

Say yes to “Sunday Dinner” and no to “Nyam and Scram”: Family mealtimes, nutrition, and emotional health among adolescents and mothers in Jamaica[☆]



Cagla Giray^{a,*}, Gail M. Ferguson^b

^a Department of Human Development and Family Studies, University of Illinois at Urbana-Champaign, 230 Bevier Hall, 905 S Goodwin Avenue, Urbana, IL 61801, USA

^b Department of Human Development and Family Studies, University of Illinois at Urbana-Champaign, 2015 Doris Kelley Christopher Hall, MC-081, 904 West Nevada Street, Urbana, IL 61801, USA

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ABSTRACT

We explore the quantity (frequency) and quality (priority, atmosphere, structure) of family mealtimes and associations with nutritional and emotional health in Jamaica. Urban adolescents ($N = 330$, $M = 13.8$ years, $SD = 1.8$, 64% girls) and their mothers ($M = 41.4$ years, $SD = 7.8$) completed questionnaires. On average, mothers reported having family meals 3–4 times/week and mealtime quality, but not quantity, was associated with health. Correlations revealed that mothers ate more unhealthily if they watched more TV during meals, and actor-partner independence modeling showed that high SES adolescents ate more unhealthily if their mothers had more difficulty finding time for family meals (and vice versa: partner interaction). Additionally, adolescents and mothers were more psychologically distressed if they themselves had more difficulty finding time for family meals, if they had less positive attitudes/behaviors around mealtime atmosphere (actor effects), or if they were high SES individuals placing lower importance on mealtimes (actor interaction). Overall, however many weekly meals Jamaican families are able to share together, what's important is to make those mealtimes count as quality time. Leisurely family meals with enjoyable conversation uninterrupted by television, such as the age-old Jamaican tradition of “Sunday Dinner”, may nourish both body and soul.

1. Introduction

Family mealtimes are reported as one of the most frequently shared group activities worldwide (CASA, 2011; OECD, 2002). Shared family meals provide regular windows of time when youth and parents can talk, connect, and develop a sense of family unity (Fiese & Schwartz, 2008; Fiese, Foley, & Spagnola, 2006). International evidence indicates that more frequent family mealtimes and more pleasant mealtime atmosphere are associated with a variety of positive health and well-being outcomes including better nutrition, higher social competence, and fewer emotional and behavioral problems (Fiese & Schwartz, 2008; Hammons & Fiese, 2011; Speith et al., 2001). Although there is a body of literature describing common foods and dietary intake of youth and parents in Jamaica (i.e. what and how much Jamaicans eat: Higman, 2008; Jackson, Samms-Vaughan, & Ashley, 2002; Wilks, Younger,

McFarlane, Francis, & Van Den Broeck, 2007) little is known about the context and atmosphere of eating in Jamaican homes (i.e., how often and how pleasant meals may be) or about how family mealtimes might be associated with health outcomes.

To what degree do modern Jamaican families still savor leisurely mealtimes like traditional “Sunday dinner” versus embracing the “Nyam and scram” (i.e., eat and run) culture of hectic urban life? And why does it matter? To address these questions, our paper first paints a canvas of the quantity (frequency) and quality (priority, atmosphere, structure) of family mealtimes in Jamaica as perceived by a sample of urban adolescents and their mothers. Second, we explore the associations among family mealtimes, nutrition, and emotional health among Jamaican adolescents and parents. Having a better understanding of family mealtimes in Jamaica and its links to nutrition and health can lay the foundation for future health promotion efforts benefiting Caribbean youth and families.

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* Corresponding author.

E-mail addresses: giray2@illinois.edu (C. Giray), gmfergus@illinois.edu (G.M. Ferguson).

1.1. Family mealtimes

Studies on family mealtimes have traditionally focused on the weekly *quantity*, meaning the number of times a family has a shared meal per week (Hammons & Fiese, 2011). However recent research has also highlighted the quality of meal environments including the *priority* given to family meals, along with the positive *atmosphere* and clear *structure* surrounding family meals (Fulkerson, Neumark-Sztainer, & Story, 2006; Offer, 2013). U.S. findings show that youth and parents often view shared mealtimes positively; however, there are differences across generation (i.e., adolescents vs. mothers). In one study, Fulkerson et al. (2006) investigated views of family meals with an ethnically diverse sample of 902 adolescents and one of their parents in the United States. Results showed that parents placed greater importance on and experienced a more positive atmosphere during mealtimes as compared to their adolescents (Fulkerson et al., 2006). Their study also showed that perceptions of family meal environment varied across adolescents' age and gender. Younger adolescents and boys reported more frequent family meals with more rules; whereas girls often reported more time barriers, fewer rules, and lower importance of family meals (see Fulkerson et al., 2006).

There is also a larger international literature on the typical quantity and quality of family meals across Europe, South America, and Australia. In a cross-cultural study, Zaborskis, Zemaitiene, Borup, Kuntsche and Moreno (2007) evaluated eating meals as a joint activity among families with adolescents across six European countries (Czech Republic, Finland, Greenland, Lithuania, Spain, and Ukraine). Results showed that on average, families shared a meal on most days of the week (mean was 3.15 on a scale where 3 represented 'most days' and 4 'every day'). This was also true for the mothers in São Paulo, Brazil (41.5%) and youth in Spain (78%) who reported sharing a family meal almost daily (Petty, Escrivao, & Souza, 2013; Seirra-Baigrie, Lemos-Giraldez, & Fonseca-Pedrero, 2009). Similar to the U.S. findings in Fulkerson et al. (2006), older European children reported fewer mealtimes and boys reported spending more time with family (see Zaborskis et al., 2007).

Although fewer, there are also studies across countries examining the quality of family mealtimes. Similar to the U.S. findings of Fulkerson et al. (2006), difficulty finding time and scheduling challenges have been identified as common barriers to prioritizing family meals (see Harrison et al., 2015). However, adolescents and parents across Europe and Australia apparently still enjoy positive atmosphere and dialogue at the dinner table (e.g., 81.9% of youth in Spain: Sierra-Baigrie, Lemos-Giraldez, & Fonseca-Pedrero, 2009). One interesting finding from the international literature is the widespread lack of structure surrounding the family mealtime environment, with the majority of adolescents in Australia (61.3%) and Brazil (51%) reporting that they watch TV while eating dinner together (Gallegos, Dziurawiec, Fozdar, & Abernethie, 2011; Petty et al., 2013). This pattern varies across adolescents' gender as well as across contexts. For example, significantly more boys in Australia watch TV with meals, and U.K. girls report significantly fewer mealtime rules (Gallegos et al., 2011; White & Halliwell, 2010).

