

Breakfast Missing Pattern of Pre-Adolescent Primary School Children Kisumu County, Kenya

Agrippine Ngendakuriyo^{1*}, Agatha Christine Onyango² and David Omondi Okeyo³

¹Student, Department of Nutrition and Health, Maseno University, Kenya

²Lecturer, Department of Nutrition and Health, Maseno University, Kenya

³CEO, Kenya Nutritionists and Dieticians Institute (KNDI), Kenya

***Corresponding Author:** Agrippine Ngendakuriyo, Student, Department of Nutrition and Health, Maseno University, Kenya.

Received: July 06, 2020; **Published:** July 29, 2020

Abstract

Breakfast is an important meal of a day, especially to children and pre-adolescents. However, pre-adolescents seem to have the highest prevalence of missing breakfast despite its importance to their cognitive performance, growth and development. There is a paucity of literature in Africa regarding the prevalence of missing breakfast among school going children particularly in Kenya. The breakfast missing pattern among pre-adolescents are not well understood. Kisumu Central Sub-county was purposively picked for the study because it is an urban set-up: a factor that makes most households be able to afford at least three meals per day. This study thus assessed the missing breakfast pattern among school children in Kisumu Central Sub-County. A cross-sectional study design was adopted where pre-adolescents were recruited for this study. Two-stage cluster sampling technique was adopted for the selection of the sample 422 pre-adolescents from the targeted population of 14,473 pre-adolescents of school going children. Data was collected using a questionnaire comprising missing breakfast pattern. Data analysis was done using descriptive statistics to determine the breakfast missing pattern. The study established that 179 (44.0%) of pre-adolescents missed breakfast on the survey day, 154 (38.0%) of the respondents often missed breakfast, and 221 (54.3%) of the pupils reported to have missed breakfast the previous week. This study generated insight which will allow for appropriate interventions programs to be designed aimed at bettering breakfast consumption pattern among pre-adolescents attending schools.

Keywords: Breakfast; Pre-Adolescents; Pattern; Cognitive; School Children

Background

Breakfast is an important meal of the day [1], however, one past study indicates that despite the potential significance of breakfast consumption, the prevalence rate of breakfast missing among the children and adolescents has increased in the past few decades [2,3]. Furthermore, according to Affenito the prevalence of regular breakfast consumption tends to decrease as children grow older [4].

Although there is an increasing proof to back up the need to practice regular consumption of breakfast, missing breakfast together with improper feeding habits has been often registered among children. Globally, the missing breakfast prevalence has been reported to be vary from 16.6% to 23.1% in twelve countries [5] and from 25% to 67% across countries in North America and 41 European nations

[6]. Three studies on school breakfast programs have registered positive effects of high rates of breakfast consumption and academic progress, nutritional status as well as the general health of young youths [4,7,8]. Ali and his colleagues [1] report that despite the fact that both the mothers and their children regarding breakfast as the most important meal of a day, 23% of the mothers and preadolescents recorded missing breakfast in their study.

A study conducted by Adole and Ware [9], found that the breakfast missing prevalence was high, and 42.3% of the pre-adolescents participants were skipping breakfast 2 or 3 times each week. This establishment is higher than that found in other countries. An Indian study showed that nearly two thirds (62.3%) of the early adolescents who participated in the investigation habitually consumed breakfast, whereas a third of them (33.8%) consumed breakfast irregularly skipping it 2 or 3 times per week [10]. Subsequently, a study conducted in Hong Kong found that nearly a third (30.5%) of the pre-adolescents skipped breakfast for at least once in a week [11]. The same study showed that as preadolescents entered the critical growth spurt, they became even more likely not to consume breakfast, and 17% of them with ages between 12 and 13 years responded that they rarely consumed breakfast. An early study reported that 12% of Australian and 19% of American adolescents ate breakfast irregularly [12]. Furthermore, an investigation carried out in Japan demonstrated that over 15% of pre-adolescent school children did not consume breakfast on a regular basis [24]. Also, a number of studies have indicated that the pre-adolescents tends to skip breakfast as they age [13-15]. Rouboust literature demonstrates that the prevalence of breakfast missing among the pre-dolescents falls is between 20% and 55% [16-18].

