trend analysis from 1999 to 2012, African American boys are the only male racial or ethnic group to experience a significant increase in the prevalence in the rates of overweight, obese, and class 2 obesity (Skinner & Skelton, 2014). Adolescence is a critical period for obesity entrainment that tends to lead to irreversible increases in body weight status (Dietz, 1996; Spruijt-Metz, 2011). In a systematic review of 18 longitudinal studies on the impact of adolescent weight status, all studies reported that overweight adolescents were at significantly increased risk of becoming overweight or obese adults (Spruijt-Metz, 2011). Overweightness in adolescence has both short-term and long-term health outcomes. Overweight adolescents are at a higher risk for cardiovascular disease, type 2 diabetes, and sleep apnea (Daniels, et al., 2005). However, obesity has different health consequences for boys and girls. Obese boys are more likely to develop hypertension, obstructive sleep apnea and nonalcoholic-related fatty liver disease than obese girls (Kelsey, Zaepfel, Bjornstad, & Nadeau, 2014). Therefore the increase in obesity prevalence in African American adolescence males may exacerbate health problems for African American men who already suffer from higher risk of heart and liver disease as adults (Kelsey, Zaepfel, Bjornstad, & Nadeau, 2014).

Since the pathways to obesity are complex and multifactorial, an integrative theoretical perspective would be more appropriate than using a single theoretical framework. One approach to theoretical integration is theory elaboration (Bernard, 1996).

Theory elaboration attempts to expand the adequacy of a theory by adding, deleting, combining and reordering the logical extension of a particular theory or framework. Within the study of obesity, ecological models are the leading conceptual framework. Specifically, Davison and Birch (2001) are the first to propose an ecological model of childhood obesity. Their model was revised and expanded into the Six C's model (*cell, child, clan, community, country, culture*) (Harrison, 2011). Though both frameworks posit that obesity is the result of macro, meso and micro factors, they still contain conceptual gaps that limit their application to the study of obesity in boys of color. Since theory-based interventionists do not have a culturally appropriate theory to predicate their work on, the lack of a theoretical framework tailored to account for the experiences of African American men may be a contributing factor of why there have not been any published studies of behavioral obesity interventions that solely focused on African American men (Pagoto, et al., 2012; Newton, 2014). Therefore, theory elaboration is an appropriate conceptual framework to address the lacunae within the study of obesity among men of color. Noteworthy gaps in the Ecological Model of Childhood Obesity and the Six C's Model are omissions of 1) the impact fathers, 2) race based discrimination and 3) gender role conflict.

The first gap in Davison and Birch (2001) and Harrison et al. (2011) ecological models is the omission of the specific impact of racism on obesity. While both models discuss societal level variables, such as neighborhood safety and social economic status, these factors are decontextualized without mentioning the systematic discrimination in housing practices and employment that disproportionately places minorities in these unjust situations (Priest, 2012). The discussion of culture by Harrison et al. (2011) takes a

deficit approach by only highlighting the ways that culture contributes to obesity, such as negative norms surrounding food consumption, portions size, food preparation and cultural values surrounding the acceptance of larger body size. The Six C's model also mentions social marginalization as a predictor of obesity. Yet, the assessment of social marginalization is only within the framework of bullying overweight children because of their weight status. They do not address the experiences that children of color have because of racial discrimination. The failure to discuss the effects of discrimination is a significant oversight in the study of adolescent male obesity since race-based harassment is the most reported form of discrimination among adolescent boys, followed by weight-based discrimination (Bucchianeri, 2013).

The effects of discrimination on obesity are well documented among adult populations. Cross-sectional studies describe self-reported experiences of ethnic and racial discrimination and their association with greater body mass index (BMI) and waist circumferences (Chambers, 2004; Hunte, 2009; Tull, 1999; Vines, 2007). The causal effect of discrimination on obesity has been found in three longitudinal studies (Cozier, 2009; Cunningham, 2013; Hunte, 2011). Only Chambers et al. (2004) has investigated the relationship between racism and obesity in adolescents. They report a positive correlation between internalized racism with waist circumference in Black Barbadian adolescents. Taken as a whole, these studies support the theory that discrimination contributes to the burden of obesity in minority populations.

The second gap within the current ecological models is the impact of parental gender in childhood obesity, specifically the role of fathers and the effect of same-sex role modeling. Davison and Birch (2001) mention the term "mother" 14 times in

caregiver roles during their discussion of the ecological model of childhood obesity while the term father is only mentioned twice in the context of measuring socio-economics status of the family. The trend of minimalizing the role of fathers is also present in Harrison et al. (2011) Six C's model in which the term "father" is not mentioned once. The usage of the term "parents" to include mothers and fathers, but then using the term "mother" individually implies that fathers' roles are dependent on their relationships with mothers, while mothers have an independent impact on childhood obesity. This is a troubling proposition as numerous studies report that fathers have individual influences on their children's obesogenic behaviors such as physical activity (Crawford, 2010; Ferreira, 2007; Jose, 2011; Siegel, 2011) and dietary practices, (Berge, 2010; Feunekes, Stafleu, De Graaf, & Van Staveren, 1997; Kim, 2008; Zhang, 2011). Moreover, understanding the role of fathers is vital when examining obesity in adolescent males as many studies report significant association in obesity between fathers and sons (Jose, 2011; Lauzon-Guillan, 2009; Robinson, Stevens, Kaufman, & Gordon-Larsen, 2010; Savage, DiNallo, & Symons Downs, 2009).

Two theoretical frameworks that may address the weaknesses in the previous mention models are Brondolo's (2009) Pathways to Coping with Racism and O'Neil's (2015) Contextual Paradigm of Gender Role Conflict. Brondolo (2009) asserts, "[r]acism is a stressor that contributes to racial/ethnic disparities in mental and physical health and to variations in health outcomes within racial and ethnic minority groups" (pg. 64). Therefore, the difference in health disparities for African American males may be the result of deeply rooted social injustices that they face due to the distinct intersection of Blackness and maleness (Krieger, 2005). Within the Pathway to Coping with Racism

model, African American men experience discrimination that leads to negative coping such as emotional eating which may cause negative health outcomes, such as obesity.

The examination of gender roles in conjunction with racism is important because “gender identities are always racialized, and racial identities are always gendered” (Rich, 2014, pg.1040). The large differences in health disparities between men and women are attributed to gender socialization (Courtney, 2001). Quantitative and qualitative studies report gender and race differences in obesogenic behaviors among adolescents. For example, with weight-related behaviors, more African American adolescent males report not eating any vegetables and drinking more soda than African American adolescent females and European Americans adolescents of both sexes (Eaton, et al., 2012). Additionally, African American males have a higher prevalence of unhealthy diet behaviors (such as not eating, taking diet pills or taking laxatives) in comparison to European American adolescent males. These actions are a stark contrast to the relationship between African American and European American adolescent females as European American girls are more likely to use unhealthy dieting behaviors than African American girls (Eaton, et al., 2012).

Gender Role Conflict Scale is a key measure of gender in the study of men of color (Griffith, Gunter, & Watkins, 2012). Gender Role Conflict Scale is not a direct measurement of gender or masculinity but examines the “negative consequences from restricted gender roles that resulted in the restriction, devaluation, or violation of the self or others” (O'Neil, 2015, pg.79-80). Previously published work has examined the impact of gender role conflict on health behaviors (O'Neil, 2015). African American men who experience higher gender role conflict also experience higher negative psychosocial

functions, such as depression and low self-esteem (Laurent, 1997). A crucial gap in the study of gender role conflict is the lack of intergenerational approaches (O'Neil, 2015). Akin to the Pathways of Coping with Racism, O'Neil's Contextual Paradigm of Gender Role Conflict theorizes that gender role conflict situations, such as experiences with discrimination and oppression can lead to negative coping. In the context of obesity, this negative coping can be emotional eating.

The exclusion of the role of fathers, discrimination and gender role conflict is a limitation in the theoretical framework surrounding childhood obesity. Thus, utilizing an expanded theoretical model which incorporates these three additional considerations, the present study aims to: a) examine to the association between fathers and sons on dependent variables of Everyday Discrimination, Gender Role Conflict, Emotional Eating, and weight b) investigate the relationship between Everyday Discrimination and Gender Role Conflict on Emotional Eating in African American adolescent father-son dyads and c) assess the role of Emotional Eating on African American paternal and child's weight status.

Methods

Participants and Procedures

This study used a cross-sectional design with African American father-son dyads. The sample population is a hard to reach population due to the historical relationship of African American men in health research as well as the age of the adolescent males (Sadler, 2010). Therefore, the study utilized referral sampling as a recruitment technique. Initial recruitment with African American father-son dyads started in Hartford and Windham, CT. Eligibility for participation in this study included: fathers with self-

reported African American heritage, fathers had to be a biological parent of a son between 15 and 19 years old. Exclusion criteria included African Americans who reported familial origins in the Caribbean or recent African migration. Interviews lasted approximately one hour. Fathers chose the location of the interviews; most common location was father's home. Fathers and sons completed the interview at the same time; however, fathers and sons were not privy to each other's responses. A minimum of 36 dyads were required to test non-interdependence of variables (Kenny, 1998). Sample size was based by previously conducted studies on father-son dyads on gender role conflict (Marrocco, 2001). Both fathers and sons were given \$15 upon completion of the study. Study protocol was approved by the Institutional Review Board at the University of Connecticut Health Center #:14-161-1.

Measures

Control Variables.

Demographic questionnaire: Participants completed demographic surveys that included information on: age, sexual orientation, weight status, education, paternal employment status and son's residential status. Age was measured on a continuous scale for fathers and sons. Sexual orientation was measured with the item "In terms of your sexual partners, what is your sexual preference?" The seven-category order response set ranged from 1) *Always the same sex* to 7) *Always the opposite sex*. This variable was recoded into a dichotomous variable prior to analysis (with those who marked always the opposite sex as 1) strictly heterosexual and all others as 0) not strictly heterosexual). Education was measured with ten categorical variables that range from "9th grade" to "Currently in or completed graduate program". Education was considered continuous and

analyzed using parametric methods because of the interval nature of the variable and the number of categories. Paternal employment status was coded as one of three variables: 0) Unemployed, 1) Part-time employed, 2) Full-time employed.

Independent Variables.

Everyday Discrimination: Everyday Discrimination Scale was used to examine the perceptions of Everyday Discrimination among African American fathers and sons (Williams, Yu, Jackson, & Anderson, 1997). The 9-item responses for the Everyday Discrimination Scale are on a Likert scale of (1) *Never* to (6) *Almost every day*. In validation studies, the alpha reliability coefficient was .87 among African American adolescents (Clark, Coleman, & Novak, 2004), and .82 in African American adults (Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005). The test–re-test reliability coefficients of the Everyday Discrimination Scale is .70 (Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005). For this study, the Cronbach alpha was .84 and .80 for adults and adolescents respectively.

Gender Role Conflict: Gender Role Conflict was assessed using the Gender Role Conflict Scale. Gender role conflict was measured with two age-appropriate surveys. Both scales are rated on a six-point set of ordered categories that ranges from (1) *Strongly disagree* to (6) *Strongly agree*. Fathers completed the self-administered Gender Role Conflict Scale-Short Form (Wester, Vogel, O’Neil & Danforth, 2011). Higher Gender Role Conflict scores reflect more symptoms of Gender Role Conflict. The Gender Role Conflict Scale-Short Form is a 16-item survey that measures the following factors: Success, Power and Competition; Restrictive Affectionate Behavior between Men; Conflict between Work and Family Relationships; and Restrictive Emotionality.

Researchers have validated the Gender Role Conflict Scale among African American males. Test and Re-test scores for internal consistency range from .72 to .86. For the fathers in this sample, the Cronbach's alpha was .80 for Success, Power and Competition, .78 for Restrictive Affectionate Behavior between Men, .72 for Conflict between Work and Family Relationships, and .64 for Restricted Emotionality. Adolescent sons completed the 29-item Gender Role Conflict Scale Adolescents (Blazina, Pisecco, & O'Neil, 2005). The subscales for the Gender Role Conflict Adolescent include Restrictive Affectionate Behavior between Men, Conflict between Work, School, and Family Relationships and Need for Success and Restrictive Emotionality. While the number of items and subscales for the Gender Role Conflict Scale and Gender Role Conflict Scale Adolescents differ, the factors have positively correlated with the theoretically corresponding scales (Blazina et al. 2005). The four subscale factors had internal consistency coefficients ranging from .70 to .82. Cronbach's alpha for this sample was .69 for Need for Success, .79 for Conflict Between Work, School and Family Relationships, .88 for Restrictive Affectionate Behavior between Men, and .90 for Restrictive Emotionality. To account for the difference in the number of items between the Gender Role Conflict Scale and the Gender Role Conflict Scale Adolescence, the subscales and summative scores for the Gender Role Conflict Scale Adolescent was multiplied by a 16:29 ratio so that comparison between fathers and sons' scores could be made. Father's Success, Power and Control category and son's Need for Success category was renamed into Need for Success Power and Control. Similarly, the category Conflict Between Work, School, and Family was created.

Mediator Variable.

Emotional Eating: Emotional Eating was assessed using the Emotional Eating Scale (Arnow, Kenardy, & Agras, 1995). Participants rated their desire to eat based on different emotional states. The responses were recorded on a five-point ordered categorical scale that ranged from 1) *I have no desire to eat* to 5) *I have a very strong desire to eat*. Two forms of the scale were used to account for differences in eating behaviours between adults and children. Fathers completed the self-administered Emotional Eating Scale (Arnow, Kenardy, & Agras, 1995). The Emotional Eating Scales is a 25-item scale that measures three subscales that correlate with eating as a coping mechanism; Anger/Frustration, Anxiety, and Depression. Researchers have validated this tool with African Americans and males (Goldbacher, 2012). Initial internal consistency scores for the subscales are 0.78, 0.78, and 0.72 respectively (Arnow, Kenardy, & Agras, 1995). The Cronbach's alpha for the Emotional Eating Scale for this sample was 0.94 for Anger/Frustration, 0.92 for Anxiety, and 0.86 for Depression. Researchers have adapted the Emotional Eating Scale to be use with children and adolescents (Tanosfsky-Kraff, 2007). Sons completed the Emotional Eating Scale for Children and Adolescents. Researchers have confirmed the construct validity of this scale for African American children between the ages of 8 to 18 (Vannucci, et al., 2012). The Emotional Eating Scale for Children and Adolescents also has three subscales. The internal consistency scores for the three scales range from 0.83 to 0.95 (Vannucci, et al., 2012). The Cronbach's alpha for the adolescent population in this sample was 0.96 for Anger/Frustration/Anxiety, 0.86 for Depression, and 0.82 for Unsettled.

Dependent Variable.

BMI: Anthropometric data was collected using standard protocol from both the fathers and sons. Height and weight were measured three times and the average was recorded. Weight was measured using an electronic self-calibrating digital scale (Health O Meter 349KLX High Capacity Remote Display Floor Scale). Participants removed as much outerwear as possible. Regardless of the clothing worn, participants removed their shoes and were measured either barefoot or wearing socks. If possible, participants stood with their back, scapulae and buttocks in contact with a vertical surface with their head in the Frankfort Horizontal Plane position. Height was measured using a carpenter's triangle and a standard measuring tape. Weight status was calculated using the standard formula (weight in kilograms/height in meters squared). Then sex and age specific BMI scores were recoded into four categories: underweight, normal weight, overweight, and obese, based on CDC standards for adolescent and adult weights (Kuczmarski, et al., 2002).

Data Analysis.

All study variables were analyzed using descriptive statistics such as means and standard deviation or frequency distribution. Differences in continuous demographic, predictor and outcome variables between fathers and sons were determined using paired *t*-test, with the pairing specified between fathers and sons. Pearson's product moment correlation was used to evaluate the relationship among fathers and sons' summary scores for predictor and outcome variables. McNemar's test was used to examine the difference in binary predictors. Descriptive statistics, Pearson product moment correlation and paired *t*-test were conducted in SPSS v.22 for Windows version 11.

An interdependence Actor Partner Interaction Model (APIM) was developed to determine if weight status was predicted by Everyday Discrimination, Gender Role

Conflict, Emotional Eating and demographic factors (Kenny, 2006). The APIM and mediation testing were conducted in SAS v.9.4 for Windows version. Additionally, the APIM assessed the degree of influence that members of the father-son dyads have on each other. This multilevel modeling is appropriate when observations are not independent of each other, such as in this design, and data is collected from both members. All participants in this father-son study had a reciprocal partner. The APIM specification for distinguishable dyads was used since fathers and sons are distinguishable by parental role. This model was specified to have heterogeneous compound symmetry, which allows the error variance to differ for dyad members.

For this study, the actor effect was the impact of a person's Everyday Discrimination, Gender Role Conflict, and Emotional Eating, on their weight status. Partner effect was the impact of each person's Everyday Discrimination, Gender Role Conflict and Emotional Eating on his family member's weight status. The APIM provides for simultaneous and independent estimation of actor and partner parameters for each father and son. Age, paternal education and paternal employment were included in the model as control variables.

Multilevel regression was used to estimate parameters of the APIM using the PROC MIXED. This procedure is appropriate in this type of analysis because members of the dyad are assumed to be correlated because of their proximity and relationship (Kenny, 2006). In this type of model, individuals are nested within their familial dyad. Actor and partner effects were estimated for all mix variables, those that differ both between and within couples, including Everyday Discrimination, Gender Role Conflict, Emotional Eating, age and sexual orientation. Only main effects were determined for

between dyad variables, i.e. scores that differ between dyads but are identical within dyads such as paternal education and parental employment. Mediation models are theoretically causal models (Baron & Kenny, 1986). This means mediation models presume that the mediator causes the outcome variable. Linear regressions models were fitted based on the procedures outlined by Baron and Kenny (1986) to examine whether the association between Everyday Discrimination and Gender Role Conflict and BMI was mediated by Emotional Eating. This procedure is appropriate as the independent, mediator and dependent variables are all at level 1, i.e. 1-1-1 model (Zhang, Zyphur, & Preacher, 2009). The first equation regressed the dependent variables (weight status) on the independent variables (Everyday Discrimination and Gender Role Conflict). The second equation tested the independent variables (Everyday Discrimination and Gender Role Conflict) on the mediator variable (Emotional Eating). The third equation tested the role of the mediator variable (Emotional Eating) on the dependent variable (Weight Status). The final equation regressed the dependent variable (Weight Status) on both the independent (Gender Role Conflict) and mediator variables (Emotional Eating) (Baron & Kenny, 1986).