Prior US and international literature have highlighted socioeconomic status (SES) as one of the key factors affecting the quantity and quality of family mealtimes (see Harrison et al., 2015). Higher income families often reported more frequent and longer meals as compared to lower income families (Bradley, Corwyn, McAdoo, & Coll, 2001). One recent study examined family mealtimes in relation to socioeconomic position among Australian families with younger children (Litterbach, Campbell, & Spence, 2017). Results showed that higher SES families reported higher overall family mealtime importance and more optimal structure (less mealtime TV viewing and more structured eating location such as table). Moreover, low SES families (often mothers) have more difficulty allocating time and energy to execute daily family meals (Jarosz, 2017) and they report more disorganized mealtime

environments (Roy, Tubbs, & Burton, 2014) as compared to families with higher SES.

Taken together, international research findings, including studies in the United States, confirm the popularity and importance of family mealtimes. Although generation and age differences seem to function similarly across the world, perceptions of quality of family mealtimes differ across socioeconomic backgrounds and cultural contexts. To date, there is no published research on family mealtimes in the Caribbean region.

1.2. Family mealtimes and health

Nutritional health. Previous research has shown the protective effect of family meals on nutrition. Meta-analytic data across five countries (United States, Canada, Australia, Finland, and Japan) showed that adolescents who have at least three family meals per week have higher odds of healthier eating and normal weight (Hammons & Fiese, 2011). In addition to the quantity of shared meals, researchers have highlighted the importance of mealtime quality on nutritional health (Fiese et al., 2006). One observational study among U.S. children found that longer mealtimes and more positive communication during shared meals and greater importance of meal scheduling were associated with lower risk of childhood overweight/obesity (Fiese, Hammons, & Grigsby-Toussaint, 2012).

Along with the priority and atmosphere, the structure of meals is also important for nutritional health outcomes, meaning issues of overweight, as well as unhealthy and disordered eating (Hammons & Fiese, 2011). Correlational research conducted in the U.S. has demonstrated that television (TV) viewing while eating is associated with reduced consumption of fruits and vegetables (Boutelle, Birnbaum, Lytle, Murray, & Story, 2003; Fitzpatrick, Edmunds, & Dennison, 2007), overeating (Brunstrom & Mitchell, 2006), and obesity (Gable, Chang, & Krull, 2007). In two recent international studies exploring mealtimes in Australian (Utter et al., 2013) and Brazilian (Petty et al., 2013) families, regression analyses accounting for SES revealed that less strict structure (presence of TV during the family meals) for mealtimes predicted higher consumption of unhealthy food both for children and parents.

Emotional health. International evidence indicates that quantity of family mealtimes is associated with a variety of emotional health outcomes including lower depression and anxiety scores, fewer behavioral problems, and higher social competence across the U.S. (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004), Europe (de Wit et al., 2015), and New Zealand (Utter et al., 2013). In addition, research examining the quality of family mealtimes in relation to emotional health is still growing. The available evidence from the U.S. and representative European countries suggest that *priority* given to having a family meal together, *atmosphere* surrounding the mealtimes, and the *structure* of dinner table are associated with both youth's and parents' emotional health outcomes (e.g., lower depression, higher self-esteem, see Hammons & Fiese, 2011; Fiese & Schwartz, 2008).

1.3. Jamaican food and culture

Jamaica is an island nation located in the Caribbean region between North and South America, whose population is largely of African heritage but with noted influences from Europe (colonization), China (immigration post-emancipation), and elsewhere. Higman's (2008) authoritative volume entitled "Jamaican Food" explains how what is now thought of as Jamaican food is closely tied to Jamaica's history, culture, and national identity. For example, after Jamaica gained independence in 1962, its national dish of "ackee and saltfish", a unique combination of a fruit and a fish, was established.

Contemporary research studies examining Jamaican meals generally focus on food preferences, dietary intake patterns, and weight status among individuals living in Jamaica, both among adults (Samuda et al., 1998; Wilks et al., 2007) and among adolescents (Dubois et al.,

2011; Francis, Van den Broeck et al., 2009; Jackson et al., 2002). Although in a classic 1998 focus group study, five of the seven most commonly consumed dishes were fruits or vegetables (Samuda et al., 1998), a more recent quantitative study found that Jamaicans consumed the most grams of cereal products (e.g., rice, dumplings, bread, crackers, breakfast cereal), followed by fruits, vegetables, and poultry, in that order (Jackson et al., 2002). Currently, according to a nationally representative survey of Jamaican adolescents, 99% do not consume the recommended levels of fruits and vegetables (Jackson et al., 2002). Combined with high intakes of sugar-sweetened beverages and fast food, this nutritional trend is related to the double burden of malnutrition among Jamaican youth, a state of being “overfed and undernourished” (Reid, 2016, p. 41).

Despite this corpus of knowledge regarding the ‘what’ and ‘how much’ of Jamaican food intake, and associations between family mealtimes and health in the international literature outside Jamaica, virtually nothing is known about the ‘how often’ and ‘how pleasant’ of mealtimes in the Jamaican home. In our review of the literature, we identified only one published article involving mealtimes in the Caribbean. Ferguson and Iturbide (2015) conducted exploratory focus groups with seven mothers of adolescents in urban Jamaica on their perceptions of Americanization and modern family life on the island. Results revealed food practices as a major theme. In particular, mothers highlighted mealtime routines as an important family activity providing a unique opportunity for family members to interact and build social and emotional bonds. Starting from meal preparation to setting the dinner table to the actual mealtime, mothers also emphasized that mealtimes are a time when their families talk and adolescents spontaneously disclose details about their lives.

