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Consumption of comfort foods among adolescents in Tura, Meghalaya

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Abstract

The present study entitled "Consumption of Comfort Foods among Adolescents in Tura, Meghalaya" was carried out to study the consumption of comfort food and emotional eating behavior of adolescents. The research designed used in the present study was exploratory type of research design and it was conducted on a convenience sample of 200 adolescents (100 boys and 100 girls). The participants selected were in the age group of 13 and 17 years and had to voluntarily agree to fill out the questionnaire. Results showed that the highest consumption of comfort foods were milk tea, momo, biscuit and jhal muri. It was also found that adolescents experienced headache when they are in stress condition. In terms of comparison of stress level between boys and girls, there is no significant association between two genders based on stress level score. With the comparison of association between comfort foods, age and gender, it is evident that there is a 5% level significant difference in the consumption of comfort foods, age and gender of school going adolescents.

Keywords: Adolescents, comfort food, emotional eating, stress, gender, age

Introduction

Adolescence is a period of rapid linear growth, change in the body composition, reproductive maturation and psychosocial development. In this age group nutrient needs are increased to meet the demands of the growth and development. There are major gender differences in the timing and rate of peak linear growth, puberty and sexual development, resulting in divergent nutrient needs. Nutritional status influences the normal growth and development as the hormones responsible for linear growth, change in body composition, and sexual development are nutritionally regulated. During adolescence, food intake is influenced by psychosocial factors; peers and popular culture, including the mass media and advertising which in turn significantly affect dietary patterns (Edelstein and Sharlin, 2009) [12]. Poor nutrition begins before birth, and normally persists into puberty and adult life and can extent generations. Constantly malnourished girls are more likely to remain undernourished during puberty and adulthood, and when the girls are expecting, they are more likely to give birth to low birth-weight babies. Epidemiological facts from both the developing and industrialized countries now recommended to link between foetal under-nutrition and increased risk of various adult chronic diseases (ACC/SCN, 2000).

The term comfort food refers to those foods whose consumption gives a consolation or a feeling of happiness. In other words, food offers some sort of psychological, particularly emotional, comfort (Hughes and Hughes, 2007) [20]. It is often recommended that comfort foods contains a high calorie content such as high in sugar and/or carbohydrates (Fearnley-Whittingstall, 2012; Wagner *et al.*, 2014) [15] and that they are likely to be linked with childhood and/or home cooking. In fact, comfort foods are frequently prepared in a simple or traditional style and this will lead to a nostalgic or sentimental appeal, that will reminding us of home, family, and/or friends (Locher *et al.*, 2005) [28]. Comfort food can give a feeling of happiness and joy when people are stressed and because of their ability to remind us of home, comfort foods can revolutionize effects of homesickness experienced by those who are far away from home, such as by students who are living away from home as they leave their home to pursue higher education in colleges and universities (Troisi and Gabriel, 2011) [34]. Although comfort food may give benefit to a person, but it can also affect the health of an individual. The high content of carbohydrates, sugars, and fat found in both snack type and more vigorous comfort foods can affect the physical health as well as their fat levels of an individual (Levitani and Davis, 2010) [27]. The majority adolescents frequently consume meals and snacks away from home.