Results

Descriptive Analysis

Table 1 provides the descriptive results of this study. The sample included 118 participants, 59 fathers and 59 sons. A majority of sons were in older adolescence ($M_{\text{age}}=17.12$, $SD=1.40$), while two-thirds of fathers were younger than 50 years old ($M_{\text{age}}= 45.22$, $SD=8.26$). Most of the participants identified as strictly heterosexual (88.1% of fathers and 79.7% of sons). Although a majority of adolescent sons were classified as having a healthy weight, over 70% of fathers were overweight or obese.

While the most common education level for fathers was a high school diploma, father's educational level ranged from General Education Development (GED) to completion of graduate degrees. Over a quarter of fathers were unemployed or had part-time employment.

Bivariate Testing of Nonindependence

The differences in means scores across study variables are shown in Table 2. While fathers mean BMI scores were higher than their sons' BMI, fathers and sons did not significantly differ in mean BMI. Everyday discrimination scores did not differ between fathers and sons. Fathers and sons did not differ in summative Gender Role Conflict scores, yet they significantly differ in the subscales scores. Son's scores for Restricted Emotionality exceeded paternal scores. After Bonferoni corrections, the relationship failed to retain significance. Fathers reported higher mean scores on Conflict between Work/School and Family, while sons reported higher mean scores on Need for Success, Power and Control. These relationships remained significant after Bonferoni corrections. Fathers did not statistically differ from sons on Emotional Eating scores. The average score for fathers and sons on the Emotional Eating scale was 56.90 ($SD=27.17$). This combined score suggests a moderate level of Emotional Eating for fathers and sons. McNemar's test determined no significant difference in the proportion of not-strictly heterosexual fathers and sons ($p=.09$).

Most of the correlations between study variables had a small to medium effect size. Correlations between study variables are presented in Table 3. BMI correlated positively between fathers and sons. Only fathers' Everyday Discrimination scores correlated with other variables. Not-strictly heterosexual fathers reported higher

Everyday Discrimination scores. Fathers who reported higher Everyday Discrimination Scores reported higher Emotional Eating Scores. One of the larger effect sizes was the relationship between Emotional Eating and BMI (sons: $r=0.45$, $p<.01$; fathers: $r=.27$, $p<0.05$). For fathers and sons, BMI increased as Emotional Eating Scores increased. An unexpected phenomenon was observed between father's Gender Role Conflict scores and BMI outcomes for fathers and sons. As fathers' Gender Role Conflict scores increased, BMI for fathers and sons decreased ($r=-.29$ and $r=-.26$, respectively; $p<.05$ for both). Interestingly, while there was a positive correlation between fathers' and sons' Gender Role Conflict scores ($r=.40$, $p<.01$) sons' Gender Role Conflict did not correlate with their weight status. Reported sexual orientation also correlated with the study's other variables. Fathers who reported having exclusively ideal opposite-sex sexual preference correlated with lower Gender Role Conflicts ($r=-.33$, $p<.01$). The correlation between past sexual partners and Gender Role Conflict was also observed for sons reported scores ($r=-.27$, $p<.05$). Additionally, sons' report of past sexual partners had a negative correlation with sons' reported Emotional Eating ($r=-.30$, $p<.05$).

Actor Partner Interaction Mediation Model

A multilevel APIM revealed that Everyday Discrimination scores affected BMI. In model 1, only sons had a significant actor effect from discrimination to obesity. Sons who reported higher Everyday Discrimination scores were heavier. All other predictor variables and controls were not significant, however, a moderately significant relationship existed between fathers' Gender Role Conflict ($\beta=-0.016$, $p=.06$, Table 4) and employment ($\beta=2.63$, $p=.06$ Table, 4) on sons' weight status. The null model likelihood test was significant ($p=0.01$, Table, 4), suggesting the specified model, with a

heterogeneous compound symmetry covariance matrix provided a better fit than the null assumption of a diagonal one.

Model 2 tested the relationship between Gender Role Conflict and Everyday Discrimination on Emotional Eating. The full results of the model 2 are reported in Table 5. For both fathers and sons, the APIM model demonstrated that a positive relationship existed between reported Everyday Discrimination and Emotional Eating, with higher reported Everyday Discrimination predicting higher Emotional Eating for both fathers and sons (i.e. significant actor effect for fathers and sons.) Additionally, Gender Role Conflict exhibited a significant partner effect for fathers: fathers who had sons with higher Gender Role Conflict had lower Emotional Eating. The actor effect of Gender Role Conflict scores was not significant for fathers or sons. Sexual orientation was the largest predictor of Emotional Eating in the model for sons but not fathers ($\beta=-20.29$, $p=.03$).

Table 6 presents the results of Model 3. In Model 3, Emotional Eating has a significant actor effect for both fathers and sons on BMI ($\beta=0.09$, $p<.01$, and $\beta=0.14$, $p<.001$, respectively). Strictly heterosexual fathers reported heavier BMI ($\beta=4.60$, $p=.05$). Additionally, adolescent males with more educated fathers report higher BMI scores ($\beta=2.56$, $p=.05$). Similar to Model 1, the null model likelihood test was significant ($p=.01$), suggesting the specified model, with a heterogeneous compound symmetry covariance matrix provided a better fit.

While Emotional Eating had a strong actor effect on BMI for both fathers and sons, the final model (Model 4) revealed that Emotional Eating fully mediates the association between Everyday Discrimination and BMI for only adolescent males

($\beta=0.12$, $p<0.01$, Table 7). While Gender Role Conflict correlated with both BMI and Emotional Eating, it was not significant after accounting for the other variables in the model. Similarly, sexual orientation was not significant in the model for fathers or sons. In addition, none of the control variables (paternal employment status and age) were significant.

Discussion

Current ecological models of obesity need to be expanded to address for cultural and attitudes toward about masculine gender roles (Harrison, 2011). This study adds to the current literature in two ways. First, the study examined the relationship between fathers and sons on Everyday Discrimination, Gender Role Conflict, Emotional Eating, sexual orientation and weight status. Second, within the examined literature, this study represents the first examination of the mediation effects of Emotional Eating on Everyday Discrimination and obesity specifically among African American fathers and sons.

Fathers who reported higher Gender Role Conflict scores had sons with higher Gender Role Conflict scores. However, fathers and sons significantly differed in the underlying subscales of Gender Role Conflict. Fathers scored higher on Conflict Between Work, School and Family, while sons scored higher on Need for Success Power and Control. One explanation of this relationship can be due to the measures themselves. Conflict Between Work, School and Family is mainly correlated with negative masculine ideology such as rejection of homosexuality, avoidance of femininity and traditional dominance (O'Neil, 2015). Adherence to restrictive masculinity ideologies may also explain the differences in Need for Success, Power and Control between fathers and sons. The subscale of Need for Success, Power and Control has been theorized to represent

positive masculinity in younger males (Blazina, Pisecco, & O'Neil, 2005). Therefore, taken as a whole, the difference in these scores may represent fathers' endorsement of more conservative concepts of masculinity than their sons' endorsement.

This study also provides insights into the role of sexual orientation on Gender Role Conflict, Everyday Discrimination and Emotional Eating among African-American males. For participants in this study, fathers and sons who were not strictly heterosexual reported greater Gender Role Conflict. This is consistent with the literature, as Shepard (2001) reported that homosexual African American men had higher Gender Role Conflict than other groups. Additionally, the fathers within this study who were not strictly heterosexual reported higher Everyday Discrimination. The perception of masculinity is considered a fragile concept that is under constant threats and homosexuality is considered a threat to masculine capital (Rich, 2014; de Visser, Smith, & McDonnell, 2009). Therefore not strictly heterosexual African American males may experience more Gender Role Conflict because of a loss of masculine capital due to multiple forms of discriminations; homophobia within their racial group, and racism within the dominate European American LGBT community (Shephard, 2001).

The relationship between Everyday Discrimination and obesity has been reported in other studies (Cozier, 2009; Hunte, 2009). This study expanded upon previous work by investigating how discrimination affects weigh status. The findings of this study support the Pathway of Coping with Racism Model (Brondolo, 2009) and the Contextual Paradigm of Gender Role Conflict (O'Neil, 2015) among African-American males. The final regression model suggests that Emotional Eating fully mediates the relationship between Everyday Discrimination and obesity. Adolescent males who reported higher

Everyday Discrimination demonstrated more Emotional Eating, which leads to higher BMIs. Theoretically, this implies as African American adolescent males experience more occurrences of discrimination-based stress due to racial and social structures of oppression, they turn to emotional eating as a coping mechanism, which in turn contributes to weight gain and obesity. A similar relationship existed for fathers, however because the association between Everyday Discrimination and weight status was not significant, the final model suggests that Everyday Discrimination has an indirect effect on weight status through Emotional Eating.

An important finding of this study is the effect of sons had on their fathers emotional eating. Sons' Everyday Discrimination scores pointed towards a moderately significant trend on fathers' Emotional Eating. This means that as sons reported greater incidences of Everyday Discrimination, fathers had higher Emotional Eating scores. Similarly, an interesting and unexpected finding is that Gender Role Conflict had a significant indirect partner effect on fathers. Fathers whose sons' had higher Gender Role Conflict reported lower Emotional Eating Scores. It is important to note that the partner effect of sons' Gender Role Conflict is independent of the actor effect of the fathers' Gender Role Conflict. While there has been a call for greater investigation of fathers' impact on sons' Gender Role Conflict (O'Neil, 2015), this finding suggest a bidirectional effect of Gender Role Conflict in which sons' Gender Role Conflict may have an impact on fathers coping mechanism. One theory to explain sons' partner effect on fathers' emotional eating is that fathers may experience secondary trauma by witnessing or hearing about their sons' experience with racial discrimination and harassment due to not conforming to gender norms and then use emotional eating as a maladaptive coping

mechanism. The overall findings support the ideas that gender and race matters in obesity studies because gender-based and race-based discrimination is linked to maladaptive stress related coping mechanism, which may lead to unhealthy weight gain.

The largest predictor of Emotional Eating was sexual orientation among adolescent males. Again, this had an indirect effect on weight status. In this study, not strictly heterosexual adolescent males reported higher use of Emotional Eating. This finding can be interpreted within the context of the Pathways to Coping and the Gender Role Conflict Paradigm as both highlight the negative effects of kyriarchal domination. Within the Pathways of Coping with Racism model and the Gender Role Conflict Contextual Paradigm, being a sexual minority can be an additional source of discrimination for not strictly heterosexual adolescent males as it challenges the rigid concepts of the heteronormative patriarchy.

While the findings of this study open areas of investigation and support the findings of previous studies, the generalizability of these findings is limited to similar populations due the non-randomization of participant sampling. It would be useful to examine if the relationship found in this study is present in other populations, varying across ages, genders, sexual identities and ethnicities. Additionally, cross-sectional studies only provide a snapshot of time. While mediation models are theoretically causal, there are alternative hypotheses to the relationship between Everyday Discrimination, Gender Role Conflict, Emotional Eating and weight status. It is possible that overweight males experience greater Gender Role Conflict because they do not meet the physical ideals of masculinity, as well as they may experience more Everyday Discrimination because their weight size. Under these conditions, they may cause Emotional Eating to

cope with the external and internal discrimination of being overweight. This alternate hypothesis does not nullify the application of the Pathways of Coping Model or the Gender Conflict Contextual Paradigm in the study of obesity. It supports a cyclical relationship between the variables. Future studies should investigate causality in longitudinal studies.

Conclusion

The current research provided evidence to expand the ecological model of childhood obesity to include discrimination as a contextual factor that increases obesity rates in African American adolescent males. This study demonstrated that emotional eating could be linked to the discrimination that African American men experience as a consequence of racism. The results of this study show that this relationship between discrimination-based stress and obesity can be found in African American men as early in life as 15 years old. Therefore, future obesity interventions among African American adolescents and adult males should address not only what men are eating, but also why men are eating. Moreover, the results of this study provide evidence that sons' experiences with gender role conflict and discrimination affects fathers' emotional eating. This suggests that an appropriate intervention for obesity in fathers should include their sons and focus on helping both fathers and sons acquire the necessary skills to cope with negative emotions surrounding discrimination and gender role conflict. Taken as a whole, the findings of the current study increase our understanding of gender role conflict, discrimination, emotional eating and weight status of African American men in the context of father-son dyads.

Chapter V: Significance and Future Direction

“It is easier to build strong children than to repair broken men.” -Frederick Douglass

The global impact of any research into the pathways of obesity cannot be understated. While the information on obesity has proliferated over the past three decades, no country in the world has heralded any national success stories in reducing the prevalence of obesity (Ng, 2014). As the etiology of adolescent obesity is multifactorial, every finding leads the science step closer to turning the tide on this pandemic. In addition to the biological components of the disease, social and psychological factors increase the risk of obesity. The current theoretical frameworks must expand to address the complex interaction of risk factors. Many investigators have recently turned to paternal influences on obesity. Previous work in adolescent obesity has reported that fathers have an impact on genetic, political-economic, socio-behavioral and environmental risk factors for obesity. Within the United States, African American adolescent males have one of the largest increases in obesity. The purpose of this dissertation was to examine the influences of fathers on adolescent obesity in African American males. To accomplish this goal, three different studies were conducted, including a systematic literature review.

The purpose of the systematic review was to explore and describe the previous research that focused on paternal influences on adolescent weight status. The goal of the first and second study was to understand the factors related to paternal nurturing and how paternal nurturing affects obesity in African American and Caribbean Black adolescents. A secondary data analysis was conducted using the National Survey of American Life-Adolescent dataset to achieve this goal. The third study included in this dissertation

investigated the function of gender role conflict and everyday discrimination on adolescent obesity in solely African American father-son dyads. This was completed using an Actor Partner Interaction Mediation Model within a respondent driven sample population. As the findings of the previously mentioned studies are explained in depth in the earlier chapters, this chapter will review the results but focus more on the overall insights that this dissertation provides into understanding adolescent obesity in the context of the lives of African American males and future areas of research within this population. In addition to the insights of father-son relationships, the outcomes of this dissertation can be categorized into two perspectives; the factors associated with health weight status (nurturing paternal relationships) and factors associated with unhealthy weight status (everyday discrimination and emotional eating).

Significant Findings

Paternal-Child Relationships

The significant findings throughout this dissertation have elucidated the lives of African American adolescent males. Contrary to the depiction of the absentee father, according to the finding of Chapter 2 and 3, most African American and Caribbean Black adolescent males reported a father figure in their lives. This father figure could be their biological father or a social father. African American adolescent males reported better relationships with their biological fathers than African American adolescent females. However, the results did not find a gender difference in maternal relationships. This supports the idea that African American father and sons have a unique same-gender relationship that is not present in other parent-child dyads.

Interestingly, biological fathers and social fathers did not significantly differ in reported nurturing relationships. Thus, social fathers fulfill a similar emotional role as biological fathers for African American and Caribbean Black adolescent males. Within the dyadic study presented in Chapter 4, African American fathers and sons showed a correlation on numerous factors. Similar to previous studies, the correlation in paternal and child BMI meant that overweight/obese fathers in this study had heavier sons. Additionally, fathers with high gender role conflict also had sons with high gender role conflict. However, the causes of the gender role conflict were different. African American sons reported higher Need for Success, Power, and Control than fathers did. Unexpectedly, in this study higher gender role conflict in sons correlated with lower emotional eating in fathers. At first this relationship may seem like counterintuitive, however previous studies have reported a relationship between gender role conflict and eating behaviors. Levant and Wimer report that among college age males, higher Success Power and Control scores related to higher healthy eating scores (Levant & Wimer, 2014). Gordon et al. (2013) also found that increase in status seeking behaviors “striving toward competition, success and power” related to positive eating behaviors (Gordon et al., 2013, pg.2). While O’Neil (2015) provides an abundant amount of evidence that gender role conflict has negative impact on men’s health outcome, the research by Levant and Wimer’s, and Gordon et al. on the role of Success, Power, and Control along with the findings of this dissertation point in the direction that the impact of gender role conflict may have a protective or negative effect depending on the situational context. Using the findings from this dissertation in the context of the Pathways to Coping framework, a plausible theory is that African American adolescent males who have higher gender role

conflict are more likely to conform to heteronormative concepts of masculinity. Since their sons are not deviating from gender scripts, African Americans fathers do not experience indirect gender stress and therefore do not turn to eating as a coping mechanism. From the other perspective, sons who have lower gender role conflict may have other positive health seeking behaviors yet they are deviating from traditional gender scripts. This deviation from gender norms causes the sons to face discrimination and their fathers experience stress from being unable to help them, which they then cope with through emotional eating. This framework can also be applied to the moderate relationship between a son's reports of everyday discrimination and a father's emotional eating. Fathers may experience stress as a result of seeing their sons experience with racism, which leads to greater emotional eating. Thus, while the initial objective of this dissertation was to investigate the role of fathers on sons' BMI, the results of this dissertation support a bi-directional effect in which son's experience actually affect the father's weight status.

Nurturing Fathering

Better nurturing father-son relationships were associated with healthier BMI in adolescent African American and Caribbean Black males. Similar to previous studies on father-child relationships in African American populations, income did not predict nurturing-father child relationships. Using the National Longitudinal Surveys of Youth, Bulanda (2010) reports that income does not affect levels of respect and affection that African American adolescents have for their fathers. The findings of Chapter 2 expands the earlier work of Bulanda as income did not predict father-son nurturing relationships in this study either, however, perceptions of income sufficiency did predict father-son

relationships. This may be an adaption of the provider role that fathers have taken within the Black American community. The concept of provider implies that Black fathers have power over their ability to gather resources for their families. As McAdoo (1993) pointed out, Black fathers have little control over the economic systems that would allow them to fulfill the role of providers. Therefore, the paternal concept of provider in the African American community may actually represent resourcefulness, the ability to use available means to meet the needs within the family.