The cultural values of Jamaicans are also relevant to thinking about family mealtimes in that context. Jamaica is a moderately collectivistic nation (Hofstede, 2001) and Jamaicans hold fairly strong beliefs about family obligations or the need for youth to respect parents and help with chores in the homestead (Ferguson & Bornstein, 2012). However, there are culturally endorsed gendered socialization practices whereby mothers generally manage food preparation and girls, but usually not boys, are expected to assist (Bailey, Branche, McGarrity, & Stuart, 1998). Boys, on the other hand, are expected to assist with some outdoor chores, but these are generally less frequent and less time consuming. Boys are therefore granted more leisure time overall and girls have a heavier burden of household work related to mealtimes than do boys.

1.4. The current study

Exploring how family mealtimes typically function in Jamaica and how they may be related to health is important to inform ongoing efforts to promote youth and family nutrition and resilience (Ferguson, Muzaffar, Iturbide, Chu, & Gardner, 2017). The present study aims to be the first exploration of adolescents’ and mothers’ perceptions of the family meal quantity (frequency) and quality (priority, atmosphere, structure) in Jamaica or the Caribbean, and to examine associations with nutritional and emotional health. In the absence of prior mealtimes data in Jamaica, the Caribbean, or most developing contexts, we used the U.S. and broader international literature to cautiously propose two hypotheses. First, in line with international research, we expected both quantity and quality of mealtimes to be positively associated with nutritional and emotional health. Second, similar to U.S. research, we expected that SES would be positively associated with mealtime quantity, quality, and health; and although this appears not to have been studied previously in the literature, it also seemed plausible that SES might moderate the associations between mealtime quality and health. On the one hand, positive attitudes regarding family mealtime priority and atmosphere might be more beneficial for high SES families because they, unlike low SES families, have more financial and emotional resources to actually prioritize mealtimes and nurture a positive mealtime atmosphere (Roy et al., 2014). On the other hand, family

mealtime structure may be equally beneficial for both high and low SES families because this association holds after accounting for SES in Brazilian and Australian samples (Petty et al., 2013; Utter et al., 2013).

2. Methods

2.1. Participants

Altogether, 366 adolescents and 365 mothers were recruited from three large traditional government-run high schools in Kingston, Jamaica to complete questionnaires (45% response rate), and 330 adolescent-mother dyads ($M_{adolescent\ age} = 13.8$, $SD = 1.8$, 64% girls; $M_{mother\ age} = 41.4$, $SD = 7.8$) were retained in the analytic sample. From the 365 mothers, we excluded 5 dyads in which only the mother participated, 27 dyads in which the mother or adolescent had > 20% missing data, two dyads containing twins of the same mother, and one dyad wherein a participant (mother) had lived > half of her life outside of Jamaica. There were 170 younger adolescents ($M_{age} = 12.27$, $Range_{age} = 11-14$, $SD = .74$) in 7th & 8th grades and 160 older adolescents ($M_{age} = 15.45$, $Range_{age} = 14-18$, $SD = .81$) in 9th & 10th grades. According to adolescents’ reports, an average of 5 people including themselves lived in their households ($M = 5.13$, $range = 2-19$, $SD = 2.53$). Approximately 90% lived with their mothers, nearly 50% had siblings in the home, and 11–20% reported the presence of extended family in the home. Based on maternal reports, nearly half (47%) of primary household earners completed at least “some college (1 + year) or training program”.

2.2. Procedure

Data used are drawn from a larger study of adolescent-mother dyads in Jamaica – The Culture, Health, and Family Life Study. Following IRB approval in the United States and Jamaica, randomly selected high school students from grades 7–8 and 10–11 took home a consent form and a mother questionnaire and were asked to return completed documents in a sealed envelope to the investigator at school the following day. The parental consent and student assent forms explained that the study was surveying students and mothers across three Kingston schools to help “learn more about the culture and health habits of modern Jamaican students and parents” and that a student-mother pair from their family was invited to participate. They were also informed that the study had already been approved by their school principal, and their voluntary responses on the 30–60-min survey would be confidential (i.e., not shared with family members or school personnel, and in no way affecting their standing at their schools). Only adolescents who returned a signed parental consent form, a completed assent form, and a mother questionnaire were given a student questionnaire. A researcher remained in the room to answer student questions and each participant received pre-paid phone credit for turning in a completed questionnaire: ~U.S.\$3 value for younger students in lower grades, ~U.S.\$4 for older students in upper grades, ~U.S.\$5 for mothers.

2.3. Measures

Family mealtimes. We used the 10-item Family Mealtimes Questionnaire used by Fulkerson et al. (2006) in their study of U.S. adolescents and (mostly) mothers. For frequency, participants reported the “number of times family had a meal together in the past week” on this scale: 1 (“never”), 2 (“1–2 times”), 3 (“3–4 times”), 4 (“5–6 times”), 5 (“7 times”). Priority was assessed with one item about importance of shared mealtimes (e.g., *It’s important that our family eat meals together*) and two items about barriers to shared mealtimes (e.g., *Different schedules make it hard to eat together*). Atmosphere included one item about shared mealtime enjoyment (e.g., *Eating family meals bring people together in an enjoyable way*) and two other on positive

Table 1
Descriptive statistics and paired-samples *t*-test results regarding family mealtimes in Jamaica.

Family Mealtime Items	Adolescents		Mothers		95%CI	t	d
	M	SD	M	SD			
Mealtime Frequency^a	2.68	1.34	3.00	1.47		3.66**	.40
Priority of Mealtimes							
It is important that our family eat meals together	3.31	.77	3.59	.59	.18, .37	5.80**	.64
Different schedules make it hard to eat together	3.22	.82	3.33	.75	.00, .22	2.03*	.22
It's difficult to find time for a family meal	2.62	1.05	2.38	.97	-.37, .10	-3.53**	-.39
Atmosphere of Mealtimes							
Dinner is about more than food, we all talk	3.22	.95	3.39	.81	.05, .28	2.83**	.31
Mealtime is a time for talking with family	3.05	.94	3.15	.90	-.02, .20	1.60	.18
Eating family meals brings people together in an enjoyable way	3.06	.94	3.73	.58	.10, .27	4.38**	.48
Structure of Mealtimes							
We (children) are expected to follow rules at mealtime	3.48	.68	3.63	.59	.07, .24	3.46**	.38
Manners are important at the dinner table	3.79	.49	3.89	.40	.03, .16	2.96**	.33
We watch TV while eating dinner	2.86	1.05	2.44	1.05	-.55, .29	-6.28**	-.69
Health Outcomes							
Healthy Eating	2.17	.86	2.00	.79	-.27, .05	-2.95**	-.32
Unhealthy Eating	1.94	.73	1.37	.66	-.66, -.49	-12.80**	-1.41
Psychological Distress	.98	.74	.91	.79	-.18, .04	-1.31	-.14