Teenagers who eat at least three times in the past week had energy intakes about 40 percent higher than adolescents who did not consume fast food. Frequency of fast food consumption is also inversely associated to daily servings of vegetables, fruits and dairy products (French *et al.*, 2001) [16]. Teenagers who portray themselves as overweight were more likely to have deprived dietary consumption patterns (Videon and Manning, 2003) [35] but did not vary in frequency of fast food consumption in contrast with normal weight youngsters (French *et al.*, 2001) [16]. Juvenile boys are more likely than girls to consume away from home (Briefel and Johnson, 2004) [8]. Teenagers who were in work consume fast food more frequently than those who did not work (French *et al.*, 2001) [16]. Emotional eating has been associated to concerns including increased external motivation for eating healthily and heightened monitoring of one's food consumption, outside of emotional eating occurrence (Adriaanse *et al.*, 2010) [3]. Likewise, fears about weight prior to a physical activity involvement have been shown to expect emotional eating and persistent concern about weight but not post-intervention body mass index (Belcher, 2011) [4]. There are strong and multifaceted relations between obesity, psychological stress, and eating behavior (Adam and Epel, 2007; Dallman, 2010; Warne, 2009) [2, 9]. The part of stress in promoting the eating and obesity has been relatively well illustrated. For example, stress has been shown to support both obesity (Dallman, 2010; McEwen, 2008; Wardle *et al.*, 2010) [9] and food intake (Born *et al.*, 2010; Epel *et al.*, 2001; Pecoraro *et al.*, 2004; Rutters *et al.*, 2009) [7]. In the earlier, abdominal obesity is most affected by stress because of the role of prolonged stress-induced glucocorticoid secretion in encouraging abdominal fat deposition (Bjorntorp and Rosmond, 2000; Dallman *et al.*, 2005) [6, 9]. In the end, largely driven by glucocorticoids, stress-induced eating tends to support eating of highly palatable, nutrient-dense foods which are high in sugar and fat (Adam and Epel, 2007; Torres and Nowson, 2007; Warne, 2009) [2]. Additional, acute and chronic stress can work together to worsen stress eating. For example, those who are under chronic stress tend to consume more under acute stress situations (Gibson, 2006) [17].

Materials and Methods

An exploratory research design was conducted on a convenience sample of 200 adolescents (100 boys and 100 girls). The respondents were selected from two schools in Tura, Meghalaya. To be eligible for inclusion, the respondents needed should be between 13 and 17 years old and had to voluntarily agree to fill out the questionnaire. The study was voluntary and there was no compensation for participation. A

questionnaire consists of demographic details, emotional eating habits and stress level of adolescents.

Results and Discussion

The present study was carried out to study the consumption of comfort foods among adolescents in Tura, Meghalaya. This topic was selected because the imbalance and frequent search for sensation of comfort food can cause harm to physical and mental health, which can lead to binge eating and obesity as a consequence.

Table 1: Percent distribution of adolescents based on age and residing area

Variables	Gender		Total (N=200)	
	Boys	Girls		
Age	13-14 years	21	27	48
	14-15 years	16	22	38
	15-16 years	15	21	36
	16-17 years	48	30	78
Residing Area	Urban	87	78	165
	Rural	13	22	35

Demographic details

Age

It can be seen from table 1, that the 48% boys and 30% girls were in the age group of 16-17 years and the number of adolescents in the age groups of 14-15 years and 15-16 years were very low compared to the other age group.

Residing area

From table 1, it is evident that the majority of adolescent boys and girls are from the urban background (boys-87%, girls-78%).

Adolescent boys have larger requirements for most nutrients compared to girls because of the differences in growth and development. The exemption is iron; post-menarcheal adolescent girls require more iron than boys because of the menstrual blood losses (Institute of Medicine [IOM], Food and Nutrition Board, 2001) [21]. In current years there has been considerable research interest in determining the occurrence of self-harm among adolescents (O'Connor and Sheehy, 2000) [30] and this is not surprising as self-harm is a key forecaster of completed suicide (Hawton *et al.*, 1999) [18]. In addition, considerable gender variation can be found in relation to health-related behavior, both in adults and in youngsters. In general, males reveal more health-risk and less health-protective behavior than females (Steptoe *et al.*, 2002; Stock *et al.*, 2001) [32].

Table 2: Percent distribution of adolescents based on poor sleeping habits

Variables	Gender		Total (N=200)	
	Boys	Girls		
Poor Sleeping habit (Staying up late)	Yes	39	44	83
	No	61	56	117
Reasons for staying up late at night	Mobile phones	26	16	42
	Books	22	26	48
	Television	13	14	27

Poor sleeping habits

From table 2 (fig 1), it is found that 22% boys and 26% girls read books at night and the numbers of adolescents that watch television (boys-13%, girls-14%) were low compared to the

adolescents that used the mobile phones.

Sleep affects the physical growth, behavior and emotional development besides determining cognitive functioning, learning and attention especially of a growing child.

Adolescent sleep patterns deserve a particular attention because of the possible impact on the school performance (Kaur *et al.* 2017) [24]. Teenagers advance their deductive reasoning, information processing, specialized knowledge during early adolescence. From the early adolescence the capacity for extract, multidimensional, planned, and hypothetical thought increases into middle adolescence. (Edelstein and Sharlin, 2009) [12].