Nurturing father-son relationship was not a significant predictor of obesity once other demographic factors were accounted in household where the biological fathers were present. However, the association between nurturing father-son relationship and obesity existed in kinship households. This phenomenon can also be interpreted using the Pathway of Coping Model. Brondolo (2009) posits that one option to coping with a negative emotional event is to seek social support. Black American adolescent males who face daily discrimination may turn to their father figure as a positive coping mechanism. Therefore, one possible explanation of the findings of Chapter 3 is that the presence of a biological father does not negate the presence of a social father, however the report of social fathers as sons' primary father-figure implies that the biological father is transitory or absent in their lives. Therefore, sons may seek social support through social fathers if they have a negative relationship with their biological father, but sons with negative relationships with the social fathers do not have their biological fathers as a buffer. In a longitudinal study of father-figure flow, African Americans who lost their social father were more likely to be father-less compared to African American children who lost their

biological father (King, 2010). Therefore, a negative relationship with a social father may represent a loss of a social safety net that affects health.

Discrimination

Previous researchers have theorized that linked between experienced discrimination and higher weight status is through physiological pathways (Chambers, 2004; Cozier, 2009; Vines, 2007). However, this study took a different approach and examined possible psychosocial behaviors mediators that may cause higher weight status. In this study, greater perceived incidences of race-based discrimination were associated with higher BMIs in African American fathers and son. Yet the pathways from everyday discrimination to obesity differed for fathers and sons. Everyday discrimination had an indirect effect on obesity through emotional eating in African American fathers. For fathers, gender role conflict had a moderately significant actor effect and a significant partner effect. It is unclear why this relationship exists, however a possible explanation may be related to the role of discrimination from deviation of gender norms. Fathers may experience more discrimination as they diverge away from cultural gender norms and cope with their experience through emotional eating. The relationship between emotional eating and gender role conflict was absent in sons. The lack of a direct relationship between gender role conflict and emotional eating may be attributed to generational differences. Indeed, older fathers emotionally ate more than younger fathers did. For African American sons' emotional eating fully mediated the relationship between discrimination and weight status. Lastly, the strongest predictor of emotional eating in African American adolescent was sexual orientation. Combined, the results of this study imply that African American men, adults and adolescents are under societal stresses.

These structural forms of stress may come from perceived racial discrimination, gender role conflict and heterosexism.

Limitations and Strengths

A critical evaluation of the findings of this dissertation also includes a discussion of the methodological limitations. One limitation is the generalizability of the results. The results of this study are limited to populations that resemble the participants, which confines the application of the findings based on age, race, ethnicity and gender. Since Study 3 used participant driven sampling, the results reflect the experiences of the African American fathers and sons within that study. Therefore, generalizability is limited to fathers and sons who have similar demographic characteristics and results would not be applicable to father-son dyads from different ethnicities. However, the findings of Study 1 and 2 have greater generalizability. The National Survey of American Life-Adolescent is a nationally representative dataset. Therefore, the results are generalizable to the larger African American and Caribbean Black population within the same age range in the United States. Another limitation is due to the cross-sectional design of the studies within this dissertation. While the variables in this study are statistically predictive, the results do not imply real world causality. Theory and previous research support the directional claims of this dissertation, however longitudinal studies are needed to determine if the independent variables cause changes in the dependent variables.

Implications, Contributions and Recommendations

Theoretical/Methodological

Chapter 1 and 4 presented the argument that the current theoretical model of obesity had specific gaps in relation to the study of protective and risk factors in African American adolescent males. However, instead of disproving their validity among this population, this dissertation used the concept of theoretical elaboration to expand the Ecological Model of Childhood Obesity (Davison and Birch, 2001) and the Six C's model (Harrison et al., 2011). The Seven Models of Paternal Contribution to Adolescent Obesity is a supplement model created based on previous parental studies. The findings of this dissertation support the theoretical framework of the Ecological Model of Childhood Obesity and the Six C's which states that adolescent obesity is the result of macro, meso and micro factors. However, the Seven Models of Paternal Contribution to Adolescent Obesity expands those ecological models to include the role of social fathers, discrimination and a bi-directional effect of son's gender role conflict on father's weight status. The impact of nurturing father relationship with social fathers on adolescent obesity in both African American and Caribbean Black males also has some methodological repercussions. As approximately one third of African American and Caribbean Black adolescent males are in kinship households, studies of paternal effects on obesity cannot solely focus on biological fathers without invalidating the lived experiences of a significant amount of Black American men. Thus future research should include social fathers in adolescent obesity research.

Policy

This dissertation serves as supporting evidence for the continuation of national and local policy initiatives that promote the involvement of fathers-figures in the lives of Black American males as well as a critique against policies that are structural barriers to

healthy Black families. Three positive policy initiatives that are relevant to this study are: a) Healthy People 2020, b) the White House's My Brother's Keeper initiative and c) the Responsible Fatherhood Program. The findings of this dissertation are in the vein of research that is crucial to addressing Goal 2 of Healthy People 2020, which seeks to eliminate health disparities based on race, gender and ethnicity (Healthy People 2020, 2015). Furthermore, this research is timely as "Adolescent Health" is a new topic that did not exist in previous Healthy People iterations. Specifically, the results of Study 1 and 2 opens areas of interventions for Healthy People 2020 Adolescent Health Goal 3; "Increase the proportion of adolescents who are connected to a parent or other positive adult caregiver" (Healthy People 2020, 2015). Another policy example is the My Brother's Keeper initiative, which is a national program that has been implemented in over 200 communities in 43 states. As closeness with social fathers predicted lower BMI in adolescent males, programs that promote mentorship among men of color such as the White House initiative My Brother's Keeper may have an indirect health benefit. Since income sufficiency predicted positive paternal-child relationships, the findings of this dissertation support the mission of programs that promote employment training and advancement for Black fathers such as the Responsible Fathering Program and other affirmative action programs.

This dissertation also serves as support for the critique of prison-industrial complex and policies such as mandatory sentences for non-violent crimes within the United States. African American men are arrested and imprisoned at a disproportionate rate compared to European American men. Approximately 50% of African American men will be arrested before they become 23 years old and 1 in 3 will be imprisoned in

their lifetime, even though European Americans commit crime at a similar rate (Brame, Bushway, Paternoster, & Turner, 2014; Elliot, 1994; Mauer, 2011). The rate of imprisonment has detrimental effects on the African American family. Over half of African American prisoners are fathers, and African American children are seven and a half times more likely to have a parent in prison than European American children (Glaze & Maruschak, 2010). Previous arrests and imprisonments create social stigma and a loss of human capital that leads to higher unemployment rates (Apel, 2010). Since paternal-child relationship was associated with income sufficiency, the unfair judicial practices that imprison African American men at higher rates may have a longer impact on African American families beyond the initial separation of fathers from their children. Collectively, the results of this dissertation has potential impact beyond health research policies and speaks to the larger institutional inequalities that hinder the social and physical health of Black American males and their families.

Interventional

The pathways of obesity in African American males are multifactorial, including discrimination and relationships with father figures. Given the aforementioned limitations, the findings of this dissertation still provide potential biopsychosocial and biobehavioral avenues for obesity interventions. One of the foci of this study was the maladaptive coping mechanism of emotional eating. Since not all participants reported emotional eating, African American men may have created alternative coping mechanisms to deal with discrimination-induced stress. Exploratory research should examine healthy coping mechanisms that exist within the African American community. The findings of this study provide the foundation for innovative approaches involving

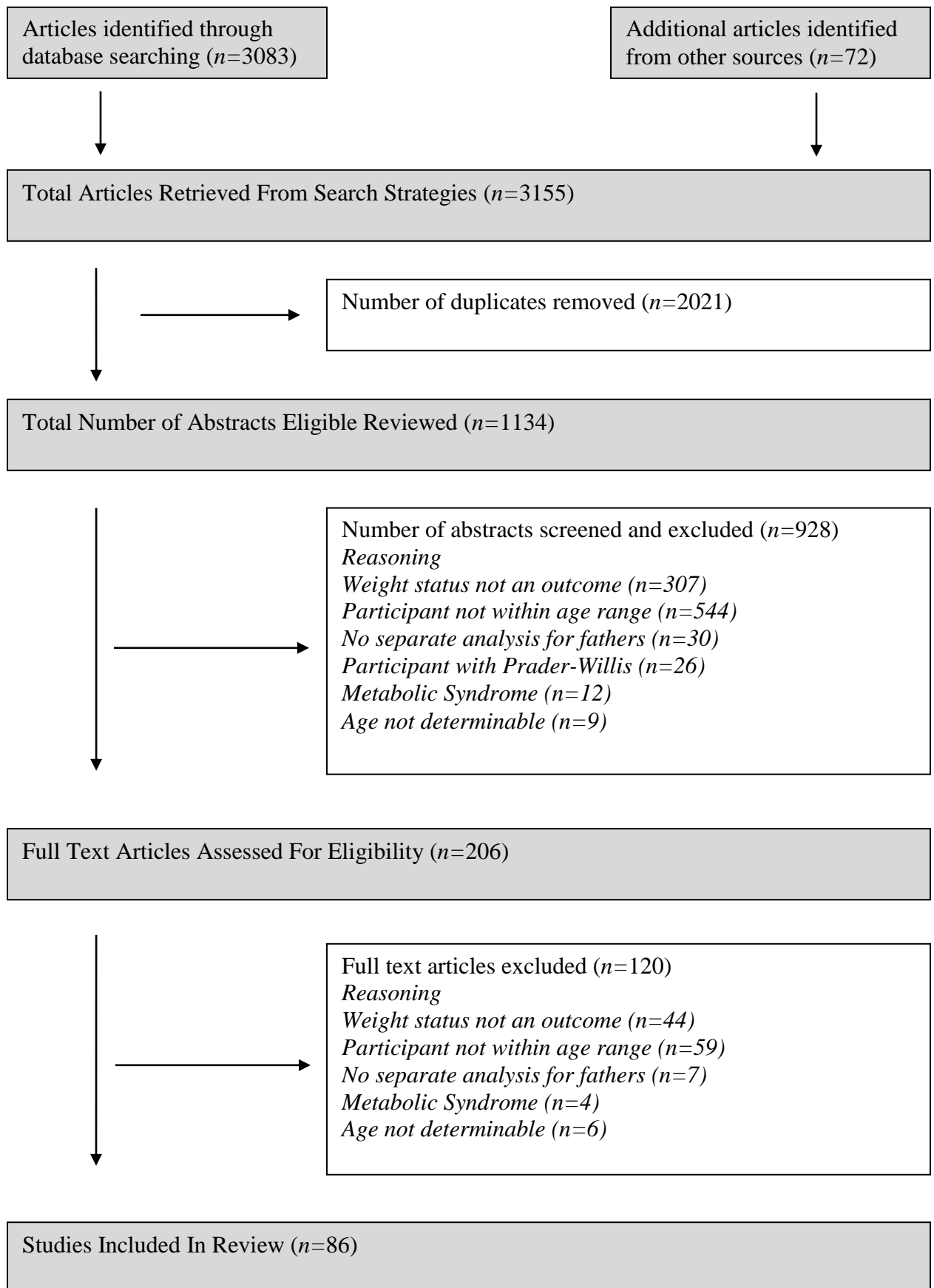
families and social networks that may enhance health promotion structures and behaviors among men of color. One possible strength that adolescent males identified was nurturing relationships with social fathers. In qualitative studies, both older and younger African American men identify intergenerational role modeling and mentoring as a strength within the African American community to change negative health outcomes (Grande, 2013; Ornelas, 2009). Future interventions could use the relationship between fathers, social fathers and adolescent males as a mechanism to promote behavioral changes. Intervention messaging should be tailored around perception of discrimination, cross-generational communication and emotional eating. Contrary to traditional face-to-face interventions, newer multi-generational interventions could incorporate mobile health and other technologies such as text based daily diaries, online photo journaling, or mobile applications to address discrimination-based stress (Steinhubl, 2015). These interventions can included conversations between father-figures and sons on how to identify, confront and cope with race and gender based discrimination. An alternative intervention option would address the mediating effects of emotional eating. Fathers and sons would learn to identify eating habits and develop healthy alternatives to emotional eating. The use of m-health applications would provide real time response and support between father figures, sons and interventionists (Steinhubl, 2015). Both possible interventions would focus on father-son empowerment as an agent of change and use of cultural and family values to promote intergenerational health activities

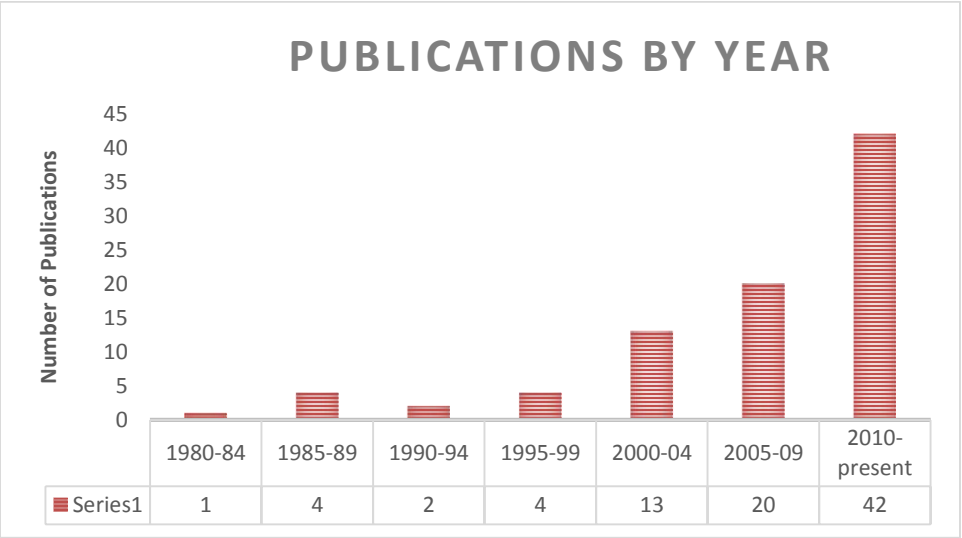
Conclusion

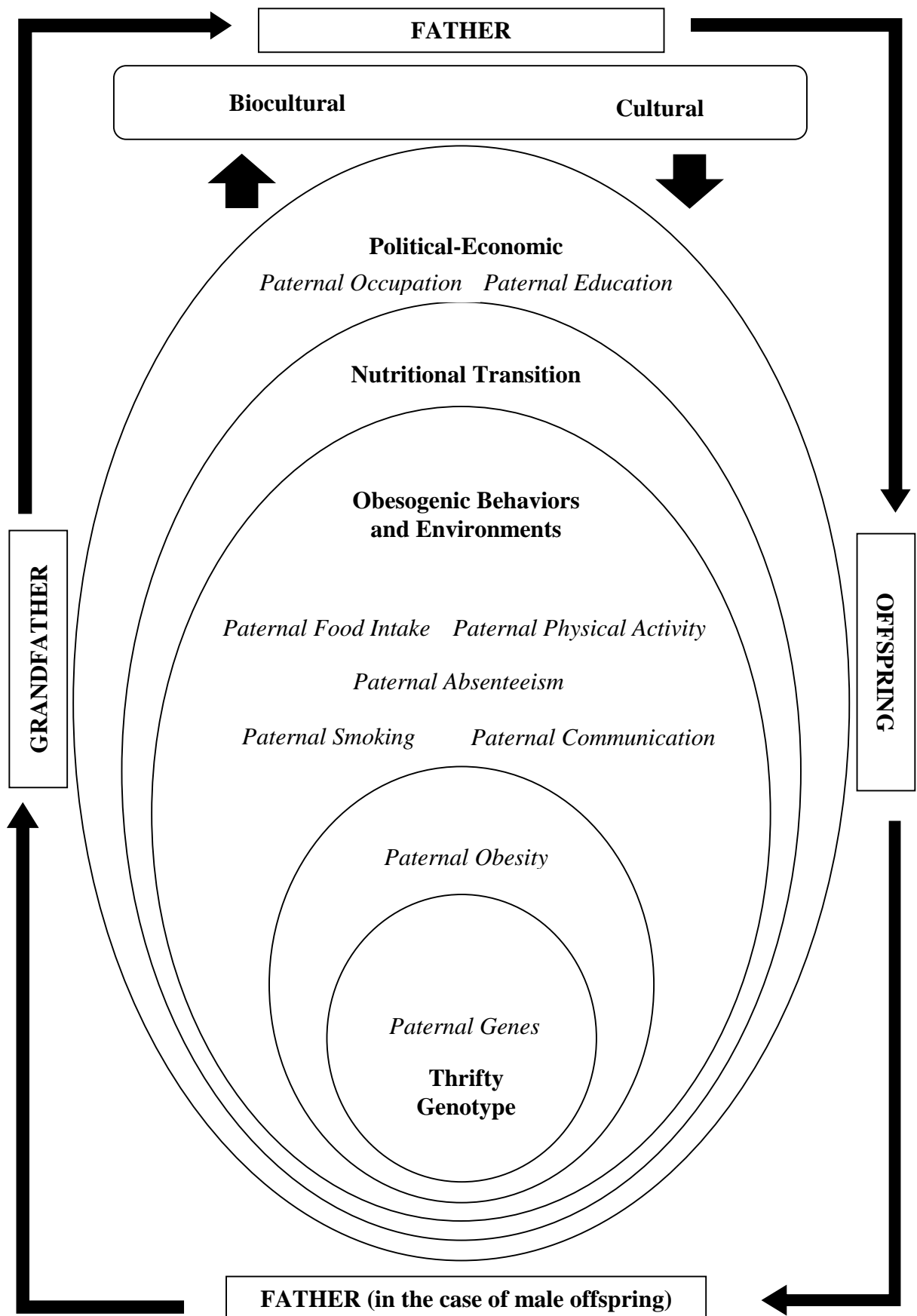
The relationship between men in general, and the specific relationship between father figures and young men are areas that are open to future exploration. While this

dissertation provided insight into some fundamental questions about nurturing relationship between father figures and sons, gender role conflict, coping with everyday discrimination and obesity, there are many more questions in need of answers. Some of which have been posed in the limitations of this dissertation, such as the application of the findings to other ethnic groups and ages. The reports of the children in this dissertation challenge the dominate pathology of the “fatherless” child in the Black community. Instead, Black father figures are present in their children’s lives and there is a mutual ebb and flow of influence on each other’s health. Though the goal of a dissertation is to contribute to the body of knowledge, this dissertation was not conducted solely as an academic venture. The desire of this dissertation was to elucidate the lives of Black American fathers and sons so that future researchers, clinicians, interventionists and policymakers would use these results to support the formation and empowerment of father-figure networks that work together in creating positive health outcomes throughout the African Diaspora.