Note. ^aMealtime Frequency: 1 = Never, 2 = 1–2 times, 3 = 3–4 times, 4 = 5–6 times, 5 = 7 times or more. All *t*-tests had *df* = 329.

p* < .05; *p* < .001. *d* = Cohen's *d*.

communication during family meals (e.g., *Mealtime is a time for talking with family*). Structure surrounding family mealtimes was assessed using two items tapping expectations regarding rules and manners during mealtimes, and a third item on television watching behaviors while eating dinner (e.g., *Manners are important at the dinner table*). Priority, atmosphere, and structure items were rated on a 5-point Likert scale ranging from 1 (“Strongly disagree”) to 5 (“Strongly agree”), and parallel to Fulkerson et al. (2006) study, individual items were used in most analyses.

Healthy eating. Two items were adapted from the Jamaican Youth Risk and Resiliency Behavior Survey pertaining to fruit and vegetable consumption frequency (e.g., *How many times do you usually eat fruit?*, Wilks et al., 2007). Two additional items were crafted to reflect grain and dairy consumption frequency (e.g., *How many times do you usually eat whole grains such as brown bread, oats, brown rice, wheat crackers, bulgur, corn?*) as two other important categories of healthy eating according to the Healthy Eating Index (Guenther et al., 2013). A 6-point Likert-type scale was used and a scale mean was created: 0 (“none”), 1 (“1 time every week”), 2 (“a few times every week”), 3 (“1 time every day”), 4 (“2–4 times every day”), 5 (“5 + times every day”). For this measure, Cronbach's $\alpha_{\text{adolescent}} = 0.65$ and $\alpha_{\text{mother}} = 0.69$.

Unhealthy eating. Four items were adapted from the Jamaican Youth Risk and Resiliency Behavior Survey (Wilks et al., 2007). Participants rated the frequency of eating fast food, soda/sweetened drinks, pastries, and fried meats (e.g., *How many times do you eat food at fast food places such as Burger King, Juici, Tastee, Pizza Hut, Kentucky Fried Chicken?*) (Cronbach's $\alpha_{\text{adolescent}} = 0.53$; $\alpha_{\text{mother}} = .57^1$). A 6-point Likert-type scale was used and a scale mean was created: 0 (“none”), 1 (“1 time every week”), 2 (“a few times every week”), 3 (“1 time every day”), 4 (“2–4 times every day”), 5 (“5 + times every day”).

Psychological distress. The 4-item Patient Health Questionnaire (Cronbach's $\alpha_{\text{adolescent}} = 0.71$; $\alpha_{\text{mother}} = 0.79$; PHQ-4, Löwe et al., 2010) was used. Adolescents and mothers are asked to consider how bothered they were in the past two weeks by depressive symptoms (e.g., *feeling down, depressed, or hopeless*), and anxiety symptoms (e.g., *feeling nervous, anxious, or on edge*). Items were rated on a 4-point scale ranging from 1 (“Not at all”) to 4 (“Nearly every day”) and a scale mean was calculated with higher scores reflecting greater psychological distress.

Socio-economic status (SES). Mothers reported the presence/absence of 18 major household possessions such as appliances and vehicles plus one point for each additional car or phone beyond one (adapted from the Jamaican Youth Risk and Resiliency Behavior

Table 2

Family mealtime frequency distribution of the current Jamaican sample compared to a prior U.S. Sample.

# of times family had a meal together in the past week	Jamaican Sample in Current Study		U.S. Sample in Fulkerson et al. (2006)	
	Adolescent Report %	Mother Report %	Adolescent Report %	Mother Report %
Never	20.8	16.1	6.8	13.7
1-2 times	34.7	31.0	17.8	18.7
3-4 times	18.5	20.8	18.4	20.3
5-6 times	9.9	14.6	16.5	17.8
7 times	15.8	17.5	22.0	9.9
7 + times	n/a	n/a	18.5	19.6

Survey: Wilks et al., 2007). On average participating families indicated 10 household possessions ($M = 10.17$, range = 1–24, $SD = 3.46$), showing that our sample had slightly higher SES than Wilks et al. (2007) nationally representative sample in which 65.4% of adolescents had 6 + possessions.

2.4. Plan of analysis

First, preliminary analyses were conducted. Descriptive statistics and bivariate correlations among adolescents' and mothers' reports of family mealtime quantity, quality, and SES were examined. Second, paired sample *t*-tests (to account for the interdependence of scores) were conducted to compare mothers' and adolescents' reports on family mealtime variables. Third, independent sample *t*-tests were conducted to examine differences in adolescents' responses to mealtime variables across age and gender.

Then, main analyses were conducted. Based on the significant associations identified in the correlations of the overall sample, multilevel modeling was used to estimate two actor-partner interdependence models (APIM: Kenny, Kashy, & Cook, 2006) assessing the effects of family mealtimes variables on nutritional and emotional health, respectively. APIM is advantageous to analyze non-independent data collected from dyads because it accounts for the fact that individuals in close relationships such as adolescents and parents are likely to influence each other. In our study, APIM allowed us to disentangle the effect of an adolescent's or mother's behavior on her/his own health (i.e., actor effect) from the effect of that adolescent's or mother's behavior on

Table 3
Inter-correlations among study variables for adolescents (above diagonal) and mothers (below diagonal).