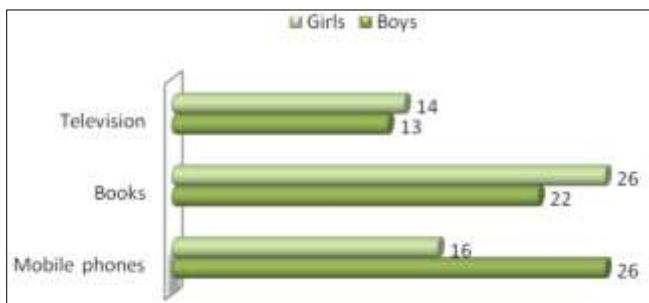


Fig 1: Percent distribution of adolescents based on poor sleeping habits

Table 3: Percent distribution of adolescents based on consumption of comfort foods.

Variables		Gender		Total (N=200)
		Boys	Girls	
Milk tea	Yes	30	23	53
	No	70	77	147
Coffee	Yes	14	15	29
	No	86	85	171
Noodles	Yes	19	14	33
	No	81	86	167
Chaat	Yes	14	10	24
	No	86	90	176
Samosa	Yes	19	12	31
	No	81	88	169
Cutlet	Yes	5	4	9
	No	95	96	191
Momo	Yes	22	19	41
	No	78	81	159
Fried rice	Yes	13	9	22
	No	87	91	178
Chowmein	Yes	8	5	13
	No	92	95	187
Pakoda	Yes	10	12	22
	No	90	88	178
Jhal muri	Yes	15	21	36
	No	85	79	164
Egg roll	Yes	19	9	28
	No	81	91	172
Biscuit	Yes	22	18	40
	No	78	82	160
Cake	Yes	21	13	34
	No	79	87	166
Kachori	Yes	6	5	11
	No	94	95	189

Emotional eating habits

It can be seen from table 3 that the preference of comfort foods given by the adolescents were milk tea, coffee, noodles, chaat, samosa, cutlet, momo, fried rice, chowmein, pakoda, jhal muri, egg roll, biscuit, cake, kachori. Majority of adolescents both boys and girls preferred to consume milk tea (30% boys, 23% girls), momo (22% boys, 19% girls), biscuit

(22% boys, 18% girls), jhal muri (15% boys, 21% girls). The least consumed comfort foods were cutlet (5% boys, 4% girls), kachori (6% boys, 5% girls) and chowmein (8% boys, 5% girls).

Many comfort foods are associated with what our parents or grandparents may have given us to eat when we were ill as children (Birch *et al.* 1980) [5]. There tends to be a lot of variation across both individuals and cultures in terms of the foods that people think of as comforting. According to the research, one important trigger leading to the consumption of comfort foods occurs when people experience negative emotions (Dube *et al.* 2005) or else try to regulate their emotions (Evers *et al.*, 2010) [14]. That is, people appear to comfort eat as a means of getting themselves into a more positive emotional state (Wansink *et al.*, 2003) [36], or, at least, that is the effect that they wish to achieve. Those who have become dependent on the consumption of comfort foods to make themselves feel better can eventually suffer from the physical problems of obesity and all that comes with it. These risks include heart disease, strokes, high blood pressure, diabetes, cancer, gallbladder disease, osteoarthritis, gout, and breathing problems (Levitan, R. and C. Davis, 2010) [27] (Obesity, Cholesterol, and Heart Disease, 2011). There is also the risk of developing unhealthy eating behaviors such as emotional eating and overeating. The fight against these problems have also focused mainly on the biological standpoint, studying effects of insulin and leptin on the body, rather than on how eating behavior and food choice can affect weight gain over the length of our lives (Levitan, R. and C. Davis, 2010) [27]

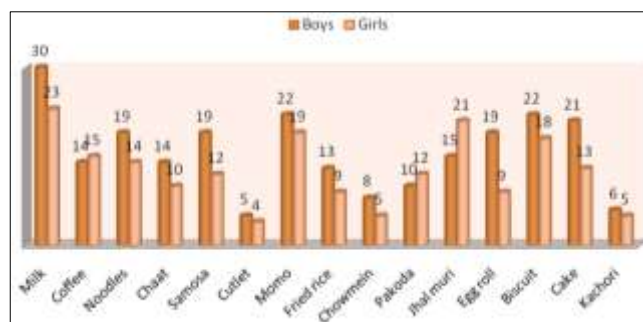


Fig 2: Percent distribution of adolescents based on preference of foods when sad/depressed