Tables and Figures for Chapter I







Tables for Chapter II

Table 1

Mean Score of Paternal and Maternal Closeness Scores and Sociodemographic Variables by Ethnicity and Gender

Predictor Variables	<i>African American</i>		<i>Caribbean Black</i>	
	$\bar{y}_w / SE(\bar{y}_w)$	$CI_{95\%}(\bar{y}_w)$	$\bar{y}_w / SE(\bar{y}_w)$	$CI_{95\%}(\bar{y}_w)$
Paternal Closeness scores				
<i>Male</i>	24.27 / .74	22.76-25.78	27.15 / 0.82	25.48-28.82
<i>Female</i>	27.62 / .64	26.32-28.93	29.10 / 1.69	25.67-32.53
Maternal Closeness scores				
<i>Male</i>	21.87 / .53	20.80-22.93	25.23 / 0.49	24.25-26.21
<i>Female</i>	23.00 / .73	21.52-24.47	25.88 / 1.74	22.35-29.41
Age years				
<i>Male</i>	14.91 / .11	14.68-15.13	14.93 / 0.16	14.62-15.26
<i>Female</i>	14.89 / .13	14.61-15.17	15.62 / 0.12	15.76-15.87
Household Income dollars				
<i>Male</i>	43,133 / 3,865	35,320-50,946	43,294 / 3,039	37,151-49,436
<i>Female</i>	47,429 / 3,764	36,821-55,036	45,411 / 3,049	39,248-51,574

Table 2

Report of Income Sufficiency by Ethnicity and Gender

African American		Frequency	Weighted Frequency	SD Wgt Freq	Percent	SE Percent
Male	<i>More Than Needed</i>	24	38.56	7.78	7.24	1.35
	<i>Just Enough</i>	156	227.66	23.37	42.69	2.48
	<i>Not Enough</i>	15	17.43	5.59	3.27	1.02
	<i>Total</i>	195	283.67	27.59	53.20	2.72
Female	<i>More Than Needed</i>	21	31.46	8.99	5.90	1.50
	<i>Just Enough</i>	150	190.59	20.64	35.74	2.70
	<i>Not Enough</i>	20	27.54	6.55	5.16	1.20
	<i>Total</i>	191	249.59	25.50	46.80	2.73
Caribbean Black		Frequency	Weighted Frequency	SD Wgt Freq	Percent	SE Percent
Male	<i>More Than Needed</i>	9	1.17	0.66	2.62	1.37
	<i>Just Enough</i>	78	12.54	1.29	28.02	2.01
	<i>Not Enough</i>	13	6.14	0.83	13.72	2.05
	<i>Total</i>	100	19.85	1.91	44.37	2.87
Female	<i>More Than Needed</i>	11	1.37	0.28	3.06	0.57
	<i>Just Enough</i>	77	21.54	1.82	48.13	2.60
	<i>Not Enough</i>	18	1.99	0.48	4.44	1.15
	<i>Total</i>	106	24.89	1.93	55.63	2.87

Table 3

Initial Design-Based Bivariate Regression Analysis Results Assessing Potential Predictors of Paternal-Child Closeness for NSAL-Adolescent Sample

Predictor Variables	Parameter Estimate (Linearized SE)	Test Statistic	p-value
Age (n=569)	0.64 (.31)	t(40)=2.08	0.04
Gender (n=569)		Wald	<.01
		T(1,40)=18.14	
<i>Male</i>	- ^a	-	-
<i>Female</i>	3.29(.77)	t(40)=4.26	<.01
Ethnicity (n=569)		Wald T(1,40)=3.04	0.09
<i>Caribbean Black</i>	-	-	-
<i>African American</i>	-2.37(1.36)	t(40)=-1.74	0.09
Household Income (n=566)	<-.01, (<.01)	t(40)=-1.17	0.25
Perceived Income Sufficiency (n=565)		Wald T(2, 39)=7.34	<.01
<i>Not Enough</i>	-	-	-
<i>Just Enough</i>	-5.51(1.64)	-3.36	<.01
<i>More Than Needed</i>	-6.81(1.87)	-3.63	<.01

^a—Denotes reference category

Table 4

Estimates of Regression Parameters in Final Model for Paternal Closeness

Parameter	Estimate	Linearized <i>SE</i>	t-statistic	<i>p</i> -value	CI 95%	$d^2(\hat{B})$
Intercept	21.23	3.86	5.50	<.01	(13.42, 29.03)	1.53
Gender						
<i>Male</i>	^a _	-	-	-	-	-
<i>Female</i>	3.14	0.78	4.04	<.01	(1.56,4.71)	2.00
Age	0.54	0.28	1.96	0.06	(-.01,1.10)	1.98
Income Sufficiency						
<i>Not Enough</i>	-	-	-	-	-	-
<i>Just Enough</i>	-5.13	1.58	-3.26	<.01	(-8.32, -1.95)	2.76
<i>More than Enough</i>	-6.34	1.75	-3.62	<.01	(-9.88,-2.80)	2.20

^a—Denotes reference category

Notes ($n=565$) $R^2=.08$, $F(4,37)=8.42$ $p<.01$

Table 5

Estimates of Regression Parameters in Final Model for Paternal Closeness for Only Adolescent Males

Parameter	Estimate	Linearized <i>SE</i>	t-statistic	<i>p</i> -value	CI 95%	$d^2(\widehat{B})$
Intercept	18.53	6.09	3.04	<.01	(6.22,30.84)	3.46
Ethnicity						
<i>African American</i>	-1.10	1.16	-0.94	0.35	(-3.46,1.26)	1.11
<i>Caribbean Black</i>	^a -	-	-	-	-	-
Age	0.96	0.40	2.43	0.02	(0.16,1.76)	4.03
Household Income	<.01	<.01	-1.02	0.31	Contains zero	3.82
Income Sufficiency						
<i>Not Enough</i>	-	-	-	-	-	-
<i>Just Enough</i>	-7.42	2.71	-2.73	<.01	(-12.92,-1.93)	6.92
<i>More than Enough</i>	-8.56	2.83	-3.02	<.01	(-14.29,-2.84)	5.20

^a—Denotes reference category

Notes (*n*=283) Adjusted R^2 =.10, $F(5,36)$ =8.64 p <.01

Tables for Chapter III

Table 1

Weighted Frequency of BMI, Paternal Closeness, Ethnicity, and Afterschool Sport in Father Present and Male Kinship Black Adolescent Male Households

	<i>Father Present Households</i>					<i>Male Kinship Households</i>				
	n (%)^a	SE	95% CI	DEFF		n (%)^a	SE	95% CI	DEFF	
BMI Category										
<i>Underweight</i>	3 (1.14)	0.70	(0.00,2.55)	1.24		1 (0.17)	0.12	(0.00,0.37)	0.17	
<i>Healthy Weight</i>	187(60.76)	3.30	(54.09,67.42)	1.34		94(68.34)	4.95	(53.33,78.35)	1.05	
<i>Overweight</i>	54 (18.89)	2.60	(13.63,24.15)	1.45		14(10.90)	3.19	(4.44,17.35)	1.41	
<i>Obese</i>	54 (19.22)	3.42	(12.31,26.12)	2.23		27(20.64)	3.50	(13.57,27.71)	1.21	
Paternal Closeness										
<i>Excellent</i>	117(46.13)	3.89	(38.26,54.00)	1.70		57(49.17)	4.86	(39.32,59.01)	1.15	
<i>Good</i>	119(39.90)	3.45	(32.92,46.89)	1.19		42(32.09)	3.73	(24.54,39.64)	0.95	
<i>Fair</i>	46(12.47)	2.98	(6.44,18.51)	2.30		21(15.77)	3.36	(8.95,22.58)	1.09	
<i>Poor</i>	5(1.49)	0.86	(0.00,3.23)	1.43		5(2.98)	1.56	(0.00,6.13)	1.17	
Ethnicity										
<i>Afr. American</i>	197(93.43)	0.81	(48.41,60.31)	1.77		104(92.88)	1.42	(90.02,95.74)	1.01	
<i>Carib. Black</i>	101(6.57)	0.81	(2.96,4.68)	0.25		32(7.12)	1.42	(4.26,9.99)	0.38	
Sports hours										
<i>None</i>	72 (27.11)	3.25	(20.54,33.68)	1.88		29(21.20)	3.94	(13.23,29.17)	2.13	
<i>1 or less</i>	29 (9.78)	1.22	(7.31,12.26)	0.48		12(10.32)	3.07	(4.13,16.52)	1.49	
<i>2</i>	45 (14.62)	2.62	(9.32,19.92)	1.74		26(16.83)	3.41	(9.94, 23.72)	1.64	
<i>3-4</i>	49 (13.35)	2.73	(7.82,18.88)	1.56		25(19.35)	4.12	(11.02, 27.68)	1.19	
<i>5+</i>	102(35.13)	4.81	(25.42,44.84)	2.77		44(32.30)	4.68	(22.83,41.77)	1.28	

^a weighted percentage

Table 2

Initial Design Based Bivariate Regression Analysis Results Assessing Potential Predictors of BMI for Black American Adolescent Males in the National Survey of American Life Adolescence

Predictor Variable	Parameter Estimate (Linearized SE)	Test Statistics	p-value
Age (n=487)	15.60 (3.10)	2.68	0.01
Household Income (n=485)	<0.01(<0.01)	0.94	0.35
Sports (n=486)	0.13(0.20)	0.65	0.52
Paternal Closeness (n=394)			
<i>Excellent</i>	-3.58(1.74)	-2.05	0.05
<i>Good</i>	-4.57(1.59)	-2.88	<0.01
<i>Fair</i>	-4.40(1.78)	-2.47	0.02
<i>Poor</i> ^a	-	-	-
Household Type (n=487)			
<i>Father-present</i> ^b (n=485)	-1.06(0.89)	-1.19	4.17
<i>Male Kinship</i>	-1.39(0.87)	-1.60	3.26
Ethnicity (n=487)			
<i>African American</i>	0.71(0.69)	1.03	0.31
<i>Caribbean Black</i> ^a	-	-	-

^a represents reference group

^b reference group of household which males do not report any male role model

Table 3

Design-Based Estimates of Regression Parameters in Main Model for BMI among Black American Adolescent Males in Father Present Households

Predictor Variable	Est	SE	t-statistic(df)	p-value	95% CI	d²(\hat{B})
Age	0.73	0.28	2.60(40)	0.01	0.16,1.29	5.41
Household Income	0.00	0.00	1.41(40)	0.17	<- 0.01,<0.01	10.89
Sports	0.15	0.27	0.55(40)	0.59	-0.40,0.69	7.20
Ethnicity						
<i>African American</i>	-0.81	0.55	-1.48(40)	0.15	-1.91,0.29	0.74
<i>Caribbean Black</i>	- ^a	-	-	-	-	-
Paternal Closeness Scores						
<i>Excellent</i>	-0.53	2.02	-0.26(40)	0.79	-4.61,3.55	2.44
<i>Good</i>	-1.99	1.91	-1.04(40)	0.31	-5.85,1.88	2.18
<i>Fair</i>	-1.67	2.18	-0.77(40)	0.45	-6.09,2.74	2.64
<i>Poor</i>	-	-	-	-	-	-

^a represent reference groups

Table 4

Design-Based Estimates of Regression Parameters in Main Model for BMI among Black American Adolescent Males in Male Kinship Households

Predictor Variable	Est	SE	t- statistic(df)	p-value	95% CI	d²(\hat{B})
Age	0.71	0.38	1.85(15)	0.07	-0.07,1.48	12.40
Household Income	0.00	0.00	-0.94(15)	0.36	-0.01, 0.01	5.16
Sports	0.09	0.27	0.34(15)	0.73	-0.46,0.64	7.51
Ethnicity						
<i>African American</i>	2.28	2.33	0.98(15)	0.33	-2.43,6.98	15.82
<i>Caribbean Black</i>	- ^a	-	-	-	-	-
Paternal Closeness Scores						
<i>Excellent</i>	-6.36	1.57	-4.04(15)	<.01	-9.54,-3.18	2.92
<i>Good</i>	-6.98	1.27	-5.49(15)	<.01	-9.55,-3.18	1.79
<i>Fair</i>	-7.61	1.67	-4.56(15)	<.01	-9.55,-4.41	2.84
<i>Poor</i>	- ^a	-	-	-	-	-

^a represent reference groups

Tables for Chapter IV

Table 6

Distribution of Demographic Characteristics of the Participants (n=118)

Variables	Fathers	Sons
	n (%)	n (%)
Age years		
15	-	11 (18.6)
16	-	8 (13.6)
17	-	16 (27.1)
18	-	11 (18.6)
19	-	13 (22.0)
30-39	18 (30.5)	-
40-49	21 (35.6)	-
50-59	17 (28.8)	-
60-69	3 (5.1)	-
Sexual Partnership		
<i>Strictly Heterosexual</i>	52 (88.1)	47 (79.7)
<i>Not Strictly Heterosexual</i>	7 (11.9)	12 (20.3)
Weight Status		
<i>Healthy Weight</i>	17 (28.8)	33 (55.9)
<i>Overweight</i>	27 (45.8)	8 (13.6)
<i>Obese</i>	15 (25.4)	18 (30.5)
Education		
9 th	-	13 (22.0)
10 th	-	5 (8.5)
11 th	-	19 (32.2)
12 th	-	11 (18.6)
<i>GED</i>	3 (5.1)	0 (0.0)
<i>High School Diploma</i>	18 (30.5)	10 (16.9)
<i>1-2 years College</i>	9 (15.3)	1 (1.7)
<i>3-4 years College</i>	11 (18.6)	-
<i>Bachelor's Degree</i>	8 (13.6)	-
<i>In/Completed Graduate Program</i>	10 (16.9)	-
Employment^a		
<i>Unemployed</i>		10(16.9)
<i>Part-time employment</i>		6(10.2)
<i>Full-time employment</i>		43(72.9)
Residential		
<i>Less than Full-time Residence</i>		16(27.1)
<i>Full-time Residence</i>		43(72.9)

^a Variable set as a between dyad variable based solely on father's response.

Table 2

Means, Standard Deviations and Comparisons of Demographic and Study Variables between Fathers and Sons (n=59 dyads)

Variables	<u>Fathers</u> Mean (SD)	<u>Sons</u> Mean (SD)	 Paired t 	P Value
Everyday Discrimination	11.78 (6.71)	13.47 (6.53)	-1.33	.19
Gender Role Conflict	35.53 (14.75)	36.71 (15.07)	-0.56	.58
<i>Summative Score</i>				
<i>Restricted Affection Between Men</i>	6.47 (4.48)	6.99 (4.69)	-0.77	.44
<i>Conflict Between Work/School and Family</i>	9.63 (5.67)	7.33 (4.28)	2.80	.007
<i>Need for Success Power and Control</i>	13.32 (6.70)	16.37 (5.34)	-3.11	.003
<i>Restricted Emotionality</i>	6.10 (3.67)	7.51 (4.69)	-2.19	.03
Emotional Eating	57.69 (27.17)	56.10 (27.17)	0.34	.74
Body Mass Index	28.35 (5.96)	27.26 (8.20)	1.06	.30
Categorical BMI	0.97 (.74)	0.75 (.90)	1.79	.08

Table 3

Pearson Product Moment Correlation Among Predictors and Outcomes in African American Father-Son Dyad

	1	2	3	4	5	6	7	8	9	10
1.Father's Everyday Discrimination	1	-.10	.15	-.14	.31*	.15	-.30*	-.19	.09	-.08
2.Son's Everyday Discrimination		1	.24	.01	.14	.22	-.14	.07	.06	.27
3.Father's Gender Role Conflict			1	.40**	-.14	-.05	-.33**	-.10	-.29*	-.26*
4.Son's Gender Role Conflict				1	-.32*	.08	-.09	-.27*	-.21	-.13
5.Father's Emotional Eating					1	.02	-.22	-.04	.27*	.08
6.Son's Emotional Eating						1	-.06	-.30*	.15	.45**
7.Father's Sexuality Partnership							1	.50**	.21	.12
8.Son's Sexuality Partnership								1	.14	.06
9.Father's Body Mass Index									1	.41**
10.Son's Body Mass Index										1

**, Correlation is significant at the 0.01 level (2-tailed).

*, Correlation is significant at the 0.05 level (2-tailed).

