

EMOTIONAL EATING IN EARLY JAMAICAN ADOLESCENTS: THE ROLE OF REMOTE  
ACCULTURATION, PSYCHOLOGICAL DISTRESS, AND U.S. MEDIA

BY

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THESIS

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## Abstract

The present study explored emotional eating patterns of youth living in the Caribbean. The aims of this study were to: (1) investigate the correlation between emotional eating and unhealthy eating in Jamaican adolescents; (2) evaluate the association between psychological distress (anxiety & depression) and emotional eating as moderated by gender and (3) to determine if remote acculturation mediates the association between consumption of US-produced media and emotional eating. Data were used from the Culture, Health, and Family Life Study, a multidisciplinary exploration of Americanization as a potential risk factor for adolescent obesity in Jamaica. Overall, 330 Jamaican adolescents (210 girls and 120 boys) between the ages of 11 and 18 ( $M = 13.81$ ,  $SD = 1.76$ ) completed surveys at three schools in Kingston, Jamaica. Adolescents most commonly reported eating in response to feeling happy (88%), while boredom was the second most common emotion prompting eating (84%). A positive correlation was found between emotional eating and unhealthy eating for girls only. Gender did not moderate the relationship between psychological distress and eating in response to depressive symptoms and no mediation was found. US-produced media consumption on a weekday positively predicted remote acculturation (European American orientation), however, neither US-produced media consumption nor remote acculturation predicted emotional eating.

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## Chapter 1: Introduction

Over the past forty years, Caribbean countries have developed a steady increase in the incidence of both obesity and nutrition-related chronic non-communicable diseases (NCDs) (Xuereb, Johnson, Bocage, Trotter, & Henry, 2001). While an important issue present in the United States, childhood and adolescent obesity have become a global epidemic, particularly in developing countries such as Jamaica (Durazo-Arvizu et al., 2008). A factor reported to be a powerful potent of obesity is *emotional eating* (Andrews, Lowe, & Clair, 2011; Ganley, 1989). Emotional eating is defined as "eating in response to a range of negative emotions...to cope with negative affect" (Faith, Allison, & Geliebter 1997, p.440) and is more common in females than males (Synovate, 2009; Vohs & Baumeister, 2011). Emotional eating in the United States is greatly influenced by food advertising via US-produced media (Kemp & Grier, 2011) and is linked to depression, anxiety (Van Strien, Engels, Van Leeuwe, & Snoek, 2005) and higher consumption of unhealthy foods (Kemp & Grier, 2011). Is it possible that emotional eating patterns of youth living in the Caribbean may also be influenced by imported US-produced media through a modern type of globalization-related acculturation?

Research has demonstrated that remote acculturation (RA), defined as "nonmigrant acculturation arising from indirect and/or intermittent intercultural contact with geographically separate culture(s)" (Ferguson, 2013, p.250), is resulting in the psychological Americanization of 1 in 3 Jamaican teenagers (Ferguson & Bornstein, 2012, & 2015). Youth in Jamaica may be exposed to emotional eating patterns from US-produced media and experience remote acculturation. US-produced media consumption is one of the primary variables associated with remote acculturation in Jamaican youth, revealing the possibility that emotional eating shown within American media is being internalized by Jamaican youth (Ferguson & Bornstein, 2012, & 2015). Furthermore, consumption of US-produced media, which includes messages promoting emotional coping through the use of food, may be an avenue through which Jamaican youth and their mothers are adopting unhealthy dietary and emotional eating behaviors. Are youth internalizing the unhealthy dietary and emotional eating behaviors that are frequent in the United States via the US-produced media? No previous studies have examined emotional eating in adolescents in the Caribbean, and no study has yet linked emotional eating to Americanization of youth in other countries. This study aims to (1) investigate the correlation between emotional eating and unhealthy eating in Jamaican adolescents; (2) evaluate the association between psychological distress (anxiety & depression) and emotional eating as moderated by gender (3) to determine if remote acculturation mediates the association between consumption of US-produced media and emotional eating.

## Chapter 2: Literature Review

### Acculturation & Globalization

Acculturation is a process of cultural and psychological change following intercultural contact prompted by globalization, which is “the multiplicity of linkages and interconnections that transcend the nation-states” and includes the flow of cultural elements (ideas, goods etc.) (Berry, 2008, p.1). It is conceptualized to include dimensions and domains. Dimensions are the cultures with which an individual has engaged to some degree. Individuals may acculturate along multiple dimensions where they acquire the practices or customs of a culture separate from their home culture with or without discarding or giving up the practices and customs of their cultural heritage (Berry, 2010). As a multi-domain process, acculturation can occur differently in some domains than others. The domains that make up acculturation are cultural practices (behavior), cultural values, and cultural identifications (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Cultural practices include behaviors such as language use, choice of association/friends, media and food preferences. Cultural identifications refers to how one sees themselves with regard to ethnic identity and cultural values refers to belief systems associated with a specific group.

Berry’s (1980) bidimensional framework was most common among researchers in which individuals acculturate along two separate cultural dimensions based on the degree of preference for maintaining one’s ethnic heritage culture and involvement in the nonnative culture. These two dimensions intersect to create 4 acculturation types. The typology proposed by Berry suggests that an acculturating individual can be highly oriented toward both cultures (Integrated), mainly oriented toward culture B (Assimilated), have a low orientation toward both cultures (Marginalized) or be mainly oriented toward culture A (Separated). Research has suggested that a tridimensional model is more appropriate for some acculturating individuals in multicultural societies as some individuals acculturate along three or more dimensions (Ferguson, 2013).