Table 4: Percent distribution of frequency of stress related symptoms experienced by the subjects

Variables	Gender		Total (N=200)
	Boys	Girls	
Headache	57	59	116
Stomach upset	11	25	36
Fatigue	0	1	1
No symptoms	32	15	47

Frequency of stress related symptoms experienced by the subjects

It is evident from table 4 (fig 3) that 57% boys and 59% girls experienced headache when stressed followed by stomach upset (boys-11%, girls-25%) and fatigue (boys-0%, girls-1%). It was also found that some adolescents do not experience any symptoms during stressful times.

As confirmed by reports after reports, girls are more likely than boys to labor under feelings of psychological stress and

tension. A recent study found that a staggering 31 percent of girls and young women experience symptoms of anxiety, compared to 13 percent of boys and young men (Damour 2019) [10]. Studies also recommended a relationship between grade level, class enrollment and stress. The experience of peer relationship stressors increased from the grades fifth through eighth (Henderson and Dickey, 1988) [19]. Educational dysfunctions heightened stress vulnerability (Smith and

Leavitt, 1979) [31] and students enrolled in exceptional classes held related perceptions of stressors to non-exceptional, but reported rarely experiencing the most stressful measures. Stressors associated to academic accomplishment, social status and career aspirations were rated more stressful for exceptional than non-exceptional students (Kames and Oehler-Stinnett, 1986) [23].

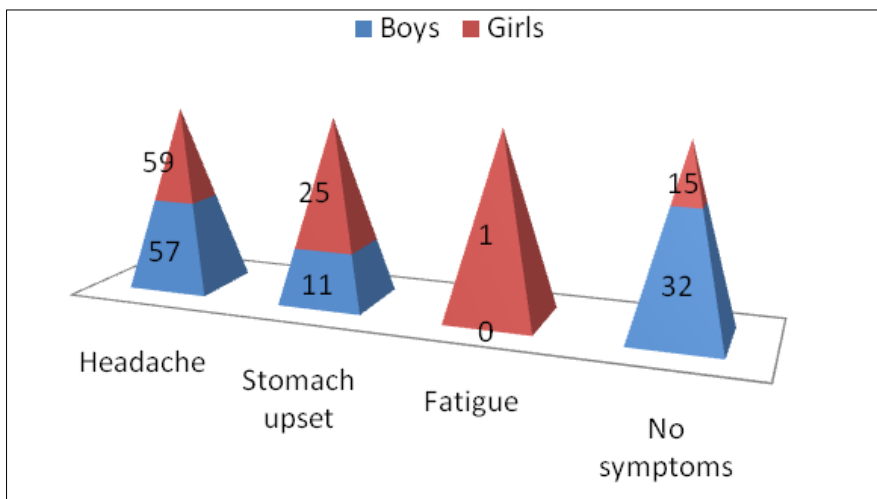


Fig 3: Percent distribution of frequency of stress related symptoms experienced by the subjects

Table 5: Association between comfort foods and age

Variables		Age				Chi-square value	Level of Significance
		13-14 years	14-15 years	15-16 years	16-17 years		
Milk	Yes	3	6	12	26	4.367 ^a	NS
	No	35	32	24	52		
Coffee	Yes	13	5	8	18	2.508 ^a	NS
	No	35	33	28	60		
Noodles	Yes	13	9	12	18	1.488 ^a	NS
	No	35	9	24	0		
Samosa	Yes	20	10	12	17	6.083 ^a	NS
	No	28	28	24	61		
Momo	Yes	28	15	13	30	6.150 ^a	NS
	No	20	23	23	48		
Fried rice	Yes	7	5	6	22	5.524 ^a	NS
	No	41	3	30	56		
Jhal muri	Yes	8	9	9	20	1.486 ^a	NS
	No	40	29	27	58		
Egg roll	Yes	13	8	9	19	0.423 ^a	NS
	No	35	30	27	59		
Biscuit	Yes	9	5	9	13	1.911 ^a	NS
	No	39	33	27	65		
Cake	Yes	23	20	15	22	8.343 ^a	p<0.05
	No	25	18	21	56		

NS - Non-significant

a - 0 cells (0.0%) have expected count less than 5. The minimum expected counts is 9.41.