Table 4

MODEL 1: Actor-Partner Interdependence Mediation to Determine Effect of Discrimination and Gender Role Conflict on Body Mass Index in African American Fathers and Sons (n=118)

Parameters	<u>Predictors of Father's BMI</u>		<u>Predictors of Son's BMI</u>	
	β	p	β	p
Everyday Discrimination				
<i>Actor</i>	0.17	0.18	0.42	0.02
<i>Partner</i>	0.13	0.32	0.06	0.70
Gender Role Conflict				
<i>Actor</i>	-0.10	0.11	<0.01	0.99
<i>Partner</i>	-0.02	0.75	-0.16	0.06
Age	-0.06	0.56	-0.04	0.95
Sexual Orientation	2.82	0.27	3.65	1.24
Paternal Education	0.15	0.78	0.44	0.55
Paternal Employment	0.94	0.40	2.63	0.06

Table 5

MODEL 2: Actor-Partner Interdependence Mediation to Determine Effect of Discrimination and Gender Role Conflict on Emotional Eating in African American Fathers and Sons (n=118)

Parameters	<u>Predictors of Father's Emotional Eating</u>		<u>Predictors of Son's Emotional Eating</u>	
	β	p	β	p
Everyday Discrimination				
<i>Actor</i>	1.12	0.01	1.39	0.03
<i>Partner</i>	0.86	0.07	0.55	0.35
Gender Role Conflict				
<i>Actor</i>	-0.41	0.07	0.18	0.49
<i>Partner</i>	-0.40	0.05	-0.33	0.23
Age	0.99	0.01	-0.71	0.81
Sexual Orientation	-12.44	0.19	-20.29	0.03
Paternal Education	0.51	0.77	-0.27	0.92
Paternal Employment	-6.52	0.11	4.82	0.31

Table 6

MODEL 3: Actor-Partner Interdependence Mediation to Determine Effect of Emotional Eating on Body Mass Index in African American Fathers and Sons (n=118)

Parameters	<u>Predictors of Father's BMI</u>		<u>Predictors of Son's BMI</u>	
	β	p	B	p
Emotional Eating				
<i>Actor</i>	0.09	<0.01	0.14	<0.001
<i>Partner</i>	0.03	0.24	0.03	0.39
Age	-0.14	0.11	-0.67	0.93
Sexual Orientation	4.60	0.05	3.40	0.15
Paternal Education	0.06	0.89	0.80	0.22
Paternal Employment	1.52	0.15	2.56	0.05

Table 7

MODEL 4: Actor-Partner Interdependence Mediation to Determine Effect of Discrimination and Gender Role Conflict on Obesity Accounting for Emotional Eating in African American Fathers and Sons (n=118)

Parameters	<u>Predictors of Father's</u>		<u>Predictors of Son's</u>	
	<u>BMI</u>		<u>BMI</u>	
	β	p	β	p
Everyday Discrimination				
<i>Actor</i>	0.06	0.30	0.25	0.14
<i>Partner</i>	0.03	0.82	-0.01	0.94
Gender Role Conflict				
<i>Actor</i>	-0.05	0.39	-0.02	0.80
<i>Partner</i>	<-0.01	0.94	-0.11	0.16
Emotional Eating				
<i>Actor</i>	0.08	0.04	0.12	<0.01
<i>Partner</i>	0.03	0.37	0.01	0.81
Age	0.99	0.01	-0.71	0.81
Sexual Orientation	4.20	0.10	2.07	0.10
Paternal Education	0.51	0.77	-0.27	0.92
Paternal Employment	1.34	0.24	2.07	0.12

References

- Abreu, S., Santos, R., Moreira, C., Santos, P., Mota, J., & Moreira, P. (2014). Food consumption, physical activity and socio-economic status related to BMI, waist circumference and waist to height ratio in adolescents. *Public Health Nutrition*, 1834-1849 doi: 10.1017/S1368980013001948.
- Abudayya, A., Thoresen, M., Abed, Y., & Holmboe-Ottesen, G. (2007). Overweight, stunting, and anemia are public health problems among low socioeconomic groups in school adolescents (12-15) in the North Gaza Strip. *Nutrition Research*, 762-771.
- Adamson, K., & Palkovitz, R. (2014). Theorizing about fathering: An introduction to the special issue. *Journal of Family Theory and Review*, 279-281.
- Agyemang, C., Bhopal, R., & Bruijnzeels, M. (2005). Negro, Black, Black African, African Caribbean, African American or what? Labelling African origin population in the health arena in the 21st century. *Journal of Epidemiology and Community Health*, 1014-1018.
- Al-Alkour, N., Khader, Y., Khassawneh, M., & Bawadi, H. (2011). Health-related quality of life of adolescents with overweight or obesity in the north of Jordan. *Child: Care, Health and Development*, 237-243.
- Apel, R. S. (2010). The Impact of Incarceration on Employment during the Transition to Adulthood. *Social Problems*, 448-479.
- Arnold, B., Kenardy, J., & Agras, W. S. (1995). The Emotional Eating Scale: the development of a measurement to assess coping with negative affect by eating. *International Journal Eating Disorder*, 79-90.
- Arthur, C., & Katkin, E. (2006). Making a Case for the Examination of Ethnicity of Blacks in United States Health Research. *Journal of Health Care for the Poor and Underserved*, 25-36.
- Balkau, B., Deanfield, J., Despres, J.-I., Bassand, J.-P., Fox, K., Smith, S., . . . Haffner, S. (2007). International Day for the Evaluation of Abdominal Obesity (IDEA) : A Study of Waist Circumference, Cardiovascular Disease, and Diabetes Mellitus in 168000 Primary Care Patients in 63 Countries. *Circulation*, 1942-1951.
- Baron, R. K. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51:1173-1182.
- Baskin, M., Thind, H., Affuso, O., Gary, L., LaGory, M., & Hwang, S.-S. (2013). Predictors of Moderate-to-Vigorous Physical Activity in African American Young Adolescents. *Annals of Behavioral Medicine*, 142-150.

- Beets, M., Pitetti, K., & Forlaw, L. (2007). The role of self-efficacy and referent specific social support in promoting rural adolescent girls' physical activity. *American Journal of Health Behavior*, 227-237 doi: 10.5555/ajhb.2007.31.3.227 .
- Benson, L., & Mokhtari, M. (2011). Parental employment, shared parent-child activities and childhood obesity. *Journal of Family and Economic Issues*, 233-244.
- Berge, J. M.-S. (2010). Parenting Style as a predictor of adolescent weight and weight related behaviors. *Journal of Adolescent Health* , 331-338.
- Berge, J., MacLehose, R., Loth, K., Eisenberg, M., Fulkerson, J., & Neumark-Sztainer, D. (2015). Parent-adolescent conversation about eating, physical activity and weight: prevalence across sociodemographic characteristics and associations with adolescent weight and weight-related behaviors. *Journal of Behavioral Medicine*, 122-135 doi:10.1007/s10865-014-9584-3.
- Bernard, T. S. (1996). Theoretical Integration in Criminology. *Chicago Journals*, 301-348.
- Bharati, D., Deshmukh, P., & Garg, B. (2008). Correlates of overweight and obesity among school going children of Wardha city, Central India. *Indian Journal of Medical Research*, 539-543.
- Blazina, C., Pisecco, S., & O'Neil, J. (2005). An Adaptation of the Gender Role Conflict Scale for Adolescents: Psychometric Issues and Correlates with Psychological Distress. *Psychology of Men and Masculinity*, 39-45.
- Bowman, P. (1992). Coping with Provider Role Strain: Adaptive Cultural Resources Among Black Husband-Fathers. In A. K. Hoard Burlew, W. C. Banks, H. McAdoo, & D. Azibo, *African American Psychology: Theory, Research, and Practice* (pp. 135-134). Newbury Park: Sage Publications.
- Boyd, K., Ashcraft, A., & Belgrave, F. (2006). The impact of mother-daughter and father-daughter relationships on drug refusal self-efficacy among African American adolescent girls in urban communities. *Journal of Black Psychology*, 29-42.
- Brame, R. B. (2014). Demographic Patterns of Cumulative Arrest Prevalence by Ages 18 and 23. *Crime & Delinquency*, 471-486 doi: 10.1177/0011128713514801 .
- Brisbois, T. D., & Farmer, A. P. (2012). Early markers of adult obesity: a review. *Obesity Reviews*, 347-367.
- Brondolo, E. G. (2009). Race, Racism and Health: Disparities, Mechanisms, and Interventions. *Journal of Behavioral Medicine*, 1-8 doi 10.1007/s10865-008-9190-3.

- Bryant, A., & Zimmerman, M. (2003). Role Models and Psychosocial Outcomes Among African American Adolescents. *Journal of Adolescent Research*, 36-67.
- Bucchianeri, M. E.-S. (2013). Weightism, Racism, Classism, and Sexism: Shared Forms of Harassment in Adolescents. *The Journal of Adolescent Health*, 47-53.
- Burke, V., Beilin, L. J., & Dunbar, D. (2001). Family lifestyle and parental body mass index as predictors of body mass index in Australian children: a longitudinal study. *International Journal of Obesity*, 147-157.
- Cabrera, N., Fitzgerald, H., Bradley, R., & Roggman, L. (2014). The Ecology of Father-Child Relationships: An Expanded Model. *Journal of Family Theory & Review*, 336-354.
- Caldwell, C., Sellers, R., Bernat, D., & Zimmerman, M. (2004). Racial Identity, Parental Support, and Alcohol Use in a Sample of Academically At-Risk African American High School Students. *American Journal of Community Psychology*, 71-82.
- Casey, V. A., Dwyer, J. T., Berkley, C. S., Bailey, S. M., Coleman, K. A., & Valadian, I. (1994). The distribution of body fat from childhood to adulthood in a longitudinal study population. *Annals of Human Biology*, 39-55.
- Cazenave, N. (1979). Middle-income black fathers: An analysis of the provider role. *Family Coordinator*, 583-593.
- Cella, S., Iannaccone, M., & Cotrufo, P. (2014). How perceived parental bonding affects self-concept and drive for thinness: A community-based study. *Eating Behaviors*, 110-115 doi:10.1016/j.eatbeh.2013.10.024.
- Chambers, E. T. (2004). The relationship of internalised racism to body fat distribution and insulin resistance among African adolescent youth. *Journal of National Medical Association*, 1594-1598.
- Christiansen, K., Qureshi, F., Schaible, A., Park, S., & Gittelsohn, J. (2013). Environmental Factors That Impact the Eating Behaviors of Low-Income African American Adolescent in Baltimore City. *Journal of Nutrition Education and Behavior*, 652-660 doi:10.1016/j.jneb.2013.05.009.
- Clark, R., Coleman, A., & Novak, J. (2004). Brief report: Initial psychometric properties of the everyday discrimination scale in black adolescents. *Journal of Adolescence*, 363-368 doi:10.1016/j.adolescence.2003.09.004.
- Cogburn, C. C. (2011). School-Based Racial and Gender Discrimination among African American Adolescents: Exploring Gender Variation in Frequency and Implications for Adjustment. *Race and Social Problem*, 25-37 doi:10.1007/s12552-011-9050-8.

- Cole, R., & Green, C. (2009). *The myth of the missing Black Father*. New York: Columbia University Press.
- Coley, R. (2003). Daughter-Father Relationship and Adolescent Psychosocial Functioning in Low Income African American Families. *Journal of Marriage and Family*, 867-875.
- Colpe, L., Merikangas, K., Cuthbert, B., & Bourdon, K. (2004). Guest Editorial. *International Journal of Methods in Psychiatric Research*, 193-194.
- Cooper, S. (2009). Associations Between Father-Daughter Relationship Quality and the Academic Engagment of African American Adolescent Girls: Self Esteem as a Mediator. *Journal of Black Psychology* , 495-516.
- Courtney, W. (2001). Constructions of masculinity and their influence on men's well-being: a theory of gender and health. *Social Science Medicine*, 1385-1401.
- Couter, A. C., Manke, B. A., & McHale, S. M. (1995). The Family Context of Gender Intensification in Early Adolescence. *Child Development*, 317-329.
- Cozier, Y. W. (2009). Perceived racism in relation to weight change in Black Women's Health Study. *Annals of Epidemiology*, 369-387.
- Craigie, A., Lake, A., Kelly, S., Adamson, A., & Mathers, J. (2011). Tracking of obesity related behaviors from childhood to adulthood: A systematic review. *Maturitas*, 266-284.
- Crawford, D. C. (2010). The longitudinal influence of home and neighbourhood environments on children's body mass index and physcial activity over 5 years: the CLAN study. *International Journal of Obesity*, 1177-1187.
- Cunningham, T. B. (2013). Changes in waist circumference and body mass index in the US Cardia cohort: Fixed effects associations with self-reported experiences of racial/ethnic discrimination. *Journal of Biosocial Science*, 267-278.
- Daniels, S., Arnett, D., Eckel, R., Gidding , S., Harman, L., Kumanyika, S., . . . Williams, C. (2005). Overweight in Children and Adolescents: Pathophysiology, Consequences, Prevention, and Treatment. *Circulation*, 1999-2012.
- Darke, S., Disselduff, M., & Try, G. (1980). A nutrtrion survey of children from one-parent families in Newcastle upon Tyne in 1970. *The British Journal of Nutrition*, 237-241.
- Davis, A. A., Rhodes, J. E., & Hamilton-Leaks, J. (1997). When Both Parent May Be A Source of Support and Problems: An Analysis of Pregnant and Parenting Female African American Adolescents' Relationships With Their Mothers and Fathers. *Journal of Research on Adolescence*, 331-348.

- Davison, K. B. (2001). Childhood overweight: A contextual model and recommendations for future research. *Obesity Reviews*, 159-171 doi: 10.1046/j.1467-789x.2001.00036.x.
- de Visser, R., Smith, J., & McDonnell, E. (2009). "That's not masculine' Masculine Capital and Health-related Behaviour. *Journal of Health Psychology*, 1047-1058.
- DeFranc, W., & Mahalik, J. (2002). Masculine gender role conflict and stress in relation to parental attachment and separation. *Psychology of Men and Masculinity*, 51-60.
- DeMaris. (2004). *Regression with Social Data*. New York: John Wiley and Sons.
- Dietz, W. (1994). Critical periods in childhood for the development of obesity. *American Journal of Clinical Nutrition*, 955-959.
- Dietz, W. (1996). Early influences on body weight regulation. In B. G. Bouchard C., *Regulation of Body Weight*. Chichester: John Wiley.
- Doherty, W., Kouneski, E., & Erickson, M. (1998). Responsible Fathering: An Overview and Conceptual Framework. *Journal of Marriage and Family*, 277-292.
- Doustmohammadian, A., Abdollahi, m., Bondarianzadeh, D., Houshiarrad, A., & Abtahi, M. (2012). Parental Determinants of Overweight and Obesity in Iranian Adolescents: A National Study. *Iranian Journal of Pediatric*, 35-42.
- Dubas, J. S., & Gerris, J. R. (2002). Longitudinal changes in the time parents spend in activities with their adolescent children as a function of child age, pubertal status and gender. *Journal of Family Psychology*, 415-427.
- Dzewaltowski, D. R. (2008). Parental bonding may moderate the relationship between parent physical activity and youth physical activity after school. *Psychology in Sport and Exercise*, 848-854.
- Eaton, D., Kahn, L., Kinchen, S., Shenklin, S., Flint, K., Hawkins, J., . . . Wechsler, H. (2012). Youth Risk Behavior Surveillance- United State, 2011 Surveillance Summaries. *Morbidity and Mortality Weekly Reports*, Vol. 61/ No. 4.
- Ehrlich, K., Hoyt, L., Sumner, J., McDade, T., & Adam, E. (2015). Quality of relationships with parents and friends in adolescence predicts metabolic risk in young adulthood. *Health Psychology*, <http://dx.doi.org/10.1037/hea0000213>.
- Eidsdottir, T., Kristjansson, A., Sigfusdottir, I., Garber, C., & Allegrante, J. (2013). Secular trends in overweight and obesity among Icelandic adolescents: do parental education levels and family structure play a part. *Scandinavian Journal of Public Health*, 382-391 doi:10.1177/1403494813477927.

- Elliot, D. (1994). Serious Violent Offenders: Onset, Developmental Course, and Termination-The American Society of Criminology 1993 Presidential Address. *Criminology*, 1-21.
- Fasting, M., Nilsen, T. I., Holmen, T. L., & Vik, T. (2011). Changes in parental weight and smoking habits and offspring adiposity: Data from the HUNT-study. *International Journal of Pediatric Obesity*, 399-407.
- Ferreira, K. V.-V. (2007). Environmental correlates of physical activity in youth- a review and update. *Obesity Reviews*, 129-154.
- Feunekes, G. I., Stafleu, A., De Graaf, C., & Van Staveren, W. A. (1997). Family resemblance in fat intake in the Netherlands. *European Journal of Clinical Nutrition*, 793-799.
- Field, A., Javaras, K., Aneja, P., Kitos, N., Camrigo, C., Taylor, C., & Laird, N. (2008). Family, peer, and media predictors of becoming eating disordered. *Archives of Pediatric and Adolescent Medicine*, 574-579 doi: 10.1001/archpedi.162.6.574.
- Fosse, N., & Haas, S. (2009). Validity and stability of self-reported health among adolescents in a longitudinal, nationally representative survey. *Pediatrics*, 496-501.
- Fraser, J., Skouters, H., McCabe, M., Ricciardelli, L., Milgrom, J., & Louise, B. (2011). Paternal Influences on Children's Weight Gain: A Systematic Review. *Fathering*, 252-267.
- Freedman, D. (2011). Obesity-United States, 1998-2008. *Morbidity and Mortality*, 73-77.
- Frisancho, R. (2000). Prenatal compared with parental origins of adolescent fatness. *American Journal of Clinical Nutrition*, 1186-1190.
- Fuentes, R. M., Notkola, I. L., Shemeikka, S., & Nissinen, A. (2002). Familial aggregation of body mass index: a population-based family study in eastern Finland. *Hormone and Metabolic Research*, 406-410.
- Garn, S. M., Sullivan, T. V., & Hawthorne, V. M. (1989). Fatness and obesity of the parents of obese individuals. *American Journal of Clinical Nutrition*, 1308-1318.
- Gikas, A., Triantafillidis, J. K., & Perdikaki, P. (2003). Breakfast skipping and its association with other unhealthy food habits among Greek high school adolescents. *Annals of Gastroenterology*, 321-327.
- Glaze, L. M. (2010). Parents in Prison and Their Minor Children. *Bureau of Justice Statistics Special Report*, 1-25 <http://www.bjs.gov/content/pub/pdf/pptmc.pdf> Retrieved July 11, 2015.

- Goff, P. J. (2014). The essence of innocence: Consequences of dehumanizing Black Children. *Journal of Personality and Social Psychology*, 526-545 doi: 10.1037/t30873-000.
- Goldbacher, E. E. (2012). Factor Structure of the Emotional Eating Scale in Overweight and Obese Adults Seeking Treatment. *Appetite*, 610-615.
- Gordon, D., Hawes, S., Reid, A., Callands, T., Magriples, U., Divney, A., . . . Kershaw, T. (2013). The Many Faces of Manhood: Examining Masculine Norms and Health Behaviors of Young Fathers Across Race. *American Journal of Mens Health*, 394-401 doi:10.1177/1557988313476540.
- Gorlova, O., Amos, C., Wang, N., Shete, S., Turner, S., & Boerwinkle, E. (2003). Genetic linkage and imprinting effects on body mass index in children and young adults. *European Journal of Human Genetics*, 425-432.
- Grande, S. S.-R. (2013). A Brotherhood Perspective: How African American Male Relationships May Improve Trust and Utilization of Health Care. *American Journal of Men's Health*, 494-501 doi:10.1177/1557988313485783.
- Grant, K., O'Koon, J., Davis, T., Roache, N., Poindexter, L., Armstrong, M., . . . McIntosh, J. (2000). Protective Factors Affecting Low-Income Urban African American Youth Exposed to Stress. *The Journal of Early Adolescence*, 388-417.
- Griffith, D., Gunter, K., & Watkins, D. (2012). Measuring Masculinity in Research on Men of Color: Findings and Future Directions. *American Journal of Public Health*, 187-194.
- Guillaume, M. (1999). Defining obesity in childhood. *American Journal of Clinical Nutrition*, 126-130.
- Güven, A., Odacı, H., Özgen, I., & Bek, Y. (2008). Effects of individual factors on adolescent obesity: Study in Turkey. *Pediatrics International*, 356-362.
- Hammond, W., Caldwell, C., Brooks, C., & Bell, L. (2011). Being There in Spirit, Fire, and Mind: Expressive Roles Among Nonresidential African American Fathers. *Research on Social Work Practice*, 308-318.
- Hanson, S. (2007). Success in Science Among Young African American Women the Role of Minority Families. *Journal of Family Issues*, 3-33.
- Harris, H., Willet, W., & Michels, K. (2013). Parental smoking during pregnancy and risk of overweight and obesity in the daughter. *International Journal of Obesity*, 1356-1363 doi:10.1038/ijo.2013.101.
- Harrison, K. B.-T.-G. (2011). Toward a Developmental Conceptualization of Contributors to Overweight and Obesity in Childhood: The Six-C's Model. *Child Development Perspectives*, 50-58 doi: 10.1111/j.1750-8606.2010.00150.