The earliest version of acculturation theory emphasized continuous, first-hand intercultural contact in which members of one cultural group adopt the beliefs and/or behaviors of another group (Berry, 2008). 21<sup>st</sup> century globalization such as technology, trade, transport and media have all presented the opportunity of indirect culture contact. Skype, Facebook, television, and other popular media sources have all provided a means of communicating with individuals from around the world offering numerous avenues through which one can learn about or adopt the beliefs and/or behaviors of another group through indirect or infrequent contact. These new advancements in the 21<sup>st</sup> century have challenged the original definition of acculturation which emphasized direct and face to face contact and presented the opportunity for nonimmigrants to acquire the knowledge and practices of a geographically separate culture.

## **Remote Acculturation**

**Theory.** As a product of globalization, remote acculturation captures the modern global mechanisms through which meaningful communication and interaction occurs via media (Ferguson, Tran, Mendez, & van de Vijver, in press). Remote acculturation was first introduced in a 2012 study that reported patterns of behavior, identity, and family values among some families from one culture (Jamaica) which resembled patterns among families from a geographically separate culture (European American) (Ferguson & Bornstein, 2012). In reviewing how acculturation theory was first defined, the most significant changes in this iteration of the theory is the remote experience of non-migrant individuals with a geographically and historically separate culture. Equally important are the indirect and intermittent aspects of the definition. Indirect contact includes media (Facebook, Youtube, Skype, etc.) while intermittent contact is contact which occurs infrequently (e.g., interactions with a tourist). As a pioneer in the development of remote acculturation theory, Ferguson has suggested that “acculturation can now be defined as what happens when groups or individuals of different cultures come into contact - whether continuous or intermittent, firsthand or indirect with subsequent changes in the original culture patterns of one or more parties.” (Ferguson, 2013, p. 249).

In applying the acculturation typology proposed by Berry (1980) to remote acculturation, assimilation can be seen as individuals being mainly oriented toward the remote culture; integration can be seen as individuals becoming highly oriented to both the remote culture and traditional culture; marginalization is seen when both the traditional and remote cultures are rejected; and separation is seen when individuals abide by traditional customs while rejecting orientation toward the remote culture.

**Measurement.** One of the most important factors in measuring remote acculturation is the knowledge of the relevant cultures being investigated within the study (the remote culture and the native or traditional culture). Research has demonstrated that European American culture is very prominent in Jamaica. Ferguson and Iturbide (2013) conducted a qualitative study investigating how Jamaican boys perceived Jamaican and American cultures. Study findings indicated that media representations informed perceptions of US and Jamaican cultures. Boy’s perceived Jamaican culture as aggressive, anti-gay and fashion-obsessed and American culture as spoiled, crazy, privileged and rebellious. Although descriptions of both cultures were dissimilar, particularly in terms of parenting style, they were alike in terms of the adolescent sensation seeking experiences. The boy’s description of a typical American teenager fell in line with white European American culture, but their perception of European American culture was very stereotyped. US-produced cable and television shows are the primary source of information for Jamaican boys and many shows offer a one-dimensional view of American families. A focus on European American culture is central to this study as Jamaican youth have well defined perceptions of white European American culture based on US-produced media exposure.

Arends-Toth and Van de Vijver (2006) report that the acculturation process includes conditions, orientations and outcomes. Acculturation conditions are the limits and demands of the acculturation process. A variety of variables create the opportunity for RA to occur such as, food, media, and consumer goods. Acculturation orientations refer to an individual's inclination to adopt the remote culture (in terms of behavior, values, etc.) and their ability to maintain the local traditional culture. For example, a Jamaican-born adolescent may enjoy watching American TV and eating American foods, but still be strongly oriented to certain Jamaican cultural values. Most acculturation studies including remote acculturation focus on orientations. Following conditions and orientations, three types of outcomes have been studied: positive psychological well-being, sociocultural outcomes in the remote culture, and sociocultural outcomes in the native (local) culture. Psychological well-being is assessed by measures of happiness/well-being and distress. Examples of sociocultural outcomes include knowledge of the mainstream language or music and having friends in each culture.

The main statistical procedure used to determine remote acculturation in prior studies is cluster analysis. The purpose of cluster analyses is to identify clusters of individuals with similar patterns of scores, but whose patterns of scores differ from those of individuals in other clusters (Mooi & Sarstedt, 2011). Prior RA research in Jamaica has determined RA by inputting various acculturation indicators into cluster analyses, including European American cultural practices and identity, Jamaican orientation, family values (adolescent obligations and rights) variables, intergenerational discrepancies, and parent-adolescent conflict. Results have revealed an "Americanized" Jamaican cluster with a stronger orientation towards European American cultural practices and identity, lower family obligations, larger intergenerational discrepancies, weaker Jamaican orientation and higher parent-adolescent conflict. (Ferguson & Bornstein, 2012 & 2015; Ferguson & Iturbide, 2013). RA cluster analyses have revealed a number of RA clusters in Jamaica and elsewhere (Ferguson, Ferguson, & Ferguson, 2015), which can be used as independent variables in subsequent analyses to explore differences in well-being (i.e. emotional eating) and US-produced media consumption.