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. SES		-.07	.09	.03	-.03	.04	.07	.02	.12*	.06	.06	.18**	.04	-.17**
2. Mealtime Frequency	-.05	.15**	.27**	-.07	-.20**	.15**	.19**	.25**	.19**	.13*	.02	.04	-.02	-.08
Mealtime Priority														
3. It is important that our family eat meals together	.10	.19**	.01	.14*	-.17**	.44**	.49**	.52**	.45**	.36**	-.09	.02	.00	-.15**
4. Different schedules make it hard to eat together	.15**	-.15**	.66	.08	.32**	.20**	.22**	.07	.12*	.12*	.09	.02	.08	-.02
5. It's difficult to find time for a family meal	.06	-.30**	-.05	.16**	-.06	.03	.00	-.17**	-.07	-.08	.21**	-.05	.02	.12*
Mealtime Atmosphere														
6. Dinner is about more than food, we all talk	.14*	.10	.30**	.23**	.02	.27**	.59**	.43**	.26**	.28**	.02	.05	-.01	-.16**
7. Mealtime is a time for talking with family	.20**	.01	.30**	.08	.15**	.50**	.19**	.48**	.26**	.17**	.00	.05	.03	-.16**
8. Eating family meals brings people together in an enjoyable way	.12*	.18**	.36**	.03	.01	.43**	.39**	.18**	.45**	.44**	-.10	-.03	.02	-.07
Mealtime Structure														
9. We (Children) are expected to follow rules at mealtime	-.02	.12*	.18**	-.03	-.02	.14*	.13*	.33**	.08	.48**	-.02	.08	-.05	-.09
10. Manners are important at the dinner table	.14*	.05	.16**	.13*	.08	.20**	.15**	.34**	.31**	-.03	-.03	-.01	-.05	-.03
11. We watch TV while eating dinner	-.09	.01	-.14*	-.10	.03	-.19**	.01	-.15**	-.07	-.15**	-.03	-.01	-.00	.01
Health Outcomes														
12. Healthy Eating	.38*	.02	.03	-.05	-.06	.01	.08	-.06	-.03	-.02	-.07	.27**	.12*	-.33**
13. Unhealthy Eating	.02	-.04	-.03	-.02	.11*	-.12*	-.01	-.12*	-.05	-.02	.12*	.12*	.32**	.02
14. Psychological Distress	-.28	.01	-.06	.03	.08	-.05	-.13	-.09	.07	-.06	.01	-.33**	.02	.17**

Note. ^aSES was reported by mothers. Correlations between adolescent and mother reports on each variable are bolded along the diagonal. * $p < .05$; ** $p < .001$.

the health of the other person (i.e., partner effect).

Although Fulkerson et al. (2006) study used individual family mealtime items in their descriptive analyses, we explored the feasibility of data reduction to minimize the number of predictors entered into our multilevel models. Our factor analyses and reliability analyses indicated that only the atmosphere items could be reasonably combined into a summed index score (Cronbach's $\alpha_{\text{adolescent}} = 0.51$; $\alpha_{\text{mother}} = 0.57$),¹ whereas mealtime priority and structure items were used individually. Results using the atmosphere subscale sum were very similar to those using individual items; therefore, the atmosphere subscale sum was used for parsimony.

3. Results

3.1. Preliminary results

Table 1 displays means and standard deviations of all study variables for adolescents and mothers separately. On average, mothers reported having at least 3 to 4 family meals in the past week ($M = 3.00$, $SD = 1.47$, range = 1–7 meals/week) on a scale where 3 represented '3–4 times', which was similar to adolescents' reports of 2.67 meals on average. Table 2 displays the mealtime frequency distribution in the current Jamaican sample compared to Fulkerson et al. (2006) U.S. sample, showing a comparable distribution though somewhat lower scores in Jamaica. Scores on mealtime priority, atmosphere, and structure were generally moderate (all above 2.3 on 5-point scale). Table 3 displays correlations among all study variables. Family mealtime frequency correlated significantly and positively with the importance given to family meals ($r_{\text{adolescent}} = 0.13$, $r_{\text{mother}} = 0.19$) and significantly and negatively with difficulty finding time for a family meal ($r_{\text{adolescent}} = -0.25$, $r_{\text{mother}} = -0.30$). Mothers' TV watching during meals was positively correlated with their unhealthy eating

¹ The Cronbach's α for the unhealthy eating and mealtime atmosphere scales were not high (α ranged from 0.50 to 0.60). However, these measures had high content validity because some were taken from a measure used in prior studies (atmosphere) and the national Jamaican Youth Risk and Resiliency Survey (unhealthy), high face validity (atmosphere), and high structural validity based on CFAs (unhealthy eating). The modest size of the reliability coefficients is likely due to the fact that these are indices rather than true "scales." In other words, for each scale, participants may engage in one of these behaviors without necessarily engaging in others (indeed, participants consumed soda more frequently than the other categories of unhealthy foods). In addition, for mealtime atmosphere, two item queries actual conversation behavior whereas the other two query conversation beliefs, which may have contributed to lower α s.

($r_{\text{mother}} = 0.12$). Additionally, SES was significantly and positively correlated with mealtime quality (priority, atmosphere, and structure), as well as healthy eating and psychological distress, with more associations based on mother-report than on adolescent-report.

Generation differences. Results of paired-samples t-tests revealed that mothers were more likely than their adolescents to *prioritize* family mealtime: mothers were more likely to report that it is important for family to eat meals together and that different schedules make it hard to eat together; and less likely to report that it was difficult to find time for a family meal. In addition, mothers perceived significantly better *atmosphere* during family mealtime as compared to adolescents (i.e., valuing and enjoying mealtime conversation and interactions). Compared to adolescents, mothers also reported stricter *structure* around mealtime: dinner table manners were more important for them, they were more likely to expect children to follow rules, and they were less likely to watch TV while eating. See Table 1 for statistics and effect sizes comparing means across adolescents versus mothers.

Age and gender differences. Independent samples t-tests revealed that compared to older students, younger students reported less difficulty finding time for family meals, watching less TV with dinner, and more enjoyable atmosphere around mealtime. Furthermore, mothers of younger adolescents were more likely than mothers of older adolescents to report higher importance of eating together, more enjoyable mealtime atmosphere, higher expectations for children to follow the rules and to use table manners. See Table 4 for age-related t-tests and effect sizes. Additionally, compared to adolescent girls, boys reported more frequent family meals ($M_{\text{boys}} = 3.21$, $SD = 0.78$; $M_{\text{girls}} = 2.97$, $SD = 1.01$, $t(299) = -2.33$, $p < .05$, $d = 0.660$) and more positive mealtime atmosphere ($M_{\text{boys}} = 3.21$, $SD = 0.78$; $M_{\text{girls}} = 2.97$, $SD = 1.01$, $t(299) = -2.33$, $p < .05$, $d = 0.660$).²

3.2. Main results

Multilevel modeling with restricted maximum likelihood was used to estimate two APIMs assessing the effects of family mealtime quality variables on 1) unhealthy eating, and then 2) psychological distress. Dyads were treated as distinguishable and "person" was designated as a repeated measure (i.e., adolescent versus mother). Continuous

² ANCOVAs revealed that mothers-reported family mealtime variables were statistically different only across adolescents' age, $F(9, 317) = 2.293$, $p = .017$; Wilks' Lambda = 0.94; partial eta squared = -0.06, but not across adolescent gender.