- Heude, B., Kettaneh, A., Rakotovao, R., Bresson, J. L., Borys, J. M., Ducimetiere, P., . . . Group, F.-L. V. (2005). Anthropometric relationships between parents and children throughout childhood: the Fleurbaix-Laventie Ville Sante Group. *International Journal of Obesity*, 1222-1229.
- Healthy People 2020 [Internet]. Washington, DC: U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion Retrieved on July, 11, 2015. Available from: <http://www.healthypeople.gov/>.
- Hitchcock, N., Maller, R., & Gilmour, A. (1986). Body size of young Australians aged five to 16 years. *Medical Journal of Australia*, 368-372.
- Hughes, D. R. (2006). Parents' Ethnic-Racial Socialization Practices: A Review of Research and Directions for Future Study. *Developmental Psychology*, 747-770 doi:10.1037/0012-1649.42.5.747.
- Hunte, H. E. (2011). Association between perceived interpersonal everyday discrimination and waist circumference over a 9 year period in the Midlife Development in the United States cohort study. *American Journal of Epidemiology*, 1232-1239 doi: 10.1093/aje/kwq463.
- Hunte, H. W. (2009). The association between perceived discrimination and obesity in a population-based multiracial and multiethnic adult sample. *American Journal of Public Health*, 1285-1293.
- Hunter, A., & Davis, J. E. (1994). Hidden Voices of Black Men: The Meaning, Structure, and Complexity of Manhood. *Journal of Black Studies*, 20-40.
- Ibrahim, A., Mousa, A., & Sivarajan, F. (2010). Predictors of obesity in school-aged Jordanian adolescents. *International Journal of Nursing Practice*, 397-405.
- Jaaskelainen, A., Pussinen, J., Nuutinen, O., Schwab, U., Pirkola, J., Kolehmainen, M., . . . Laitinen, J. (2011). Intergenerational transmission of overweight among Finnish adolescent and their parents: a 16 year follow-up study. *International Journal of Obesity*, 1289-1294.
- Jackson, J., Torres, M., Caldwell, C., Neighbors, H., Nesse, R., Taylor, R., . . . Williams, D. (2004). The National Survey of American Life: a study of racial, ethnic and cultural influences on mental disorders and mental health. *International Journal of Methods in Psychiatric Research*, 196-207.
- Jayakody, R., & Kalil, A. (2002). Social Fathering in Low-Income, African American Families with Preschool Children. *Journal of Marriage and Family*, 504-516.
- Jimenez-Pavon, D., Oretga, F., Ruiz, J., Chillon, P., Castillo, R., Artero, E., . . . Gonzalez-Gross, M. (2010). Influence of socioeconomic factors on fitness and fatness in Spanish adolescents: The AVENA study. *International Journal of Pediatric Obesity*, 467-473.

- Jones, J., & Mosher, W. (2013). Fathers' Involvement with Their Children: United States, 2006-2010. *National Health Statistics Reports*, 1-22.
- Jordan, L., & Lewis, M. (2005). Paternal Relationship Quality as a Protective Factor: Preventing Alcohol Use Among African American Adolescents. *Journal of Black Psychology*, 152-171.
- Jose, K., Blizzard, L., Dwyer, T., McKercher, C., & Venn, A. (2011). Childhood and adolescent predictors of leisure time physical activity during the transition from adolescent to adulthood: a population based cohort study. *International Journal of Nutrition and Physical Activity*, 54.
- Kautianianen, S., Koivisto, A.-M., Koivusilta, L., Lintonen, T., Virtanen, S., & Rimpela, A. (2009). Sociodemographic factors and a secular trend of adolescent overweight in Finland. *International Journal of Pediatric Obesity*, 360-270.
- Kelly, T., Yang, W., Chen, C.-S., Reynolds, K., & He, J. (2008). Global burden of obesity in 2005 and projections to 2030. *International Journal of Obesity*, 1431-1437.
- Kelsey, M. M., Zaepfel, A., Bjornstad, P., & Nadeau, K. J. (2014). Age-Related Consequences of Childhood Obesity. *Gerontology*, 222-228
doi:10.1159/000356023.
- Kenny, D. K. (1998). Data analysis in social psychology. In D. F. Gilbert, *Handbook of Social Psychology* (pp. 233-265). New York: McGraw-Hill.
- Kenny, D., Kashy, D., & Cook, W. (2006). *Dyadic Data Analysis*. New York: Cambridge.
- Kim, M.-J., McIntosh, W., Andind, J., Kubena, K., Reed, D., & Moon, G.-S. (2008). Perceived parenting behaviors predict young adolescents' nutritional intake and body fatness. *Maternal and Child Nutrition*, 2877-303.
- Kim, T., Lee, E., & Han, E. (2015). Quantile regression analyses of associated factors for body mass index in Korean adolescents. *Public Health*,
doi:10.1016/j.puhe.2015.01.021.
- Kimm, S., Barton, B., Obarzanek, E., McMahon, R., Sabry, Z., Wacławiw, M., & al., et al. (2001). Racial divergence in adiposity during adolescence: The NHBLI Growth and Health Study. *Pediatrics*.
- King, M. M. (2010). Father in Low-income Black Families: Studying Father-Figure Flow. In R. Coles, & C. Green, *The Myth of the Missing Black Father* (pp. 147-169). New York: Columbia University Press.

- Knowlden, A., & Sharma, M. (2012). Systematic review of family and home-based interventions targeting paediatric overweight and obesity. *Obesity Management*, 499-508.
- Koziel, S., Kolodziel, H., & Ulijaszek, S. (2000). Parental education, body mass index, and prevalence of obesity among 14-year-old boys between 1987 and 1997 Wroclaw, Poland. *European Journal of Epidemiology*, 1163-1167.
- Krieger, N. (2005). Defining and investigating social disparities in cancer: Critical issues. *Cancer Causes and Control*, 5-14.
- Krieger, N., Smith, K., Naishadham, D., Hartman, C., & Barbeau, E. (2005). Experiences of discrimination: Validity and reliability of a self-report measure for population health research on racism and health. *Social Science and Medicine*, 1576-1596 doi:10.1016/j.socscimed.2005.03.006.
- Kromeyer-Hauschild, K., Zellner, K., Jaeger, U., & Hoyer, H. (1999). Prevalance of overweight and obesity among school children in Jena (Germany). *International Journal of Obesity*, 1143-1150.
- Kuczmarski, R., Ogden, C., Guo, S., Grummer-Strawn, L., Flegal, K., & Mei, Z. et al. (2002). 2000 CDC Growth Charts for the United States: Methods and Development. *Vital Health Statistics*.
- Lake, J. P. (1997). Child to adult body mass index in the 1958 British birth cohort: Associations with paternal obesity. *Archives of Disease in Childhood*, 376-381.
- Lam, C., & McHale, S. (2015). Developmental patterns and parental correlates of youth leisure-time physical activity. *Journal of Family Psychology*, 100-107 doi:10.1037/fam0000049.
- Lamb, M. E. (1986). *The father's role: Applied perspectives*. New York: John Wiley and Sons.
- Lamborn, S., & Nguyen, D.-G. (2004). African American Adolescents' Perception of Family Interactions: Kinship Support, Parent-Child Relationships, and Teen Adjustment. *Journal of Youth and Adolescence* , 547-558.
- Lasker, G., & Mascie-Taylor, C. (1989). Effects of social class differences and social mobility on growth in height weight and body mass index in a British cohort. *Annals of Human Biology*, 1-8.
- Laurent, M. (1997). *Gender role conflict, cultural identity, and self-esteem among African-American men*. Dissertation Abstract International:Section A. Humanities and Social Sciences, 59, 1473.
- Lauzon-Guillan, B. R.-E. (2009). Cognitive restraint, uncontrolled eating and emotional eating. *Maternal and Child Nutrition*, 171-178.

- Lawlor, D., Smith, G. D., O'Callaghan, M., Alati, R., Mamun, A., Williams, G., & Najman, J. (2006). Epidemiologic evidence for the fetal overnutrition hypothesis: findings from the Mater-University study of pregnancy and its outcomes. *American Journal of Epidemiology*, 418-424.
- Lee, S. M., Kusher, J., & Cho, S. H. (2007). Effects of Parent's Gender, Child's Gender, and Parental Involvement on the Academic Achievement of Adolescents in Single Parent Families. *Sex Roles*, 149-157.
- Levant, R., & Wimer, D. (2014). Masculinity constructs as protective buffers and risk factors for men's health. *American Journal of Men's Health*, 110-20 doi: 10.1177/1557988313494408.
- Li, M., Dibley, M., Sibbritt, D., & Yan, H. (2006). Factors associated with adolescents physical inactivity in Xi'an City, China. *Medicine and Science in Sports and Exercise*, 2075-2080.
- Lindeboom, M., Lundborg, P., & Van der Klaauw, B. (2010). Assessing the impact of obesity on labor market outcomes. *Economics and Human Biology*, 309-319.
- Liou, Y., Liou, T.-H., & Chang, L.-C. (2010). Obesity among adolescents: sedentary leisure time and sleeping determinants. *Journal of Advance Nursing*, 1246-1256.
- Liu, T.-L., Yen, J.-Y., Ko, C.-H., Huang, M.-F., Wang, P.-W., Yeh, Y.-H., & Yen, C.-F. (2010). Associations between substance use and body mass index: Moderating effects of sociodemographic characteristics among Taiwanese adolescents. *Kaohsiung Journal of Medicine Sciences*, 281-289.
- Magarey, A., Daniels, L., Boulton, T., & Cockington, R. (2001). Does fat intake predict adiposity in healthy children and adolescents aged 2-15 y? A longitudinal study. *European Journal of Clinical Nutrition*, 471-481.
- Magnusson, P., & Rasmussen, F. (2002). Familial resemblance of body mass index and familial risk of high and low body mass index. A study of young men in Sweden. *International Journal of Obesity*, 1225-1231.
- Mahfouz, A., Shatoor, A., Khan, M., Daffalla, A., Mostafa, O., & Hassanein, M. (2011). Nutrition, physical activity and gender risks for adolescent obesity in Southwestern Saudi Arabia. *Saudi Journal of Gastroenterology*, 318-322.
- Marrocco, F. (2001). Gender role conflict in young males as a function of paternal/filial mutual identification and person warmth and empathy. *Dissertation Abstracts International*, 52,4226.
- Martinez, C., Ibanez, J., Paterno, C., Semenza de Riog Bustamenta, M., Heitz, M., Jure, J., . . . Caceras, L. (2001). Sobreprea y obesidad en ninos y adolescentes de la ciudad de Corrientes asociacion con factores de riesgo cardiovascular. *Medicina*, 308-314.

- Mauer, M. (2011). Addressing Racial Disparities in Incarceration. *The Prison Journal*, 87-101 doi: 10.1177/0032885511415227 .
- McHale, S. M., Crouter, A. C., & Whiteman, S. D. (2003). The Family Contexts of Gender Development in Childhood and Adolescence. *Social Development* , 125-148.
- McHale, S., Crouter, A., Kim, J.-Y., Burton, L., Davis, K., Dotterer, A., & Swanson, D. (2006). Mothers' and Fathers' Racial Socialization in African American Families: Implications for Youth. *Child Development*, 1387-1402.
- McIntosh, A., Kubena, K., Tolle, G., Dean, W., Kim, M.-J., Jan, J.-S., & Anding, J. (2011). Determinants of children's use of and timespent in fast food and full service restaurants. *Journal of Nutrition Education and Behavior*, 142-149 doi: 10.1016/j.jneb.2010.04.002.
- Mihas, C., Mariolis, A., Manios, Y., Naska, A., Panagiotakos, D., Arapaki, A., . . . Tountas, Y. (2008). Overweight/obesity and factors associated with body mass index during adolescence: the VYRONAS study. *Acta Paediatrica*, 495-500.
- Morrissey, T. (2013). Trajectories of growth in body mass index across childhood: Associations with maternal and paternal employment. *Social Science and Medicine*, 60-68.
- Mostazir, M. J. (2014). Gender assortative waist circumference in mother-daughter and father-son pairs, and its implications. An 11 year longitudinal study in children. *Pediatric Obesity*, 176-185.
- Mo-suwan, I., Tongkumchum, P., & Puetpaiboon, A. (2000). Determinants of overweight tracking from childhood to adolescence: a 5y follow-up study of Hat Yai schoolchildren. *International Journal of Obesity*, 1642-1647.
- Mota, J., Ribeiro, J. C., & Santos, M. P. (2009). Obese girls differences in neighbourhood perceptions screen time and socioeconomic status according to level of physical activity. *Health Education Research*, 98-104.
- Mueller, C., Field, T., Yando, R., Harding, J., Gonzalez, K., Lasko, D., & Bendell, D. (1995). Under-eating and over-eating concerns among adolescents. *Journal of Child Psychology and Psychiatry*, 1019-1025.
- Muller, M. (2009). How are we going to turn the obesity prevention experience? *Obesity Reviews*, 101-104.
- Musaiger, A., Al-Roomi, K., & Bader, Z. (2014). Social, dietary and lifestyle factors associated with obesity among Bahraini adolescents. *Appetite*, 197-204 doi:10.1016/j.appet.2013.11.002.

- Newton, R. G. (2014). A systematic review weight loss, physical activity and dietary interventions involving African American men. *Obesity Review*, 93-106.
- Ng, M. E. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, 766-781 doi:10.1016/S0140-6736(14)60460-8.
- Nhingpanha-Palomba, H., Chalencon, V., Bonnetterre, V., Raynaud, C., & Patural, H. (2013). Que deviennent 10 ans après, les enfants suivis pour surpoids ou obésité ? : étude observationnelle. *Archives de Pédiatrie*, 731-738 doi:10.1016/j.arcped.2013.04.014.
- Northstone, K., Golding, J., Smith, G., Miller, L., & Pembrey, M. (2014). Prepubertal start of father's smoking and increased body fat in his sons: further characterisation of paternal transgenerational responses. *European Journal of Human Genetics*, 1382-1386.
- Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2014). Prevalence of Childhood and Adult Obesity in the United States, 2011-2012. *Journal of American Medical Association*, 806-814. doi:10.1001/jama.2014.732.
- Ogden, C., Carroll, M., Kit, B., & Flegal, K. (2012). Prevalence of Obesity and Trends In Body Mass Index Among US Children and Adolescents 1999-2010. *Journal of American Medical Association*, Vol 307 No.5 483-490.
- O'Neil, J. (2015). *Men's Gender Role Conflict: Psychological Cost, Consequences, and an Agenda for Change*. Washington, DC: American Psychological Association.
- O'Neil, J. (1986). Gender-role conflict scale: college men's fear of femininity. *Sex Roles*, 335-350.
- Ornelas, I., Amell, J., Tran, A., Royster, M., Armstrong-Brown, J., & Eng, E., (2009). Understanding African American Men's Perception of Racism, Male Gender Socialization and Social Capital Through Photovoice. *Qualitative Health Research*, 552-565 doi:10.1177/1049732309332104.
- Ornelas, I., Perreira, K., & Ayala, G. (2007). Parental influences on adolescent physical activity: a longitudinal study. *International Journal of Behavioral Nutrition and Physical Activity*.
- Ozmert, E., Ozdemir, R., Pektaş, A., Uckardes, Y., & Yurdakok, K. (2011). Effect of activity and television viewing on BMI z-score in early adolescents in Turkey. *World Journal of Pediatrics*, 37-40.
- Pagoto, S., Kristin, S., Oleski, J., Luciani, J., Bobenlos, J., & Whited, M. (2012). Male Inclusion in Randomized Controlled Trials of Lifestyle Weight Loss-Interventions. *Obesity*, 1234-1239.

- Palmer, C. (1998). Defining and Studying the Modern African Diaspora. *Perspectives [the American Historical Association Newsletter]*, no. 6(22-25).
- Palmer, C. (2000). The African diaspora. *Black Scholar*, 56-59.
- Park, H. S., Yim, K. S., & Cho, S. I. (2004). Gender differences in familial aggregation of obesity-related phenotypes and dietary intake pattern in Korean families. *Annals of Epidemiology*, 486-491.
- Parletta, N., Peters, J., Owen, A., Tsiros, M., & Brennan, L. (2012). Parenting styles, communication and child/adolescents diets and weight status: let's talk about it. *Early Child Development and Care*, 1089-1103.
- Parsons, T. J., Power, C., Logan, S., & Summerbell, C. D. (1999). Childhood Predictors of Adult Obesity: A Systematic Review. *International Journal of Obesity Related Metabolic Disorders*, S1-107.
- Patrick, H., Hennessy, E., McSpadden, K., & Oh, A. (2013). Parenting Styles and Practices in Children's Obesogenic Behaviors: Scientific Gaps and Future Research Directions. *Childhood Obesity*, 73-86.
- Peart, N. A. (2006). Faces of fatherhood: African American young adults view the paternal role. *Families in Society*, 87(1), 71-83.
- Policy Brief: OECD Obesity Update 2012*. (2012). Retrieved 9 27, 2012, from OECD Better policies for better lives: <http://www.oecd.org/health/healthpoliciesanddata/theeconomicsofprevention.htm>
- Priest, N. P. (2012). A systematic review of studies examining the relationship between reported racism and health and wellbeing for children and young people. *Social Science and Medicine*, 1-13.
- Rasheed, J. M., & Rasheed, M. N. (1999). *Social work practice with African American men: The invisible presence*. Thousand Oaks: Sage.
- Regnerus, M., & Luchies, L. (2006). The Parent-Child Relationship and Opportunities for Adolescents' First Sex. *Journal of Family Issues*, 159-183.
- Reid, M., & Finley, G. (2010). Trends in African American and Caribbean Fathers' Nurturance and Involvement. *Culture, Society, and Masculinities*, 107-120.
- Rich, C. (2014). Angela Harris and the Racial Politics of Masculinity: Trayvon Martin, George Zimmerman, and the Dilemmas of Desiring Whiteness. *California Law Review*, 1026-1052.
- Robert-Douglass, K., & Curtis-Boles, H. (2013). Exploring positive masculinity development in African American men: A retrospective study. *Psychology of Men and Masculinity*, 7-15.