**Remote acculturation empirical findings and relations with U.S. Media.** Ferguson and Bornstein (2012) first discussed this notion of Americanization in Jamaica via a cross-sectional study described earlier comparing Jamaican islander adolescents and mothers with Jamaican immigrant dyads, African American dyads and European American dyads living in the United States. Results highlighted an Americanized group of urban Jamaican adolescents and a small percentage of mothers that embrace a part-American identity and adopt American family values (Ferguson & Bornstein, 2012; Ferguson & Iturbide, 2013). That is, Jamaican islanders fell into integrated (Americanized Jamaican) and separated (Traditional Jamaican) acculturation strategies. Similar results were found in a replication of Ferguson and Bornstein's 2012 original study (Ferguson & Bornstein, 2015). US-produced media via cable was the

largest influence of American culture. Ferguson and Bornstein (2015) reported that higher US-produced TV consumption and lower local TV consumption was linked with higher odds of falling into the Americanized Jamaican cluster, particularly for girls.

Ferguson and colleagues (2015) also suggested that the consumption of US-produced media allows individuals to meet certain needs like identity formation and apply those media messages to other acculturation domains such as values, behaviors, and identity. These Americanized Jamaicans living on the island also consume more U.S. food and less local food than their culturally traditional peers (Ferguson & Bornstein, 2015).

### **Emotional Eating**

Emotional eating has been identified as a factor that promotes the development and maintenance of obesity while hindering its treatment (Andrews, Lowe, & Clair, 2011). The concept of emotional eating originates from Bruch (1964), who theorized that emotional eaters are unable to differentiate the sensations of hunger from emotional arousal. Faith, Allison, and Geliebter (1997) noted that emotional eating is a broad construct that involves eating in response to a range of negative and positive emotions across a broad variety of situational stimuli. Emotional Eating has been linked to higher consumption of unhealthy foods (i.e., foods high in fat, sugar and salt) (Kemp & Grier, 2011) negative nutritional and psychological outcomes (Perpiñá, Cebolla, Botella, Lurbe, & Torró, 2011) and depression and anxiety (Van Strien, Engels, Van Leeuwe, & Snoek, 2005). Kemp and Grier (2011) identified significant outcomes of emotional eating, namely a decreased motivation to process nutritional information and overconsumption. Emotional eaters are prone to consuming and sometimes overconsuming unhealthy foods when experiencing negative and positive emotional states. It has been confirmed empirically that obese people engage in significantly more emotional eating than the non-obese, however, O'Conner and colleagues (2008) demonstrated that emotional eating also affects normal healthy weight individuals.

Emotional eaters are identified by emotional eating scales that measure the self-reported tendency to eat in response to both negative and positive mood states. Examples of emotional eating scales include the Emotional Eating Scale for adults, (EES) (Arnou, Kenardy, & Argas, 1995), the Dutch Eating Behavior Questionnaire, (DEBQ) (Van Strien, Frijters, Bergers & Defares, 1986) and the Emotional Eating Scale for Children and Adolescents (EES-C) (Tanofsky-Kraff et al., 2007)). The Emotional Eating Scale for Children and Adolescents (EES-C) is a 25-item self-report measure used to assess the urge to cope with negative affect by eating. The EES-C generates three subscales; (1) eating in response to anxiety, anger, and frustration subscale (EES-C-AAF), (2) eating in response to symptoms of depression subscale (EES-C-DEP), and (3) eating in response to feeling unsettled subscale (EES-C-UNS). Tanofsky and colleagues (2007) reported that girls were significantly more likely to endorse eating in response to depressive symptoms and feeling unsettled than boys. Eating in response to feeling happy was the most

commonly endorsed emotion with eating in response to boredom as the second commonly endorsed emotion. Hong and colleagues (2013) found that girls reported eating significantly more often in response to the depression and anxiety factors whereas there was no difference between boys and girls on eating in response to anger/hostility and positive emotions (Hong, Taisheng, Gui, & Bin, 2013).

Emotions influence people's eating behavior, including food choice, motivation to eat, and amount of food intake. More consumers today tend to choose foods with which they can emotionally resonate with (Porcherot et al., 2010) and thus their choices differ depending on a number of factors (hunger, appetite, cost, accessibility of food, cooking and time), and culture (Lowe, Bocarsly, & Parigi, 2008). Furthermore, it is common for individuals to desire different types of foods depending on their mood state. Positive emotions may entice more social or luxurious eating patterns (i.e. eating a steak dinner with friends), while depressive symptoms may entice eating comfort foods (i.e. ice cream, french fries, pasta) (Jiang, King, & Prinyawiwatkul, 2014). Additionally, research has shown that individuals who eat emotionally may be doing so because others (family or friends) are socially facilitating such behavior (Kemp & Grier, 2011).

**Emotional eating and U.S. media.** Research has supported the link between media consumption and emotional eating. Emotional eating images are presented frequently in US-produced TV shows and commercials. For example, consider a Weight Watchers commercial of people eating unhealthy foods in response to negative and positive emotions (Weight Watchers, 2014) or a teen drama television series depicting teenagers binge-eat in response to negative emotions (Savage, Schwartz, & Safran, 2007). Emotional eating is greatly influenced by food advertising, which can, in turn, stimulate desire and repetitive thoughts about food (Kemp & Grier, 2011). Furthermore, Mohr, Wilson, Dunn, Brindal & Wittert (2007) demonstrate that food advertisements are significantly associated with unhealthy food consumption decisions and contain emotional appeals that promote snacking (Wicks, Warren, Fosu & Wicks, 2009). Critics have since blamed America's obesity problem on food advertising (Desrochers & Holt, 2007), which suggests that American media is an avenue through which one can adopt unhealthy dietary and emotional eating behaviors. Bandura's Social learning theory states that people learn through observing others' behavior, attitude, and outcomes of those behaviors (Bandura, 1977). Additionally, the theory suggest that most human behavior is learned observationally through modeling. Therefore, adolescents may observe emotional eating behavior (individuals eating in response to feeling upset or sad) via media and then began to model those same behaviors.