Table 4
Descriptive statistics and independent samples *t*-test results for adolescents by grade.

Family Mealtime Items	Adolescents' Reports						Mothers' Reports					
	7 th /8th Grade		10 th /11th Grade		Grade Comparisons		7 th /8th Grade		10 th /11th Grade		Grade Comparisons	
	M	SD	M	SD	<i>t</i>	<i>d</i>	M	SD	M	SD	<i>t</i>	<i>d</i>
Mealtime Frequency^a	2.79	1.42	2.57	1.25	2.79	1.42	3.14	1.47	2.85	1.45	1.76	3.14
Mealtime Priority												
It is important that our family eat meals together	3.42	.74	3.20	.79	2.60*	.29	3.65	.55	3.51	.61	2.17*	3.65
Different schedules make it hard to eat together	3.16	.84	3.29	.78	-1.27	-.14	3.40	.68	3.27	.80	1.55	3.40
It's difficult to find time for a family meal	2.42	1.08	2.85	.97	-3.85**	-.43	2.32	1.01	2.45	.92	-1.20	2.32
Mealtime Atmosphere												
Dinner is about more than food, we all talk	3.29	.93	3.16	.97	1.24	.14	3.47	.74	3.32	.86	1.68	3.47
Mealtime is a time for talking with family	3.14	.90	2.97	.93	1.64	.18	3.15	.88	3.14	.92	.12	3.15
Eating family meals brings people together in an enjoyable way	3.68	.62	3.38	.78	3.76**	.41	3.80	.46	3.64	.68	2.57*	3.80
Mealtime Structure												
We (children) are expected to follow rules at mealtime	3.55	.65	3.40	.71	1.95	.22	3.71	.52	3.55	.65	2.50*	3.71
Manners are important at the dinner table	3.80	.48	3.77	.51	.488	.05	3.94	.23	3.83	.53	2.48*	3.94
We watch TV while eating dinner	2.73	1.10	2.99	.98	-2.27*	-.25	2.30	1.04	2.57	1.05	-2.36*	2.30

Note. *d* = Cohen's *d*. All *t*-tests had *df* = 326. ^aScale for Frequency of weekly mealtimes: 1 = Never, 2 = 1–2, 3 = 3–4, 4 = 5–6, 5 = 7. **p* < .05; ***p* < .001.

predictors were grand-mean centered and dichotomous predictors were effect coded to aid in interpretability. Based on significant bivariate correlations (see Table 3), mealtime priority–importance, mealtime priority–difficulty finding time, mealtime atmosphere, and mealtime structure–TV watching were all used to predict unhealthy eating, whereas mealtime priority–importance, mealtime priority–difficulty finding time, and mealtime atmosphere were all used to predict psychological distress. No mealtime variables were significantly correlated with healthy eating; therefore, no models were computed predicting this outcome. For each model, continuous predictors were these stated family mealtimes variables, person, and SES (household possessions dichotomized into low/high based on a median split) along with all two-way interactions involving the family mealtimes variables (i.e., family mealtimes X person, family mealtimes X SES, and family mealtimes actor X partner interaction).³ To arrive at a final model, we then trimmed away all two-way interactions that failed to reach at least marginal significance (*p* = .10). See Table 5 for estimates in both final models. (The results of the full models are available upon request).

Multilevel models predicting unhealthy eating. There was a statistically significant main effect of person (*b* = 0.26, adolescents reporting more unhealthy eating), *t* (326) = 10.51, *p* < .001. There was also a statistically significant partner interaction between mealtime priority - difficulty finding time - of the other person in the dyad and SES (*b* = 0.05), *t* (616) = 2.02, *p* = .044. Fig. 1 provides a visualization of the interaction although statistical decomposition showed that the other person's difficulty finding time for family meals was not significantly associated with unhealthy eating for either low SES adolescents/mothers (*b* = -0.02), *t* (321) = -0.76, *p* = .451 or high SES adolescents/mothers (*b* = 0.07), *t* (305) = 1.55, *p* = .122. All effects modeled accounted for 16% of the variance in participants' unhealthy eating, which is a medium effect size: pseudo *R*² = 0.163, χ^2 (2) = 146.633, *p* < .001.

Multilevel models predicting psychological distress. There was a statistically significant main effect of SES (*b* = -0.14), *t* (323) = -4.46, *p* < .001, a statistically significant actor effect of mealtimes-difficulty finding time (*b* = 0.08), *t* (628) = 2.78, *p* = .006, and a statistically significant actor effect of mealtime atmosphere (*b* = -0.14), *t* (624) = -2.68, *p* = .008. In other words, lower SES

³ Given that adolescent age was associated with psychological distress in ANOVAs, the two main APIMs were re-computed including adolescent age as a covariate. Results were virtually identical to those without the inclusion of age. Therefore, the Results reported do not include this covariate.

Table 5
Final actor-partner interdependence models predicting unhealthy eating and psychological distress.

Variable	Unhealthy Eating			Psychological Distress		
	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β
Person	.26***	.03	.26	-.01	.03	-.01
SES	.03	.03	.03	-.14***	.03	-.18
Own Importance	.01	.05	.01	-.05	.05	-.05
Partner Importance	.03	.05	.02	.09**	.05	.08
Own Difficulty Finding Time	.03	.03	.03	.08**	.03	.11
Partner Difficulty Finding Time	.02	.03	.02	-.04	.03	-.05
Time						
Own Mealtime Atmosphere	-.03	.05	-.02	-.14**	.05	-.12
Partner Mealtime Atmosphere	.02	.05	.01	.01	.05	.01
Own TV Viewing	-.02	.03	-.02	n/a	n/a	n/a
Partner TV Viewing	.05 ⁺	.03	.05	n/a	n/a	n/a
Own Importance X SES	n/a	n/a	n/a	-.13**	.04	-.12
Own Difficulty Finding Time X SES	-.01	.03	-.01	-.01	.03	-.01
Partner Difficulty Finding Time X SES	.05*	.03	.05	n/a	n/a	n/a
Own Mealtime Atmosphere X Partner Mealtime Atmosphere	.09	.06	.04	n/a	n/a	n/a

Note: Person: 1 = adolescent, -1 = mother; SES: 1 = high, -1 = low. Importance = "It is important that our family eat meals together"; Difficulty finding time = "It's difficult to find time for a family meal". TV viewing = "We watch TV while eating dinner".