Comfort foods and age

From table 5, it is clear that there is significant association at 5% level in the consumption of cake and the age of school going adolescents. It can also be seen from the above table as there is no significant association between age and the other comfort foods.

Preference of comfort foods also varies with age. Young adults are more likely to eat snack-related comfort foods like candy and chips. Older adults prefer more meal like pasta, steak or casseroles. It has been generally found that social-

affective contexts can influence food preferences and that childhood experiences can be critical in forming life-long food consumption preferences and habits. Unfortunately, neither of these streams of research distinguish between different types of preferred foods nor do they suggest the extent to which one's preference for a comfort food is influenced by their gender or their age (Wansink *et al.*, 2003) [36]

Table 6: Association between comfort foods and gender

Variables		Gender		Chi-square value	Level of Significance
		Boys	Girls		
Milk	Yes	35	22	4.147 ^a	P<0.05
	No	65	78		
Coffee	Yes	20	24	0.466 ^a	NS
	No	80	76		
Noodles	Yes	32	20	3.742 ^a	NS
	No	68	80		
Samosa	Yes	30	29	0.024 ^a	NS
	No	70	71		
Momo	Yes	39	47	1.306 ^a	NS
	No	61	53		
Fried rice	Yes	23	17	1.125 ^a	NS
	No	77	83		
Jhal muri	Yes	28	18	2.823 ^a	NS
	No	72	82		
Egg roll	Yes	30	19	3.271 ^a	NS
	No	70	81		
Biscuit	Yes	19	17	0.136 ^a	NS
	No	81	83		
Cake	Yes	38	42	0.333 ^a	NS
	No	62	58		

NS - Non-significant

a - 0 cells (0.0%) have expected count less than 5. The minimum expected counts is 9.41.

Comfort foods and gender

The chi-square value found showed that there is a significant association at 5% level between the gender and the milk consumption, while there was no significant association for the remaining comfort foods as shown in the table.

Adolescents' food consumption tends to vary according to gender (Savige *et al.*, 2007 and Lake *et al.*, 2006) [26]. Studies across a number of countries have consistently shown that females' dietary patterns are healthier than those of males (Wardle *et al.*, 2004; Fagerli *et al.*, 1999; Rappoport *et al.*, 1993) [37, 14]. Females are more likely to avoid high-fat foods, consume more fruits and fibre and limit salt intake than men (Wardle *et al.*, 2004) [37].

Table 7: Comparison of stress level between boys and girls

Stress level score	Gender	N	Mean ± SD	't' value	Level of Significance
	Boys	100	20.31±9.506		
Girls	100	18.92±8.424			

NS - Non-significant

Stress level

Results show that there is no significant difference between the adolescent boys and girls based on the stress level score.

Research found that the majority of girls have shown low stress and very low stress (Khan *et al.* 2015) [25]. There can be many reasons for this, it may be their parent's expectation from them or it may be the boy's high goal and target for their bright and successful career (Khan *et al.* 2015) [25]. According to Kai-wen (2010) [22] students at this level may sometimes experience incompatibility of their mental maturity with their physical transformation or social environment and therefore they suffer from problems arising from insufficient adaptation. These problems may promote reason for psychological troubles and may even persuade abnormal behavior. Kai-wen in his study has also talk about issues that

control stress among school going teenagers such as physiological or mental alterations, school factors, relationship with opposite sex and family surroundings.

Conclusion

According to the study performed on adolescent boys and girls, it was found that emotions might provoke emotional eating behaviour, which may contribute to the risk of developing chronic diseases such as obesity, cardiovascular diseases and other adverse health consequences. The results showed that majority of adolescent boys and girls preferred to drink milk tea when they are sad or depressed followed by the consumption of momo, biscuit and jhal muri. It is also evident that adolescents experienced headache when stressed and there is no significant difference between the adolescent boys and girls based on the stress level score. The consumption frequency of comfort foods seems to be associated with the sex, age. It can be seen from the above result that there is a 5% level significant difference in the consumption of comfort foods, age and gender.

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