Moreover, movies and TV series, particularly those targeted toward pre-teens and teenagers, are shown in US-produced media with a variation of scenes with individuals depicting unhealthy eating behavior as an emotional coping technique. Research has shown that emotional eating is related to reliance on emotion-oriented coping (Spoor, 2007), particularly in women. Additionally, Raspopow and

colleagues (2013) found that emotional eating behaviors were highly correlated with emotion-oriented coping.

### **Remote Acculturation and Emotional Eating**

**Acculturation and western diet.** The domain of acculturation most relevant to emotional eating is cultural practices which include media and food preferences. Consumption of US-produced media which includes emotional coping through the use of food may be an avenue through which Jamaican youth are adopting unhealthy dietary and emotional eating behaviors. There is evidence that acculturation is linked to dietary habits among immigrants. Immigration to the United States is usually accompanied by environmental and lifestyle changes that can increase disease risk for example, adoption of U.S. dietary patterns that tend to be high in fat (Satia et al., 2001). Satia and colleagues (2001) noted that the nature of exposure to the host culture (e.g., television, media, friendships) may lead to changes in diet, attitudes and beliefs; and/or taste preferences in immigrants. For example, exposure to nutrition messages through the media can modify beliefs about diet and chronic disease risk. Much remains to be known about the association between modern forms of acculturation such as remote acculturation, the consumption of both western and traditional eating patterns and changes in attitudes and beliefs.

The remote acculturation framework offers a useful lens to investigate the influence of American culture via media and food on individual dietary patterns in Jamaica. RA theory has demonstrated that youth internalize Western culture from afar in terms of their beliefs, attitudes, and identity. Is it also possible that youth are internalizing the unhealthy dietary and emotional eating behaviors via the media that are common in the United States?

### **Adolescent Development**

**Related influences of adolescent development.** Adolescence is the optimal period of time for identity development and exploration. In this process, adolescents explore their own values, ethnic identity, interests, and their social networks (Erikson, 1968). Ferguson and Bornstein (2015) reported that RA may be important among early adolescents as modern methods of intercultural contact (media) are already prominent in the lives of today's youth. Roberts (2000) found that adolescents spend about one-third of their day engaged with media. Furthermore, Strasburger and colleagues (2010) reported that adolescents spend an average of seven hours per day using media. Adolescence is also a critical time period for the emergence of mental disorders as well (World Health Organization, 2005). Equally important to note is adolescents' susceptibility to behaviors seen via media, including unhealthy eating patterns and emotional eating (Nguyen-Rodriguez, Unger, & Spruijt-Metz, 2009). No previous studies have examined emotional eating in adolescents and children in the Caribbean, and no study has yet linked emotional eating to Americanization of youth in other countries.

## **The Current Study**

The aim of the current study is to determine the presence of emotional eating in Jamaican adolescents and the associations among emotional eating and other factors namely, unhealthy eating, US-produced media, specific remote acculturation variables and psychological distress. It is expected that emotional eating will be positively associated with unhealthy eating in Jamaican adolescents. Moreover it is expected that psychological distress and emotional eating will be moderated by gender, such that girls will have higher psychological distress and emotional eating than boys. Lastly, remote acculturation is expected to mediate the association between consumption of US-produced media and emotional eating.

### Chapter 3: Methods

In 2014, Dr. Gail Ferguson in conjunction with colleagues from the University of Illinois and the University of West Indies (UWI) started a multidisciplinary exploration of Americanization as a potential risk factor for adolescent obesity in Jamaica. This project is now known as the Culture, Health, and Family Life Study (CHFLS). Mothers and their adolescents completed surveys at three schools in Kingston, Jamaica. Only adolescent data were used in the current study. Additionally, select measures from the CHFLS were used to address the specific research questions of this study.

#### Participants

330 Jamaican adolescents were sampled (210 girls and 120 boys) between the ages of 11 and 18 years ( $M = 13.81$ ,  $SD = 1.76$ ).

#### Measures

**Emotional eating.** Participants completed the Emotional Eating Scale Adapted for Children and Adolescents (EES-C) (Tanofsky-Kraff et al., 2007) which is a 25-item self-report measure used to assess the urge to cope with negative affect by eating. Respondents are asked “We all react to different feelings in different ways. Some types of feelings make us want to eat. Please tell us how much the following feelings make you want to eat.” Participants rate their desire to eat in response to each emotion on a 5-point scale (“I have no desire to eat” through “I have a very strong desire to eat”). Higher scores indicate a greater reported desire to eat in response to negative mood states. Based on the validation sample of this measure (Tanofsky et al., 2007), the EES-C generates three subscales by calculating the mean of items reflecting the urge to eat in response to anxiety/anger/frustration (EES-C-AAF), depression (EES-C-DEP), and feeling unsettled (EES-C-UNS). The validation samples included 159 children and adolescents that were participating in a nonintervention, metabolic study at the National Institutes of Health (NIH) in the United States. Participants in Tanofsky and colleagues’ study were predominantly white with a moderate percentage of black participants. The EES-C had good convergent and discriminant validity, and test-retest reliability for assessing emotional eating in children in that study (Tanofsky-Kraff et al., 2007).