- Robinson, W., Stevens, J., Kaufman, J., & Gordon-Larsen, P. (2010). The role of adolescent behaviors in the female-male disparity in obesity incidence in US Black and White young adults. *Obesity*, 1429-1436.
- Rong, X. L., & Brown, F. (2002). Socialization, Culture, and Identities of Black Immigrant Children What Educators Need to Know and Do. *Education and Urban Society*, 247-273.
- Roopnarine, J. L., Krishnakumar, A., Metindogan, A., & Evans, M. (2006). Links between parenting styles, parent-child academic interaction, parent-school interaction and early academic skills and social behaviors in young children of English-speaking Caribbean immigrants. *Early Childhood Research Quarterly*, 238-252.
- Roy, K., & Burton, L. (2007). Mothering through Recruitment: Kinscription of Nonresidential Fathers and Father Figures in Low-Income Families. *Family Relations*, 24-39.
- Sadler, G. L.-C. (2010). Recruiting hard to reach United States population subgroups via adaptations of snowball sampling strategy. *Nursing and Health Sciences*, 369-374.
- Sanchez, F., Liu, W. M., Leathers, L., Goins, J., & Vilain, E. (2011). The subjective experience of social class and upward mobility among African American men in graduate school. *Psychology of Men and Masculinity*, 368-382.
- Sangeetha, M., & Roy, K. (2012). Securing Fatherhood through Kin Work: A Comparison of Black Low Income Fathers and Families in South Africa and the U.S. *Journal of Family Issues*.
- Sarkadi, A., Kristiansson, R., Oberklaid, F., & Bremberg, S. (2008). Fathers' involvement and children's developmental outcomes: a systematic review of longitudinal studies. *Acta Paediatrica*, 153-158.
- Savage, J., DiNallo, J., & Symons Downs, D. (2009). Adolescent body satisfaction: the role of perceived parental encouragement for physical activity. *International Journal of Behavioral Nutrition and Physical Activity*.
- Schaefer, M., & Blodgett-Salafia, E. (2014). The connection of teasing by parents, siblings and peers with girls' body dissatisfaction and boys' drive for muscularity: The role of social comparison as a mediator. *Eating Behaviors*, 599-608
doi:10.1016/j.eatbeh.2014.08.018.
- Seidman, D., Laor, A., Gale, R., Stevenson, D., & Danon, Y. (1991). A longitudinal study of birth weight and being overweight in late adolescence. *American Journal of Diseases of Children*, 782-785.

- Shephard, W. (2001). Masculine gender role conflict and psychological well-being: A comparative study of heterosexual and gay men. *Dissertation Abstracts International: Section B. The Sciences and Engineering*, 63, 4386.
- Sherry, B., Jefferds, M., & Grummer-Strawn, L. (2007). Accuracy of adolescent self-report of height and weight in assessing overweight status: A literature review. *JAMA Pediatrics*, 1154-1161.
- Shi, Z., Lien, N., Kumar, B., & Holmboe-Ottesen, G. (2006). Physical activity and associated socio-demographic factors among school adolescents in Jiangsu Province, China. *Preventive Medicine*, 218-221.
- Shi, Z., Lien, N., Kumar, B., Dalen, I., & Holmboe-Ottesen, G. (2005). The sociodemographic correlates of nutritional status of school adolescents in Jiangsu Province, China. *Journal of Adolescent Health*, 313-322.
- Siegel, S. M. (2011). Correlates of Physical Activity and Inactivity in Urban Mexican Youth. *American Journal of Human Biology*, 686-692.
- Silva, D., Pelegrini, A., Ferreira de Lima e Silva, J., & Petroski, E. (2011). Epidemiology of whole body, peripheral, and central adiposity in adolescents from Brazilian state capital. *European Journal of Pediatrics*, 1541-1550.
- Skelton, J., Buehler, C., Irby, M., & Grywacz, J. (2012). Where are family theories in family-based obesity treatment?: conceptualizing the study of families in pediatric weight management. *International Journal of Obesity*, 891-900.
- Skinner, A. C., & Skelton, J. A. (2014). Prevalence and Trends in Obesity and Severe Obesity Among Children in the United States 1999-2012. *Pediatrics*, 561-566 doi:10.1001/jamapediatrics.2014.21.
- Sleddens, E., Sanne, M., Gerards, P., Thijs, C., de Vries, N., & Kremers, S. (2011). General parenting, childhood overweight and obesity-inducing behaviors: A review. *International Journal of Pediatric Obesity*, e12-e27.
- Smetana, J., Campione-Barr, N., & Metzger, A. (2006). Adolescent Development in Interpersonal and Societal Contexts. *Annual Review of Psychology*, 255-284.
- Speakman, J., Djafarian, K., Stewart, J., & Jackson, D. (2007). Assortative mating for obesity. *The American Journal of Clinical Nutrition*, 316-323.
- Spruijt-Metz, D. (2011). Etiology, Treatment and Prevention of Obesity Childhood and Adolescence: A Decade in Review. *Journal of Research on Adolescence*, 129-152. doi:10.1111/j.1532-7795.2010.00719.x.
- Staessen, J., Bulpitt, C., Fagard, R., Joossens, J., Lijnen, P., & Amery, A. (1985). Familial aggregation of blood pressure, anthropometric characteristics and urinary

- excretion of sodium and potassium-a population study in to Belgian towns. *Journal of Chronic Disease*, 397-407.
- Stanik, C., Riina, E., & McHale, S. (2013). Parent-Adolescent Relationship Qualities and Adolescent Adjustment in Two-Parent African American Families. *Family Relations*, 597-608.
- Steinhubl, S. M. (2015). The emerging field of mobile health. *Science Translational Medicine*, pp. 283rv3 doi: 10.1126/scitranslmed.aaa3487.
- Stewart, S., & Manning, C. (2009). Family Structure, Nonresident Father Involvement and Adolescent Eating Pattern. *Journal of Adolescent Health*, 193-201.
- Svensson, V., Jacobsson, J. A., Fredriksson, R., Danielsson, P., Sobko, T., Schioth, H. B., & Marcus, C. (2011). Association between severity of obesity in childhood and adolescence, obesity onset and parental BMI: a longitudinal cohort study. *International Journal of Obesity*, 46-52.
- Swaminathan, S., Thomas, T., Yusuf, S., & Vaz, M. (2013). Clustering of diet, physical activity and overweight in parents and off spring in South India. *European Journal of Clinical Nutrition* , 128-134 doi:10.1038/ejcn.2012.192.
- Tanosfsky-Kraff, M. e. (2007). Validation of the Emotional Eating Scale Adapted for the Use in Children and Adolescent. *International Journal of Eating Disorders*, 232-240.
- The White House, O. o. (2014). *My Brother's Keeper Task Force Report to the President*. Retrieved from The White House President Obama: http://www.whitehouse.gov/sites/default/files/docs/053014_mbk_report.pdf
- Thibault, H., Contrand, B., Saubusse, E., Baine, M., & Maurice-Tison, S. (2010). Risk factors for overweight and obesity in French adolescents: Physical activity, sedentary behavior and parental characteristics. *Nutrition*, 192-200.
- Tsai, A., Williamson, D., & Glick, H. (2011). Direct medical cost of overweight and obesity in the United States: a quantitative systematic review. *Obesity Reviews*, 50-61.
- Tschumper, A., Nagele, C., & Alasker, F. (2006). Gender, type of education, family background and overweight in adolescents. *International Journal of Pediatric Obesity*, 153-160.
- Tull, E. W.-B. (1999). Relationship of internalized racism to abdominal obesity and blood pressure in Afro-Caribbean women. *Journal of the National Medical Association*, 447-452.

- Turner, H., Rose, K., & Cooper, M. (2005). Schema and parental bonding in overweight and nonoverweight female adolescents. *International Journal of Obesity*, 381-387.
- Ulijaszek, S. (2008). Seven Models of Population Obesity. *Angiology*, 34-38.
- Ullman, S., Bутtenheim, A., Goldman, N., Pebley, A., & Wong, R. (2011). Socioeconomic differences in obesity among Mexican adolescents. *International Journal of Pediatric Obesity*, 373-380.
- Vandewalle, J., Moens, E., & Braet, C. (2014). Comprehending emotional eating in obese youngsters: the role of parental rejection and emotional regulation. *International Journal of Obesity*, 525-530 doi:10.1038/ijo.2013.233.
- Vines, A. B.-P. (2007). Association of abdominal fat with perceived racism and passive emotional responses to racism in African American women. *American Journal of Public Health* , 526-530.
- Wade, J. (2002). African American Fathers and Sons: Social, Historical and Psychological Considerations. In O. M. Harris, *Impact of incarceration on the African American family* (pp. 141-156). New Brunswick: Transaction Publishers.
- Wade, J. C. (2008). Masculinity Ideology, Male Reference Group Identity Dependence, and African American Men's Health Related Attitudes and Behaviors. *Psychology of Men and Masculinity*, 5-16.
- Wang, L., Slawson, D., Relyea, G., Southerland, J., & Wang, Y. (2014). Prevalence of and risk factors for adolescent obesity in Southern Appalachia, 2012. *Preventing Chronic Disease*, doi:10.5888/pcd11.140348 [doi] .
- Watt, T., Martinez-Ramos, G., & Majumdar, D. (2012). Race/Ethnicity, Acculturation, and Sex Differences in the Relationship between Parental Social Support and Children's Overweight and Obesity. *Journal of Health Care for the Poor and Underserved*, 1793-1805 doi:10.1353/hpu.2012.0147 [doi] .
- Williams, D. R., & Jackson, J. S. (2000). Race/Ethnicity and the 2000 Census: Recommendations for African American and Other Black Populations. *American Journal of Public Health*, 1728-1730.
- Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial Differences in Physical and Mental Health: Socioeconomic Status, Stress and Discrimination. *Journal of Health Psychology*, 335-351 doi: 10.1177/135910539700200305.
- Williams, S. (2001). Overweight at age 21: the association with body mass index in childhood and adolescence and parents' body mass index. A cohort study of New Zealanders born in 1972-1973. *International Journal of Obesity*, 158-163.

- Wronka, I. (2014). Socioeconomic status, body mass index and prevalence of underweight and overweight among Polish girls aged 7-18: a longitudinal study. *Journal of Biosocial Science*, 449-461 doi: 10.1017/S002193201300031X.
- Yen, C.-F., Hsiao, R., Yen, J.-Y., Ko, C.-H., Liu, S.-C., huang, C.-F., & Wang, S.-Y. (2010). Body weight statuses and their sociodemographic correlates among adolescent in southern Taiwan: Results using two sets of cutoff references. *Journal of Adolescent Health*, 62-69.
- Yinghui, L., Chen, H., Liang, L., & Wang, Y. (2013). Parent-child resemblance in weight status and its correlates in the United States. *PLoS One*, 10.1371/journal.pone.0065361.
- Yoshinaga, M., Hatake, S., Tachikawa, T., Shinomiya, M., Miyazaki, A., & Takahashi, H. (2011). Impact of lifestyles of adolescents and their parents on cardiovascular risk factors in adolescents. *Journal of Atherosclerosis and Thrombosis*, 981-990.
- Young, E., & Fors, S. (2001). Factors related to eating habits of students in grades 9-12. *Journal of School Health*, 483-488.
- Zhang, L. M. (2011). Children's weight status and maternal and paternal feeding practices. *Journal of Child Health Care*, 389-400.
- Zhang, Z., Zyphur, M., & Preacher, K. (2009). Testing Multilevel Mediation Using Hierarchical Linear Models. *Problems and Solutions*, 695-719 doi:10.1177/1094428108327450.

Appendices

HUMAN SUBJECT RESEARCH - DETERMINATION FORM

This form should be completed and submitted to the UCHC IRB when an investigator proposes a project using human materials or human data that s/he does not believe constitutes human subject research. **The IRB Office is located in the Munson Building on the 2nd Floor. The interoffice mail code is 3926.** The investigator must provide adequate information for the IRB Chair to determine whether the project constitutes human subject research. If the Chair determines that a project is not human subject research the HSPO/IRB will have no on-going involvement with the project. If the project is deemed to meet the definition of human subject research, a complete IRB application will be required with the IRB providing guidance as to the type of review required. The IRB will also provide guidance on any HIPAA related issues.

Rec'd
3/11/14
577

Name of Investigator:	Ann M. Ferris, Ph.D; principal investigator Ailton Coleman, MPH; doctoral student
Department:	Center for Public Health and Health Policy
Mail Code:	99 Ash Street, 2nd Floor MC 7160 East Hartford, CT 06108
Phone Number:	(860) 282-8525
E-mail:	aferris@uchc.edu, ailton.coleman@uconn.edu

1. Provide the title for your project.

The role of nurturing fathers on adolescent weight status in a national sample

2. Is the project extramurally funded? If yes, provide the name of the funding source, the grant number if known (e.g. RO1CA12345), and attach the grant to the submission.

No.

3. Provide a brief summary of the project.

This project will use the National American Survey of Life -Adolescent dataset to conduct a secondary data analysis to examine the role of reported parental closeness on weight status of adolescents. The NSAL-A dataset is a public national dataset that uses a random selection procedure of the civilian non-institutionalized African American and Caribbean Blacks adolescents (n=1170) who reside in the home of an adult participant of the National Survey of American Life. The analysis will control for age, sex, ethnicity, physical activity, sedentary activity, eating disorders, perception of discrimination and reported health.

4. Provide detailed description of all human material and/or data elements to be used in the project. (tabbing out of the bottom right cell will insert another row)

Human Materials	Data Set Elements/Fields	For IRB Use - Assigned Data Set #
	Demographics (includes age, ethnicity, sex, and living situation) Activities and School (contains information on school activities and experiences) Personality (contains responses on Rosenberg self-esteem, john henryism, cesd-12,pearlin's mastery and cohen's perceived stress) Eating Disorders (contains responses on binge eating and anorexia) Racial Identity(contains response to multidimensional inventory of black identity and racial socialization) Discrimination (contains responses to the everyday discrimination) Health (contains responses to general health perception)	

Media (contains responses on media consumption)

5. Describe the source of the material / data. (e.g. existing samples in (give name of person's lab), purchased samples from (give company name), waste material gathered from (describe accordingly), downloaded data from (describe data source) etc.)

The dataset will be obtained from the University of Michigan's Institute for Social Search

6. Place an **X** after any of the following HIPAA identifiers that will be contained in the data, or indicate that none of the identifiers in this list will be contained in the information, alternatively if no protected health information is being seen or collected indicate that HIPAA is not applicable.

Names	Unique identify #s, characteristics or codes	Geographic Subdivisions	
Phone	Serial #s	Health Plan Beneficiary	
Fax	Account #s	Vehicle Identifiers	
E-mail	Social Security #s	Biometric Identifiers	
URL	License #s	Device Identifiers	
IP Address	Medical Record #s	Dates (except year)	
None of the identifiers listed above will be included with the samples/data used for the study			X
The project does not involve the use of any protected health information, HIPAA is NA			X

7. Describe how the material and/or data will be labeled at the time of receipt.

The dataset only contains de-identified variables. It will be labeled as NSAL-A dataset

If data/samples are coded, such that the provider and/or recipient could link the code back to the individual(s) from whom the data came, answer the following questions:

8. Were the data / specimens collected specifically for the currently proposed research project through an interaction or intervention with living individuals? (If yes, and the data and/or specimens contain information about an individual, the project constitutes human subject research.)

No.

9. Explain how the code is derived; if unknown to anyone on the research team, provide a statement to that effect.

The recoding of the variables are unknown to anyone on the research team and has been done by the original data collection team.

10. Describe the access, ability, possibility for anyone involved with the project to, in any way, link a code to an individual.

No one on the project will have access, ability or possibility to link the code to an individual.

11. Place an **X** after the mechanism(s) in place to minimize the chance of the code being linked to an individual.

The key to decipher the code will be destroyed prior to initiation of the research.	X
The investigator(s) and the key holder have entered into a written agreement prohibiting the release of the key while individuals are living (attach for reference).	
There are existing policies and operating procedures in place for a repository or data management center that have been approved by the IRB and that prohibit the release of the	

key to the investigators under any circumstances, until the individuals are deceased (Provide IRB # of the approved registry/repository).	
There are other legal requirements preventing the release of the key to the investigators (describe accordingly on attached document).	

Am M. Ferri
Signature of Investigator

12/13/2012
Date

FOR IRB USE ONLY:

1. Determine whether the proposed activity constitutes research according to either the Common Rule (45 CFR 46) or the FDA (21 CFR 50).

DHHS Definition of Research:	Yes / No
a. Is the activity a systematic investigation (including research development, testing and evaluation)?	no
b. Is the activity designed to develop or contribute to generalizable knowledge?	yes
FDA Definition of Clinical Investigation:	
c. Any experiment that involves a test article and one or more human subjects that requires prior submission under 505(i) or 520(g) or for which the results are intended to be submitted later to or held for inspection by the FDA as part of an application for a research or marketing permit.	no
Note: If yes to item a and to item b together and /or to item c alone, the activity is research under DHHS and/or FDA regulations. Proceed to question 2. If no to item a or b the activity is not research under DHHS regulations. If no to item c, the activity is not research under FDA regulation. If the activity is not research under either regulation, stop.	