In Kenya, the breakfast missing patterns among the pre-adolescent school children has not been established, given that limited studies have been conducted on the same. Therefore, researchers have not understood the pre-adolescents' breakfast missing pattern to inform generation of evidence-based interventions that promotes child and adolescent growth and development. Such an insight can instigate the development of interventions that will promote breakfast consumption during childhood which may be urgently needed. To develop effective interventions, knowledge about the underlying factors, that explains the breakfast missing habits among adolescents, is important [19].

Materials and Methods

The study adopted a cross-sectional study design where data was collected once and analysed. The Targeted population for the research was 14473 pre-adolescents (11 - 13 years) attending school at Kisumu Central Sub-county. A sample size of 422 was recruited for this study. A questionnaire was used to collect data and entailed finding out the breakfast missing pattern and yielded information on pattern of missing breakfast on the survey day, how often the pre-adolescents missed breakfast, frequency of missing breakfast among the pre-adolescents, and possible reasons for missing breakfast. Data was entered into SPSS version 22 (Illinois, Chicago). A univariate analysis was carried out on frequencies of breakfast missing. Ethical approval was sought from Maseno University Ethics Review Board (MSU/DRP/MUREC/00590/18) to conduct the study.

Results

A total of 422 respondents from the 22 schools in Central zone in Kisumu Central Sub-County were recruited into the study. Of the 422 respondents, 407 completed the study. Fifteen (15) parents did not consent to their children participating in the study. The proportion of male to female pre-adolescents consented to the study was 4:6. A total of 246 (64.9%) of the households were male dominated with the fathers being the main provider to the families. There were 278 (73.7%) in a married relationship where the mothers 319 (7.4%) were largely responsible for deciding how the families used its food. The households 354 (95.2%) obtained the family food through purchase with cash largely obtained from small scale businesses 200 (54.6%) and formal employment 118 (32.2%) as shown in table 1.

A reasonable proportion 179 (44.0%) of pre-adolescents missed breakfast on the day of study compared with their counterpart 228 (56.0%) who did not miss breakfast. 154 respondents (38.0%) reported to often miss breakfast while 251 (62.0%) said they do not often

| Characteristics | N | % |
|---|-----|------|
| Sex of household head | | |
| Male | 246 | 64.9 |
| Female | 133 | 35.1 |
| Marital status | | |
| Singled | 38 | 10.1 |
| Married | 278 | 73.7 |
| Separated | 25 | 6.6 |
| Widowed | 36 | 9.5 |
| Main source of income | | |
| Small scale business | 200 | 54.6 |
| Casual labor | 29 | 7.9 |
| Formal employment | 118 | 32.2 |
| Any other (specify) | 19 | 5.2 |
| Estimated percentage of Household income is allocated for food | | |
| Kshs < 10000 | 147 | 42.2 |
| Kshs 10000 - 20000 | 98 | 28.2 |
| Kshs 20000 - 30000 | 41 | 11.8 |
| Kshs > 30000 | 62 | 17.8 |
| How is food obtained in the family | | |
| Buying | 354 | 95.2 |
| Farming | 12 | 3.2 |
| Food aids/donations | 2 | 0.5 |
| Both farming and buying | 4 | 1.1 |
| Primary provider for the family | | |
| Father | 219 | 60.3 |
| Mother | 135 | 37.2 |
| Relatives | 6 | 1.7 |
| Others (specify) | 3 | 0.8 |
| Who decides how family food is used | | |
| Father | 37 | 10.1 |
| Mother | 319 | 87.4 |
| Both father and mother | 1 | 0.3 |
| Any other | 8 | 2.2 |

Table 1: Socio-demographic characteristics of household (n = 407).

miss breakfast. 221 (54.6%) of the respondent reported to have missed breakfast the previous week whereas 185 pre-adolescents constituting 45.4% said they did not miss breakfast the previous week. 114 of the respondents (50.4%) reported to have missed breakfast once or twice in the previous week, 53 (23.5%) said they missed three to four time, while a quarter of them 59 (26.1%) said they missed

breakfast more than four times the previous week. 70 of the respondents (31.7%) said that it was their habit or usual practice to miss breakfast, 54 respondents constituting 24.4% proportion reported to be missing breakfast because of financial or economic reasons as shown in table 2.