Some minor adaptations were made to the scale to make it more culturally understandable for the current study. The example question, response and stem were removed as it was not necessary for the present study. The column to the right asking “On average, how many days a week do you eat because you feel this way?” was removed. Originally it was included in the scale to determine the association between numbers of days per week children ate in response to each emotion and body weight; however, those variables are not being examined in this study. Additionally, synonyms and words of similar meaning were added in parentheses to clarify understanding of the following words: Resentful

(Offended), Shaky (Scared), Worn Out (Tired), Not doing enough (Mediocre/Inadequate), Down (Depressed), on edge (Tense).

A factor analysis was done to determine if the items on the EES-C subscales replicated in this sample of Jamaican adolescents. Following Tanofsky and colleagues (2007), “shaky” and “worn out” were removed prior to running analyses. A factor analysis was conducted using a scree-test and simple structure criteria using the remaining 23 items from the adapted EES-C (i.e., not containing the additional item, “happy”) in order to validate the scale in a Caribbean population. All analyses were conducted using SPSS for Windows, 12.0 and were subjected to a principal components analysis with a varimax rotation. Internal consistency was examined using item-total correlations and Cronbach’s alphas are reported. The sample size and data met appropriate criteria for this analysis based on the KMO and Bartlett’s test and Anti-image matrices. Items that did not load well were deleted and analysis was re-run. Items above .30 were included as criteria for factor loadings.

Communalities were used to exclude items lower than  $<.4$ . In this case, “excited” and “not doing enough” had a communality of  $<.4$ , hence, these two items were dropped. A factor analysis with the remaining 21 items was run using the same criteria listed above. Factor loadings were examined to assign variables to a factor. Four factors were extracted that accounted for 55.6% of the variance. The first factor had loadings from 6 items, and represented eating in response to anxiety, anger and frustration (anxiety/anger/frustration subscale; EES-C-AAF). This factor accounted for 36% of the variance (Eigenvalue = 7.5). The second factor had loadings from 6 items, accounting for 7.6% of the variance (Eigenvalue = 1.5), and represented eating in response to feeling unsettled (unsettled subscale; EES-C-UNS). The third factor consisted of 3 items (6.4% of the variance; Eigenvalue 1.3) and was related to symptoms of depression (depression subscale; EES-C-DEP). The fourth and final factor had loadings from 5 items which accounted for 5.6% of the variance (Eigenvalue 1.1) and were related to symptoms of disorientation/vulnerability (disorientation/vulnerability subscale; EES-C-DV). The item “worried” cross-loaded on two factors and thus was not included in analyses. Cronbach’s alphas for the EES-C-AAF, EES-C-UNS, EES-C-DEP, EES-C-DV were .80, .80, .81 and .68 respectively. The EES-C subscales used in analysis are the EES-C-AAF and the EES-C-DEP. In total, 13 items on Tanofsky et al. original subscale loaded on the same subscale in this sample. Three items from the original 7-item EES-C-DEP subscale loaded on the current 4-item EES-C-DEP subscale in this Jamaican sample. In addition, 6 items from the original 12-item EES-C-AAF subscale loaded on the current 6-item EES-C-AAF subscale, and 3 items from the original 4-item EES-C-UNS subscales loaded on the current 6-item EES-C-UNS.

**Unhealthy eating.** Four items from the Jamaica Youth Risk and Resiliency Behaviour Survey (Wilks, Younger, McFarlane, Francis, & Van Den Broeck, 2007) were used to assess unhealthy eating. These questions cover information regarding the types of foods and drinks eaten within a usual week (fast

food, pastries, sodas) and the cooking method used during a usual week (i.e. how many times do you eat meat that been fried?). Items were rated on a 6-point scale ranging from “none” to “5+ times every day.” The rating scale has been changed to allow for more response options that are less frequent and to bring consistency across the items. A scale mean was calculated. Cronbach’s alpha for the scale was .50.

**Psychological distress.** The Patient Health Questionnaire-4 (Kroenke, Spitzer, Williams, & Löwe, 2010) is a 4-item scale that screens for symptoms of anxiety and depression. Participants are asked to consider how bothered they were in the past two weeks by two common depressive symptoms (e.g., feeling down, depressed, or hopeless), and two common anxiety symptoms (e.g., feeling nervous, anxious, or on edge). Items were rated on a 4-point scale (1: not at all to 4: nearly every day), and a scale mean was calculated. Cronbach’s alpha for the scale was .70.

**U.S. media consumption.** One item from the Media section of the 19-item HABITS questionnaire (Wright et al., 2011) was adapted for use in the present study. The media questions were adapted to include Jamaican-produced and American-produced programs. The question used asked “in the past month, how much did you watch American-produced TV programs on a weekday (e.g., Scandal, The Voice).” Items are rated on a 4-point scale ranging from 0-1 hour a day to 3+ hours a day.

**Remote Acculturation measures.**

**European American orientation.** Adolescents completed a brief 3-item version of the European American Orientation Scale from the Acculturation Rating Scale for Jamaican Americans (ARSJA; Ferguson, Bornstein, & Pottinger, 2012). The ARSJA has been used in multiple RA studies with adolescents in Jamaica in the past (Ferguson & Bornstein, 2012 & 2015) and these three items, which focus on orientation to a more specific subset of European American cultural products (e.g., movies, music and TV) were selected based on a factor analysis of prior RA data in Jamaica. Participants rate level of agreement with series of statements regarding enjoyment of white American TV, white American music, and white American movies. Items are rated on a 5-point Likert-type scale ranging from “none or not at all” to “very much or always.” A scale mean was calculated. Cronbach’s alpha for the scale was .73.