2. Determine whether the activity involves human subjects.

DHHS Definition of Human Subject	Yes / No
a. Are data being obtained about one or more living individuals? (if yes proceed to item b, c and d, if no proceed to item d)	
b. Are the data collected through an intervention (physical procedures by which data are gathered or manipulations of the subject or the subject's environment that are performed for research purposes) or interaction (communication or interpersonal contact between investigator and subject) with the individual?	
c. Is identifiable private information being obtained? Private identifiable information includes behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place or information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public, e.g. medical record, being obtained?	
FDA Definition of Human Subject:	
d. Does the project involve an individual (either a healthy human or a patient) who is or becomes a participant in research, either as a recipient of the test article or as a control?	

e. Does the project involve an individual (in normal health or with a medical condition or disease) who participates in an investigation, either as an individual on whom or on whose specimen an investigational device is used or as a control?	
Note: If no to a, the research does not involve human subjects under DHHS Regulations If yes to a, and also to b and/or c, the research does involve human subjects per DHHS regs If yes to a, and no to b and c – human subjects are not involved per DHHS regulations If no to d and e, the research does not involve human subjects under FDA regulations If yes to d and/or e, the research does involve human subjects per FDA regulations	

Note: Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

IRB DETERMINATION – CHECK THE APPLICABLE CATEGORY(IES):

Human Subject Research Determination

Project is human subject research and will require an IRB submission.	
Project is not human subject research and IRB involvement is not required.	X


HIPAA Determination

Project contains HIPAA defined identifiers and therefore HIPAA must be addressed.	
Project contains no HIPAA identifiers therefore HIPAA does not pertain.	X

If the project is not Human Subject Research but HIPAA must be addressed, provide directions for the investigator to ensure HIPAA compliance:

--

Note to Investigator: If the IRB has determined that a data set does not constitute human subject research, that data set may be used in other projects without additional determinations being made by the IRB. If additions/modifications are made to the data elements/field(s) noted above investigators are strongly encouraged to resubmit the revised information to the IRB for another determination.


Signature of IRB reviewer making the determination

3/11/14
Date



University of Connecticut Health Center



Human Subjects Protection Office Institutional Review Board

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Farmington Avenue Farmington CT 06030-3926
Telephone: 860-679-3054
Facsimile: 860-679-1005 <http://hspo.uchc.edu/>

To: Ann M. Ferris, Ph.D.
Principal Investigator
UCHC-U. of CT Health Center - Center for Public Health

From: UConn Health Center
IRB Office

Date: April 23, 2014

Re: Final Approval of Expedited Project

IRB Number: 14-161-1

IRB Panel: Panel 1

Project Title: The Role of Fathers on Masculinity and Obesity in Adolescent African American Males

Submission Reference #: 002673

Sponsor / Funding Agency: Principal Investigator

Approved Key Study Personnel: Ailton Santonio Coleman, MPH

Protocol Version: The Role of Fathers Version 1

Consent Version: Letter of Consent are provided as attachments for IRB approval. Researcher are requesting waiver of documented consent.

Children: 45 CFR 46.404/ 21 CFR 50.51): Not greater than minimal risk 1 parent signature

The study referenced above has received final approval from the IRB. The study was approved on 04/23/2014. IRB approval expires end of day on 04/22/2015. IRB approval will lapse the following day unless final approval of a request for continuation has been obtained. If this is the first time you are acting as PI at UCHC, you must schedule an educational session with the Educational Specialist within the HSPO. Please call x8802 to do so.

Your request for continuation is due by 03/22/2015. The IRIS system should automatically send 30, 60 and 90 day reminder notices; however the Principal Investigator is ultimately responsible for requesting continuation. **Adding a reminder to your outlook calendar is suggested.**

The study was determined to qualify for expedited review as follows:

Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Please also note the following:

- If applicable to your study, copies of the IRB stamped and dated informed consent form must be used when obtaining consent. The consent form must be **signed and dated by both** the participant and the individual obtaining consent.
- It is the responsibility of the PI to ensure that all investigators and staff associated with this study 1) follow the approved protocol; 2) use the approved forms; 3) comply with all IRB policies including the reporting of non-compliance with the approved protocol, unanticipated problems involving risk to subjects or others, and any suspensions or terminations of IRB approval; and 4) comply with applicable regulations and the requirements or determinations of the IRB. Policies are available from the web site, <http://hspo.uchc.edu/>. Please note, studies supported by any component of the Department of Defense (DOD) must also have approval from the DOD Human Research Protection Official before they can begin. Studies supported by the National Institute of Justice (NIJ) must have in place a Privacy Certificate approved by the NIJ Human Subjects Protection Officer before the study can begin.
- If applicable PI's are also responsible for ensuring that IRB approval has been obtained and maintained at any collaborating sites involved in the research.
- All approved studies are also subject to audit by the Research Compliance Monitor



Institutional Review Board
Human Subjects Protection Office

**Human Subjects Protection Office
Institutional Review Board**

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Telephone: 860-679-3054
Facsimile: 860-679-1005 <http://hsपो.uchc.edu/>

To: Ann M. Ferris, Ph.D., Principal Investigator

From: IRB Office

Date: May 18, 2015

Re: Final Expedited Approval for Continuation

IRB Number: 14-161-1

IRB Panel: Panel 1

Project Title: The Role of Fathers on Masculinity and Obesity in Adolescent African American Males **Submission Reference #:** 005322

Sponsor / Funding Agency: Principal Investigator

Approved Key Study Personnel: Ailton Santonio Coleman, MPH

Children: 45 CFR 46.404/ 21 CFR 50.51): Not greater than minimal risk 1 parent signature

The study referenced above has received final approval for continuation from the IRB. The study was approved for continuation on 05/15/2015. The study was determined to qualify for expedited review as follows: Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Approval for this study expires end of day on **05/14/2016**, meaning you cannot conduct research **after** that date unless final approval for continuation has been obtained. Your request for **continuation is due by 04/15/2016**. The IRIS system should generate reminder notices regarding the need to request continuation; but the PI is ultimately responsible to submit this request. **Adding a reminder to your outlook calendar is suggested.**

Approval from the IRB for any modification to the study (e.g. change in design, change in research team, addition, removal or change to survey tool, change in funding source, change to consent form or recruitment material etc.) must be obtained prior to implementation, except when necessary to eliminate immediate hazards to the subjects in which case the change must be reported within 5 days of occurrence.

Please also note the following:

- It is the responsibility of the PI to ensure that all investigators and staff associated with this study 1) follow the approved protocol; 2) use the approved forms; 3) comply with all IRB policies including the reporting of non-compliance with the approved protocol, unanticipated problems involving risk to subjects or others, and any suspensions or terminations of IRB approval; and 4) comply with applicable regulations and the requirements or determinations of the IRB. Policies are available from the web site, <http://hspo.uchc.edu/investigators/HSPOPolicies.html>.
- If applicable PI's are also responsible for ensuring that IRB approval has been obtained and maintained at any collaborating sites involved in the research.
- All approved studies are also subject to audit by the Research Compliance Monitor

As a reminder, if you are going to recruit subjects through any type of advertising (fliers, newspaper ads, radio ads, web advertising, Billboards, etc.) all materials must be reviewed and approved by the Office of Brand Development and Communications.

263 Farmington Avenue
Farmington CT 06030-3926
Telephone: 860-679-3054 Fax: 860-679-1005 Web: <http://hspo.uchc.edu>

IRB APPROVAL DATE: 05/15/2015

This form must be completed by both the investigator and becomes part of the official IRB study file.

PI Name: Ann M. Ferris, Ph.D., R.D.

Project Title: The Role of Fathers on Masculinity and Obesity in African American Adolescent Males

Request for Waiver of the Requirement to Document the Consent of Subjects

The IRB may waive the requirement to obtain a signed consent form while still requiring the consent process to occur. The IRB may waive the requirement to obtain a signed consent form for some or all subjects if it finds either of the two elements noted below are satisfied. The IRB may still require the investigator to provide subjects with a written statement regarding the research and investigators are strongly encouraged to submit such a summary, addressing elements of consent, in conjunction with this request for waiver. The IRB reserves the right to deny such requests and to require written documentation. Select the category under which you are requesting the waiver. Option 2 is most common for expedited research.

1. ☐ That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. In such a case each subject must be asked if s/he would prefer to sign an informed consent document that links his/her participation with the study. The subject's wishes prevail. Therefore, a consent document must still be submitted to the IRB for approval in the event that a subject chooses to sign. The IRB may also require that a written summary of the research be provided to the subjects. The consent form may serve as the summary. Not applicable to FDA Regulated Studies.
- 2) ☒ That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context. The IRB may also require that a written summary of the research be provided to the subjects. In such cases the written summary must be reviewed and approved by the IRB.

Therefore, when requesting a waiver of documentation under item 2, investigators are advised to also submit a written summary for review and approval.

Describe how the criteria for the selected option are satisfied (cell will expand to accommodate text):

Justification:

Participants will be given a written summary of the research to review before deciding to participate in the study. The research does not present more than greater risk for participants. Participants will be asked to complete a set of questionnaires related to demographic information, anthropometric measures, masculine ideology, discrimination, eating habits and father-son relationships. In and of themselves the questionnaires are no more evasive than one would experience during a routine ordinarily encountered in daily life or during the performance of routine physical or psychological examinations. Investigators will inform participants that they may choose not to answer any question that they feel uncomfortable with and that participation is totally voluntary. Participants may choose to stop participation at any time. Moreover, the only record linking the subject to the research would be the consent document as no identifiers are collected.

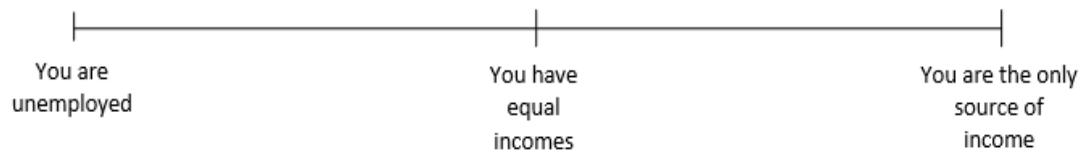
Note: For waivers or alterations reviewed by the convened board the IRB Coordinator will document determinations for each criteria and the approval outcome in the minutes. For expedited review, information put forth by the PI and determination of reviewer as noted on reviewer form will serve as documentation. The approvals of waivers will be noted on the IRIS outcome page.

3/31/13 for online submissions, 5/4/07 10/6/2004

1. Age: _____
2. Educational Level: (Check the highest level that fits you.)

_____ High School Diploma/GED	_____ Freshman	_____ Sophomore
_____ Junior	_____ Senior	_____ Bachelors'
_____ Master's	_____ Ph.D	_____ Other (Specify)
3. Present Marital Status: _____ Married _____ Single _____ Divorced
_____ Remarried _____ Widowed
4. Employment: _____ Unemployed _____ Employed (Part-time) _____ Employed (Full-time)
5. Number of Children: _____
6. Age of Oldest Child: _____
7. What was your father's highest education level

_____ Less than High School	_____ High School Diploma/GED
_____ Freshman	_____ Sophomore
_____ Junior	_____ Senior _____ Bachelors'
_____ Master's	_____ Ph.D. _____ Other(Specify)
8. Does your son live with you? _____ yes, full time _____ yes, part time _____ no
9. Did you live with your father as a teenager? _____ yes, full time _____ yes, part time _____ no
10. Is your son? a) Underweight b) Normal Weight c) Overweight d) Obese
11. Are you? a) Underweight b) Normal Weight c) Overweight d) Obese
12. How would you compare your income to the mother of your son's income (Mark on the line)



The Role of Fathers

Father's Demographic Form

IRB Review

IRB NUMBER: 14-161-1

IRB APPROVAL DATE: 05/15/2015

IRB EXPIRATION DATE: 05/14/2016

13. Weight _____/_____/_____ (lbs)

14. Height _____/_____/_____ (inches)

15. Waist Circumference _____/_____/_____ (inches)

1. Age: _____
2. Educational Level: (Check the highest level that fits you.)
☐ Freshman ☐ Sophomore ☐ Junior ☐ Senior
☐ High School Diploma/GED
3. Order of Birth: _____
4. Number of Older Brothers _____ Older Sisters _____
5. Race: (Check the category that best fits you)
☐ African American Only
☐ Bi-Ethnic African American (+)
☐ European American ☐ Asian American
☐ Latino ☐ Native American
☐ African ☐ Caribbean Black
6. Do you live with your father fulltime (yes/no) _____
If no, over the past 12 months when have you stayed with your father?
a) Summers b) Weekends c) Holidays d) School Year e) Week
7. Is your father : a) Underweight b) Normal Weight c) Overweight d) Obese
8. Are you: a) Underweight b) Normal Weight c) Overweight d) Obese
9. Weight _____ (lbs)
10. Height _____ (inches)
11. Waist Circumference _____ (inches)

Everyday Discrimination Scale

In your day-to-day life, how often do any of the following things happen to you? Please circle the best answer

1. **You are treated with less courtesy than other people are.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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2. **You are treated with less respect than other people are.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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3. **You receive poorer service than other people at restaurants or stores.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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4. **People act as if they think you are not smart.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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5. **People act as if they are afraid of you.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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6. **People act as if they think you are dishonest.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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7. **People act as if they're better than you are.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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8. **You are called names or insulted.**

Almost <i>everyday</i>	At least once <i>a week</i>	A few times <i>a month</i>	A few times <i>a year</i>	Less than <i>once a year</i>	Never
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9. **You are threatened or harassed.**

What do you think is the main reason for these experiences? (CHECK MORE THAN ONE IF VOLUNTEERED).

1. Your Ancestry or National Origins
2. Your Gender
3. Your Race
4. Your Age
5. Your Religion
6. Your Height
7. Your Weight
8. Some other Aspect of Your Physical Appearance
9. Your Sexual Orientation
10. Your Education or Income Level

OTHER POSSIBLE CATEGORIES TO CONSIDER

1. A physical disability
2. Your shade of skin color (NSAL)

Other (SPECIFY) _____

Version 1

1

Gender Conflict Scale Short Version

Instructions: In the space to the left of each sentence below, write the number that most closely represents the degree that you Agree or Disagree with the statement. There is no right or wrong answer to each statement; your own reaction is what is asked for.

Strongly Agree						Strongly Disagree
6	5	4	3	2		1

1. ____ Finding time to relax is difficult for me.
2. ____ Winning is a measure of my value and personal worth
3. ____ Affection with other men makes me tense.
4. ____ I like to feel superior to other people.
5. ____ Talking about my feelings during sexual relations is difficult for me.
6. ____ I have difficulty expressing my emotional needs to my partner.
7. ____ Men who touch other men make me uncomfortable.
8. ____ I have difficulty expressing my tender feelings.
9. ____ Hugging other men is difficult for me.
10. ____ My needs to work or study keep me from my family or leisure more than would like.
11. ____ I strive to be more successful than others.
12. ____ I do not like to show my emotions to other people.
13. ____ My work or school often disrupts other parts of my life (home, family, health leisure).
14. ____ Being very personal with other men makes me feel uncomfortable.
15. ____ Being smarter or physically stronger than other men is important to me.
16. ____ Overwork and stress caused by a need to achieve on the job or in school, affects/hurts my life.

Thank You for Your Participation

Gender Role Conflict Scale Adolescent

Instructions: In the space to the left of each sentence below, write the number that most closely represents the degree that you Agree or Disagree with the statement. There is no right or wrong answer to each statement; your own reaction is what is asked for.

Strongly Agree						Strongly Disagree
6	5	4	3	2	1	

1. ____ Doing well all the time is important to me.
2. ____ Strong emotions are difficult for me to understand.
3. ____ Expressing feelings makes me feel open to attack by other people.
4. ____ Telling others about my strong feelings is difficult to me.
5. ____ Sometimes I define my personal value by my success at school.
6. ____ Getting to the top of my class is important to me.
7. ____ My need to work or study keeps me from my family or leisure more than I would like.
8. ____ I have difficulty telling others I care about them.
9. ____ I worry about failing and how it affects my doing well as a man.
10. ____ I strive to be more successful than others.
11. ____ Affection with other men makes me tense.
12. ____ When I am personally involved with others, I do not express my strong feelings.
13. ____ My work or school often disrupts other parts of my life (home, health,leisure).
14. ____ Making money is part of my idea of being a successful man.
15. ____ I often have trouble finding words that describe how I am feeling.
16. ____ Finding time to relax is difficult for me.
17. ____ Being very personal with other men makes me feel anxious.
18. ____ I feel torn between my hectic work or school schedule and caring for my health.
19. ____ I am sometimes hesitant to show my affection to men because of how others might judge me.

- 20. ___ Overwork and stress caused by the need to achieve on the job or in school effects or hurts my life.
- 21. ___ Hard for me to talk about my feelings with others.
- 22. ___ Men who are too friendly to me make me wonder about their sexual preference (men or women).
- 23. ___ It's hard for me to express my emotional needs to others.
- 24. ___ Expressing my emotions to other men is risky.
- 25. ___ I do not like to show my emotions to other people.
- 26. ___ Hugging other men is difficult for me.
- 27. ___ My career, job, or school effects the quality of my leisure or family life.
- 28. ___ Verbally expressing my love to another man is hard for me.
- 29. ___ I judge other people's value by their level of achievement and success.

Emotional Eating Scale

We all respond to different emotions in different ways. Some types of feelings lead people to experience an urge to eat. Please indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box.

	No Desire to Eat	A Small Desire to Eat	A Moderate Desire to Eat	A Strong Urge to Eat	An Overwhelming Urge to Eat
Resentful					
Discouraged					
Shaky					
Worn Out					
Inadequate					
Excited					
Rebellious					
Blue					
Jittery					
Sad					
Uneasy					
Irritated					
Jealous					
Worried					
Frustrated					
Lonely					
Furious					
On edge					
Confused					
Nervous					
Angry					
Guilty					
Bored					
Helpless					
Upset					

We all react to different feelings in different ways. Some types of feelings make us want to eat. Please let us know how much the following feelings make you want to eat by checking the appropriate box.

EXAMPLE						
WHEN I FEEL THIS WAY	I have no desire to eat	I have a small desire to eat	I have a moderate desire to eat	I have a strong desire to eat	I have a very strong desire to eat	On average, how many days a week do you eat because you feel this way? (0-7)
Starving					X	3
WHEN I FEEL THIS WAY	I have no desire to eat	I have a small desire to eat	I have a moderate desire to eat	I have a strong desire to eat	I have a very strong desire to eat	On average, how many days a week do you eat because you feel this way? (0-7)
Resentful						
Discouraged						
Shaky						
Worn Out						
Not doing enough						
Excited						
Disobedient						
Down						
Stressed out						
Sad						
Uneasy						
Irritated						
Jealous						
Worried						
Frustrated						
Lonely						
Furious						
On edge						
Confused						
Nervous						
Angry						
Guilty						
Bored						
Helpless						
Upset						
Happy						