⁺*p* < .10 **p* < .05. ***p* < .01. ****p* < .001.

adolescents and mothers, and those who reported more difficulty finding time for family meals or a less positive mealtime atmosphere also reported higher psychological distress. There was also a statistically significant actor interaction between mealtime priority–importance and SES, (*b* = -0.13), *t* (591) = -3.04, *p* = .003. Decomposition of the interaction showed that placing a higher priority on mealtimes was associated with lower psychological distress only for high SES individuals (*b* = -0.26), *t* (275) = -4.29, *p* < .001, whereas there was no significant effect for low SES individuals, (*b* = 0.01), *t* (308) = 0.16, *p* = .874 (see Fig. 2). All effects modeled accounted for 9% of the variance in participants' psychological distress, a small effect size: pseudo *R*² = 0.090, χ^2 (2) = 61.33, *p* < .001.

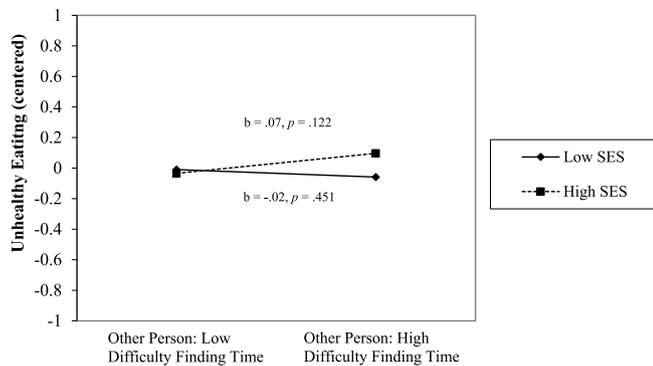


Fig. 1. Other Person's Mealtime Priority (Difficulty Finding Time) Predicting Unhealthy Eating as Moderated by SES. *Note.* 'Other Person' on the horizontal axis indicates a partner effect, meaning the effect of an adolescent's or mother's behavior on the health of the other person.

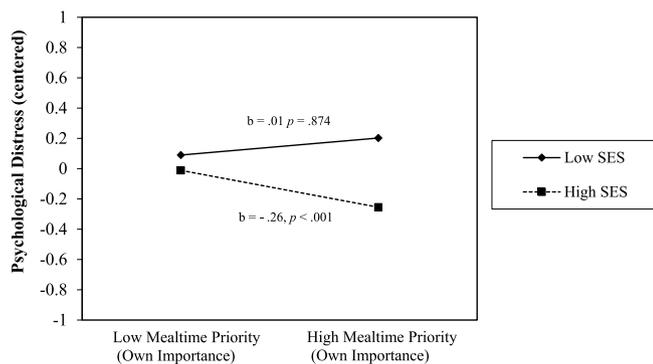


Fig. 2. Own Mealtime Priority (Importance) Predicting Psychological Distress as Moderated by SES. *Note.* 'Own' on the horizontal axis indicates an actor effect, meaning the effect of an adolescent's or mother's behavior on his/her own health.

4. Discussion

To our knowledge, this is the first study to explore the family mealtime environment in Jamaica or the Caribbean. First, we examined reported mealtime quantity and quality across generation (adolescents versus mothers), adolescent age, and adolescent gender. Second, we modeled associations among family mealtime variables and nutritional and emotional health treating SES as a moderator. Results showed that shared family mealtime in urban Jamaica are moderately frequent and positively viewed by both adolescents and mothers, although there are differences across generation, age, and gender. Moreover, mothers ate more unhealthily if they watched more TV during meals, and high SES adolescents ate more unhealthily if their mothers had more difficulty finding time for family meals (and vice versa: partner interaction). Additionally, adolescents and mothers were more psychologically distressed if they themselves had more difficulty finding time for family meals, if they had less positive attitudes/behaviors around mealtime atmosphere (actor effects), or if they were high SES individuals placing lower importance on mealtimes (actor interaction). We will discuss each set of findings in turn followed by implications, limitations, and recommendations for future research and practice.

4.1. Quantity of family mealtimes in Jamaica

Compared to families in the U.S. and Europe, Jamaican families seem to have somewhat fewer shared meals every week. On average, mothers and adolescents in our sample reported having family meals three to four times per week whereas families in the U.S. and across Europe reported an average of five to seven family mealtimes per week

(Hammons & Fiese, 2011; Petty et al., 2013; Seirra-Baigrie et al., 2009). These findings may reflect socioeconomic and gender socialization realities in this developing country: although mothers are expected to prepare dinner as primary caregivers, they may not have enough time, resources, and energy to execute daily family mealtimes due to work commitments and other family responsibilities (e.g., household chores). There may also be more demands on adolescents' time (e.g., caretaking responsibilities, formal/informal work) which interfere with mealtime frequency.

4.2. Mothers and younger adolescents report higher quality family mealtimes

Mothers in our study were similar to those in Fulkerson et al. (2006) U.S. sample in that they endorsed behaviors and attitudes supporting higher mealtime quality than did their adolescents on all three dimensions of priority, atmosphere, and structure. Our findings are also compatible with international findings that families with younger adolescents are more likely to eat regular family meals (see CASA, 2005; Zaborskis et al., 2007), which reflects normative socio-emotional and contextual transitions during adolescence (Story & Neumark-Sztainer, 2005). Older adolescents also reported a less enjoyable atmosphere around mealtimes. One potential explanation comes from prior findings in Jamaica that older adolescents often experience difficulty talking with their parents due to lack of balanced communication, and limited parental understanding of social transitions during adolescence (Ferguson & Dubow, 2007; Smith & Mosby, 2003). It is also noteworthy that younger Jamaican adolescents are expected to follow the rules and use table manners although families with younger children in Europe report less strict mealtime structure than those with older children (Spain: Petty et al., 2013; UK: White & Halliwell, 2010).