## Chapter 4: Results

### Statistical Procedure

The correlations and means for all variables used in analyses are presented in Table 1 and Table 2. In order to examine differences between girls and boys, all correlations were conducted by splitting the data file by gender in SPSS. Only significant associations were pursued further in regression analyses.

**Hypothesis one.** For hypothesis one, a bivariate correlation was conducted to examine the relationship between emotional eating and unhealthy eating.

**Hypothesis two.** A hierarchical regression analyses was conducted to evaluate the association between psychological distress (anxiety & depression) and emotional eating as moderated by gender. The EES-C-DEP subscale of emotional eating was used as the dependent variable. After centering the predictor variable (psychological distress), an interaction variable was created by multiplying the new centered predictor variable (psychological distress) and the moderator (gender). In the first block of the regression analysis, the centered predictor variable and gender were entered as independent variables along with the EES-C-DEP subscale as the dependent variable. In the second and final block, the interaction was entered as the independent variable with the EES-C-DEP subscale as the dependent variable.

**Hypothesis three.** A regression was conducted first testing the ‘a’ path with remote acculturation (European American orientation scale) as the dependent variable (DV) and US-produced media consumption on a weekday as the independent variable (IV). Next, a stepwise regression was conducted testing the ‘c’ path in the first block with emotional eating (EES-C-DEP) as the DV and remote acculturation as the IV and the ‘b’ path in the second block with emotional eating (EES-C-DEP) as the DV and US-produced media consumption as the IV. Bootstrapping was planned to assess any indirect effects with 1000 resamples and a 95% confidence interval.

Table 1

*Summary of Intercorrelations, Means, and Standard Deviations Among Study Variables for Girls Only*

Measure	1	2	3	4	5	6	7	8	M	SD
1. EES-C-DEP	1								1.94	1.11
2.EES-C-AAF	.38**	1							1.88	.807
3.PHQ-Psych Distress	-.17**	-.06	1						1.06	.767
4.Media-weekday	.17*	.03	-.03	1					2.39	1.15
5.Media-weekend	-.05	.04	.01	.41**	1				2.47	1.26
6.ARSJA-European American orientation	-.04	.04	.05	.28**	.30**	1			3.66	1.03
7.Unhealthy eating	-.01	.13*	.17*	.13*	.15*	.25**	.09	1	1.90	.709

Note.  $p < .05$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 2

*Summary of Intercorrelations, Means, and Standard Deviations Among Study Variables for Boys Only*

Measure	1	2	3	4	5	6	7	8	<i>M</i>	<i>SD</i>
1. EES-C-DEP	1								2.14	1.17
2. EES-C-AAF	.64**	1							2.03	.967
3. PHQ-Psych Distress	.04	.00	1						.842	.658
4. Media- weekday	-.00	-.07	-.05	1					2.26	1.12
5. Media- weekend	-.07	-.15	-.00	.41**	1				2.59	1.20
6. ARSJA- European American orientation	-.05	-.10	.12	.16	.39**	1			3.47	1.04
7. Unhealthy eating	-.13	-.16	.07	.39**	.33**	.20*	.30**	1	2.02	.757

Note:  $p < .05$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

## **General Overview**

Of the 25 items listed on the EES-C (26 with added item “happy), adolescents most commonly reported eating in response to feeling happy with over 88% reporting a moderate to high desire (3-5) to eat in response to this emotion (54.3% girls and 33.7% boys). Bored was the second most common emotion with 84% of adolescents reporting a moderate to high desire to eat in response to boredom (71% girls, 13% boys). The third most common emotion was eating in response to feeling excited (73%) (58.2%, for girls and 29.8% for boys). Table 3 lists the percentage of adolescents endorsing each item on the measure. The rotated component matrix of the four factors found in the EES-C is presented in Table 4.

Table 3

*Percentage and Means of Participants Endorsing Eating in Response to Each EES-C Emotion*

Emotion	Percentage (%) Endorsed with a moderate to high score (3-5)	<i>M</i>
Happy	88.8%	3.91
Bored	84.5%	3.46
Excited	73.6%	3.13
Not doing enough	64.6%	2.31
Worn out	63.3%	2.42
Lonely	61.8%	2.38
Helpless	59.1%	2.18
Confused	58.8%	2.06
Disobedient	57.3%	2.10
Discouraged	54.0%	1.92
Jealous	53.9%	2.09
On edge	52.7%	2.02
Uneasy	51.2%	1.85
Resentful	50.6%	1.90
Stressed out	50.3%	2.11
Upset	49.4%	1.92
Guilty	59.4%	1.98
Furious	49.1%	1.97
Nervous	48.5%	2.01
Frustrated	48.2%	1.88
Worried	47.3%	1.95
Sad	46.4%	1.91
Down	46.4%	2.01
Irritated	46.1%	1.80
Shaky	42.4%	1.83
Angry	39.7%	1.80

*Note.* EES-C = Emotional Eating Scale adapted for use in Children and Adolescents.

Table 4

*Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of Emotional Eating Scale adapted for use in Children and Adolescents*

Variable	EES-C-AAF	EES-C-UNS	EES-C-DEP	EES-C-DV
Resentful		0.68		
Discouraged		0.58		
Shaky				
Worn out				
Not doing enough				
Excited				
Disobedient		0.66		
Down			0.80	
Stressed out			0.80	
Sad			0.73	
Uneasy		0.54		
Irritated		0.65		
Jealous		0.64		
Worried	0.52		0.53	
Frustrated	0.53			
Lonely				0.53
Furious	0.61			
On edge	0.57			
Confused				0.53
Nervous	0.66			
Angry	0.73			
Guilty				0.41
Bored				0.66
Helpless				0.67
Upset	0.49			

*Note.* EES-C-AAF = emotional eating scale adapted for children and adolescents- anger, anxiety and frustration subscale; EES-C-UNS = emotional eating scale adapted for children and adolescents-unsettled subscale; EES-C-DEP = emotional eating scale adapted for children and adolescents-depression subscale; EES-C-DV = emotional eating scale adapted for children and adolescents-disorientation-vulnerability subscale

**Hypothesis one.** A positive correlation was found between emotional eating (EES-C-AAF subscale) and unhealthy eating for girls. Those with higher emotional eating scores also had high unhealthy eating scores. No correlation was found between emotional eating and unhealthy eating for boys.

**Hypothesis two.** A hierarchical linear regression was calculated predicting emotional eating based on psychological distress and gender. The regression equation performed was not significant ( $F(2, 327) = 1.452, p > .05$ ) with an  $R^2$  of .003. Gender did not have a significant effect on the relationship between psychological distress and eating in response to depressive symptoms (EES-C-DEP). Regression results are presented in table 5.

Table 5

*Regression Analyses Predicting Emotional Eating Based on Psychological Distress and Gender*

Variable	EES-C-DEP		
	Model 1 <i>B</i>	<i>B</i>	95% CI
Constant	1.949	1.952	[1.79, 2.10]
Psychological distress	-.065	-.094	[-.235, .108]
Gender	.184	.192	[-.070, .453]
Interaction (psych distress and gender)		.098	[-.275, .470]
$R^2$	.009	.010	
$F$	1.452	.266	

*Note.*  $N = 330$ . CI = confidence interval.  $p > .05$  for all predictors

**Hypothesis three.** For path ‘A’, US-produced media consumption on a weekday positively predicted remote acculturation (European American orientation) ( $\beta = .222, P = .000$ ). The ‘B’ path ( $\beta = .115, P = .608$ ) and ‘C’ path ( $\beta = .072, P = .700$ ) were not significant, however, meaning that remote acculturation did not predict emotional eating and US-produced media consumption did not predict emotional eating. Moreover, the estimated confidence interval contained zero suggesting that there is no mediation. Figure 1 shows mediation results.