4.3. Make it count: mealtime quality matters more than quantity for health

The quantity of family meals was not associated with nutritional or emotional health in Jamaica (unexpected) whereas the *quality* of those shared meals was significantly related to health outcomes (expected). For nutritional health, mothers who watched more TV during meals also reported more unhealthy eating (correlation in Table 3). This finding is consistent with Ferguson et al. (2017) finding in Kingston, Jamaica that mothers' cable TV viewing hours predicted their unhealthy eating. This finding also parallels studies demonstrating the positive association between healthy eating behaviors and mealtime structure among families in the U.S. (Boutelle et al., 2003; Fiese & Schwartz, 2008), European countries (de Wit et al., 2015), Brazil (Petty et al., 2013) as well as New Zealand (Gallegos et al., 2011; Utter et al., 2013). For instance, in one U.S. study, higher frequency of TV viewing was associated with parents' lower fruit and vegetables consumption and higher fat consumption (Boutelle et al., 2003). Similarly, one recent observational study among U.S. minority families found that simply having the TV on during meals was negatively associated with healthy eating, and positively associated with serving fast food, especially when family members were paying attention to the TV (Trofholz, Tate et al., 2016).

Risks to emotional health included difficulty finding time for family meals and less positive attitudes or behaviors towards maintaining a pleasant mealtime atmosphere conducive to conversation. This finding is consistent with evidence from the United States (Eisenberg et al., 2004) and Europe (see Harrison et al., 2015; Offer, 2013; Sierra-Baigrie et al., 2009) showing the positive effect of enjoying shared meals and engagement in positive family communication during meals on emotional health. Voluntary exchange of information between parents and children likely provides emotional support to better cope with psychological stressors. For example, cross-cultural studies across North America, South America, Asia, and Africa have found that adolescents' disclosure to parents is positively associated with their self-esteem and

positive parenting (Hunter, Barber, Olsen, McNeely, & Bose, 2011; Smetana, Metzger, Gettman, & Campione-Barr, 2006).

4.4. Failure to prioritize family mealtimes is especially unhealthy in high SES families

SES was positively associated with family mealtime quality (expected), but not quantity (unexpected). Apparently, in this fast-paced urban developing context, both high and low SES families share about the same number of family meals each week but higher SES families have more positive attitudes and behaviors around the priority, atmosphere, and structure of mealtimes. This is consistent with recent findings in Australian families where higher SES families reported higher family mealtime importance and more optimal structure (Litterbach et al., 2017). Additionally, in our study, the effects of mealtime priority on health varied by SES (expected), whereas they did not for mealtime atmosphere (unexpected) or structure (expected). High SES families were *more* vulnerable to poor nutritional and emotional health, which was associated with low family mealtime prioritization. This is the logical extension of our expectation that mealtime prioritization would be more beneficial for high SES families. And this appears to be a dynamic family process where adolescents and mothers may be influencing each other – there were both actor and partner effects indicating that individuals' own attitudes/behaviors regarding making time for shared meals mattered for their health, and so did those of their family members (i.e., their mother/adolescent).

For high SES families lack of time may lead families to skip meals and replace them with snacks or fast food, which has been linked to more unhealthy eating behavior (see Jarosz, 2017). In Jamaica, fast food restaurants are the most prominent and popular category of restaurant due to their affordability in a developing country context. For example, Kentucky Fried Chicken (KFC) is the most frequently advertised food product in outdoor and newspaper advertising in Kingston (Nelson, Ahn, Giray, & Ferguson, 2017), and it is a favorite spot for a family dinner outing on Fridays and weekends. Relative to low SES families, high SES families may be better able to afford to eat fast food when pressed for time, which may explain the moderation effect of SES for nutritional health. In addition, although high SES families can afford ingredients to prepare a healthy family meal, they may not be able to dedicate adequate time for both food preparation and eating. This may result in moving eating to a secondary role (i.e., grazing), which has been found to be more common among people with higher income in the United States (Hamermesh, 2010). At the same time, because high SES families have more financial and emotional resources to actually prioritize mealtimes (Roy et al., 2014), lower-than-expected mealtime prioritization may lead to disappointment and forego the psychological benefits of supportive mealtime conversation. This may explain the moderation effect of SES for emotional health.

4.5. Limitations and future directions

A limitation of this study is usage of self-reports for family mealtimes. Most items in our measure queried mealtime beliefs and attitudes rather than actual behavior. Future research can include additional reporters, use different family mealtimes measures or apply observational methods to capture nuances during family meals. Second, our data are cross-sectional; thus, we are not able to test causal mechanisms. Although some of our statistically significant correlations were small, these were preliminary precursors to the main dyadic data analyses, which revealed effect sizes from small to medium, indicating meaningful effects. Notwithstanding, this study provides the first description of family mealtimes and their positive associations with nutritional and emotional health in the Caribbean. Our findings suggest that practitioners and policy-makers in Jamaica can take advantage of adolescents' and parents' positive views of family mealtimes in creating effective strategies to assist families in having healthy and regular shared mealtimes. It may be important to target both youth and parents

given that our findings revealed partner effects of family mealtimes attitudes/behaviors on eating choices, meaning that adolescents and mothers influence each other in this regard.

5. Conclusion

Our study findings are the first in the Caribbean to reveal that mealtime quality (i.e., priority, atmosphere, structure) is more important than mealtime quantity (frequency) for nutritional and emotional health. Our results among families in Jamaica underscore the universality and robustness of the protective effects of attitudes and behaviors supporting high quality family mealtimes. These findings are important though not surprising because in Jamaica, like in other places, shared family meals which allow family members more time to talk and connect are usually home cooked meals with healthier ingredients (e.g., vegetables) and methods of preparation (e.g., steaming). Our findings imply that however many weekly meals Jamaican families are able to share together, what is important is to make those mealtimes count as quality time. Leisurely family meals with enjoyable conversation uninterrupted by television, such as the age-old Jamaican tradition of “Sunday dinner”, may nourish both body and soul, and may be promoted as a healthy counterpoint to the “nyam and scam” (i.e., eat and run) culture of modern urban life.

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