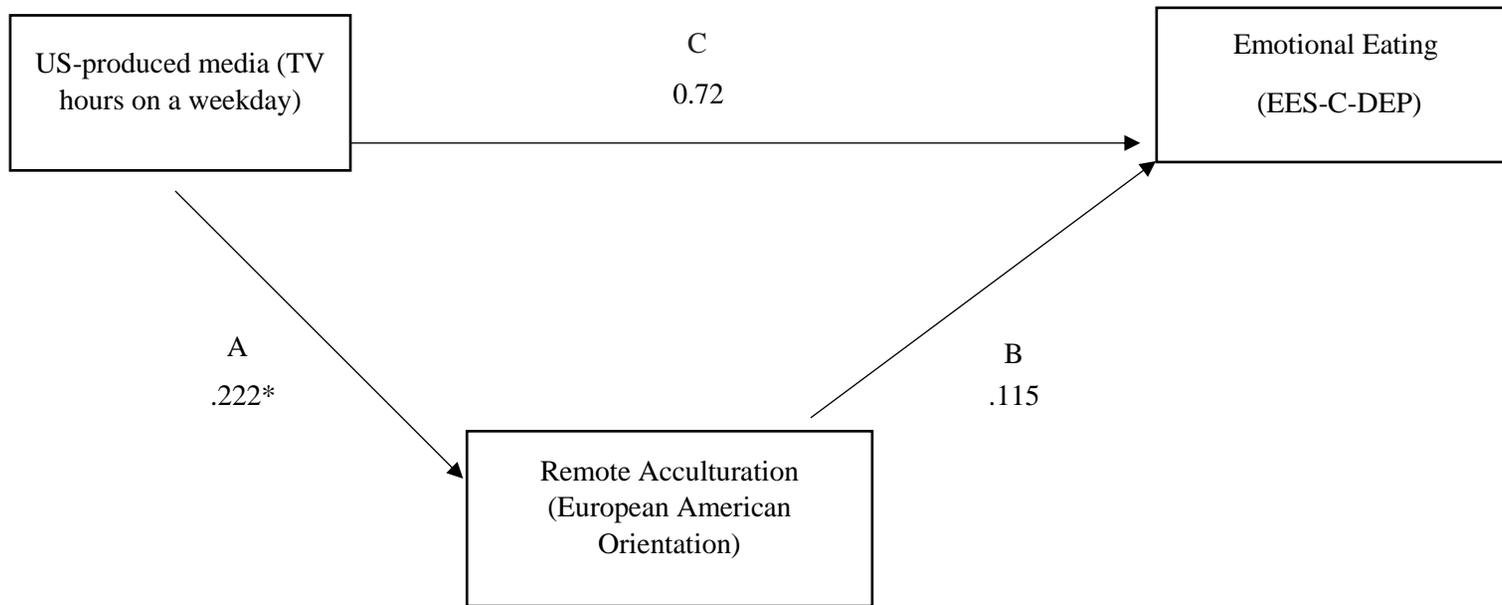


Figure 1. Mediation model with  $\beta$  values.  $*p < .05$

## **Chapter 5: Conclusions and Discussion**

The purpose of this study was to investigate the correlation between emotional eating and unhealthy eating in Jamaican adolescents, evaluate the association between psychological and emotional eating as moderated by gender, and determine if remote acculturation mediates the association between US-produced media consumption and emotional eating. The only hypothesis supported in the present study was the positive correlation between emotional eating and unhealthy eating in Jamaican adolescent girls. Girls in this study who ate more emotionally were more likely than boys who ate emotionally to eat unhealthy foods. Kemp and Grier (2013) conducted a qualitative study with both emotional eaters and non-emotional-eaters where they noted that high-carbohydrate and high-calorie foods are more likely to be consumed by emotional eaters when attempting to alleviate negative emotions, and more so for females.

Additionally, it was found that the hypothesized moderation was not significant. Gender did not affect the relationship between emotional eating and psychological distress. One reason for this could be that a negative correlation was found between the Patient Health Questionnaire and the depression subscale of the Emotional Eating scale, meaning the higher the psychological distress, the lower emotional eating in response to depression related emotions. This finding is in opposite direction of the expected relationship between psychological distress and emotional eating. This may be related to cultural differences present in Jamaican culture. This study is the first to examine emotional eating in adolescents in the Caribbean. It may be that adolescents are engaging in emotional eating more in response to positive emotions such as happiness and excitement rather than psychological distress (anxiety or depression). Lastly, for the mediation analysis, US-produced media consumption on a weekday positively predicted remote acculturation, which is consistent with previous RA literature. Ferguson and Bornstein (2015) found that US-produced media via cable was the largest influence of American culture in Jamaican adolescents.

Despite what was hypothesized, remote acculturation did not predict emotional eating and US-produced media consumption did not predict emotional eating. The remote acculturation measure used focused specifically on orientation to American cultural products namely music, movies and American TV, but did not include questions regarding particular behaviors relative to emotional eating seen through media avenues. Exposure to food advertisements and images within American TV and movies that display emotional eating were not measured in the present study. This could also be the reason why US-produced media consumption did not predict emotional eating as exposure to food advertisements was not measured. Food advertisements may play an integral role in whether one engages in emotional eating. Research has demonstrated that advertisements for food products can be particularly persuasive,

provocative and cause ruminative thoughts about the particular food item displayed (Kemp & Grier 2011, 2013).

### **Limitations and Future Directions**

There were some limitations of the present study that could have affected the overall results. To begin with, the measurement of unhealthy eating and US-produced media consumption on a weekday and weekend posed some boundaries. The alpha of the unhealthy eating measure was below .70 and thus not truly reliable. The unhealthy eating measurement was taken from the Jamaican Youth Risk and Resiliency Behaviour Survey which included a nationally representative sample of 3003 Jamaican in-school youth from 10-15 years of age. A goal of the survey was to determine nutritional habits and lifestyles of children and teenagers and was compiled with the use of validated questions from previous surveys with the same sample age group of Jamaican children (Wilks, Younger, McFarlane, Francis, & Van Den Broeck, 2007). The origin of the item provides confidence that the measure includes valid and trustworthy items regarding the types of unhealthy food being eaten in Jamaica. Furthermore, the present study measured the frequency and not the consumption or quantity of the unhealthy food being eaten. Emotional eating has often been linked to overconsumption (Kemp & Grier, 2013) and binge eating (Van Strien, Engels, Van Leeuwe, & Snoek 2005). Binge eating was not captured with the unhealthy eating measure as it only captured frequency of eating, not consumption, therefore future research should capture the amount of consumption and foods being consumed during negative and positive emotional states. A binge eating questionnaire should also be integrated to capture whether the emotional eating behavior is correlated with an eating disorder such as binge eating.

In regards to the US-produced consumption measure, the present study only asked one question regarding media consumption which very broadly asked about American-produced TV programs. The measure did not include specific forms of media such as food advertisements or shows that illustrate others eating unhealthy food in response to feelings of distress or happiness. Future research might include questions pertaining to the types of media and food advertisements being shown. Potential questions could include: How often do you see food advertisements? What types of foods do you notice in food advertisements? It is important that the question cover any emotionally based promotional appeals or other advertisements that promote snacking and encourage overeating. Future studies should incorporate a quantitative and qualitative component when assessing emotional eating and media consumption in adolescents. The qualitative component (via interviews and focus groups) may prove useful in assessing how youth interpret emotional eating. For example, youth may interpret certain emotions as reflecting an association rather than causality (i.e. "I ate while I was sad," as opposed to, "I ate in response to feeling sad"). Furthermore, a qualitative component could also give a more in-depth picture of how media influences emotional-coping techniques with the use of food.

This study illustrates a need to understand how US-produced media consumption (types of shows and information being shown) influences eating patterns, emotional eating and identity in adolescents in Jamaica, especially for girls. Girls are particularly susceptible to emotional eating and were found to consume unhealthy foods when eating emotionally in this study. This information can be used to create an educational program that could suggest alternative ways to manage emotions instead of eating by engaging in non-eating activities such as physical activity, a hobby, or support groups to reduce emotional distress (Kemp & Grier, 2013). Additionally, the educational program could include strategies for improving consumption decisions and informing individuals how important reading food labels are for your health. Recognizing the content of food information and its potential effects on the body can contribute to the development of healthier eating behaviors and reduction of eating unhealthy food during negative emotional states.

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