| Characteristics | N | % |
|--|-----|------|
| Missed breakfast | | |
| Yes | 179 | 44.0 |
| No | 228 | 56.0 |
| Often miss breakfast | | |
| Yes | 154 | 38.0 |
| No | 251 | 62.0 |
| In the past one week missed breakfast | | |
| Yes | 221 | 54.6 |
| No | 184 | 45.4 |
| Number of times missed breakfast in the past one week | | |
| 1 - 2 times | 114 | 50.4 |
| 3 - 4 times | 53 | 23.5 |
| More than 4 times | 59 | 26.1 |
| Reason for missing breakfast | | |
| Habit/usual practice | 70 | 31.7 |
| Financial/economic | 54 | 24.4 |
| No breakfast prepared or someone to prepare | 52 | 23.5 |
| Any other reason | 45 | 20.4 |

Table 2: Breakfast missing pattern (n = 407).

23.5% (52) of those who gave reasons said they miss breakfast because there was no breakfast or no person to prepare for them, whereas 45 respondents (20.4%) gave other reasons such as lack of time to prepare breakfast as shown in table 2.

Discussion

Studies have demonstrated that breakfast is an important meal of the day [3,20]. Consuming breakfast has been shown to enhance metabolic rate, stabilizes the sugar level of the blood [21] and minimizes risks for starvation and overeating or cravings during the day [22]. Also, it helps individuals satisfy their satiety and consume fewer calories and in turn aid in keeping their weights in check and reduce the risk of developing overweight and obesity [1,23] among other benefits.

However, the current study established that 179 (44.0%) of pre-adolescents missed breakfast on the survey day. This prevalence is nearly double that established in one recent study by Ali, *et al.* [1]. This finding is in congruent with previously established results from various studies [1,22]. The establishment can be interpreted that most pre-adolescent do not consume breakfast on a regular basis and is in line with findings from other studies [12,24] and this habit is reported to be increasing with age among children and pre-adolescents [4,13,14,17]. This finding suggest that early introduction of appropriate healthy nutritional strategies would promote regular consumption of breakfast among the preadolescents. If proper intervention is instigated and promoted among the preadolescents it may translant that about 179 (44.0%) who are skipping breakfast may have improved weight management, cognitive functions, minimize risk of starvation, ehanced metabolic rate, and stabilized level of blood sugar among other benefits.

Furthermore, a number of studies have demonstrated that the prevalence of breakfast missing among the pre-adolescents is between 20% and 55% [16-18]. This wide variation of breakfast missing prevalence could be explained by variation in categorization of preadolescents as well as varied definition of breakfast missing. However, the current study established a prevalence of breakfast missing that falls between the ranges of 20% to 55%.

Consequently, the current study found out that 154 (38.0%) of school going pre-adolescents often missed breakfast. Studies have demonstrated high frequencies of missing breakfast among the pre-adolescents. Gajre., *et al.* [10] and Adole and Ware [9] established that pre-adolescents skipped breakfast 2 or 3 times in a week. Whereas, a study by Murata [24], concluded that a good proportion of the pre-adolescents missed their breakfast regularly. Furthermore, a study conducted in Hong Kong found that 124 (30.5%) of the pre-adolescents missed breakfast for at least once a week [25] is in line with the finding of the current study which showed that 221 (54.3%) of the pupils reported to have missed breakfast the previous week. Missing breakfast for preadolescents in frequency more than three per week has been reported to increase to 21%. Furthermore, Germany data demonstrates an elevated prevalence of missing breakfast among the preadolescents [25]. These findings agree with the establishment from the current study that a reasonable proportion of pre-adolescents are increasingly missing breakfast, so often, and many times in a week. Thus, the research question which sought to understand how breakfast missing pattern appeared was answered.

Conclusion

The paper set to assess the breakfast missing pattern among pre-adolescents. 179 (44.0%) of the pre-adolescents missed breakfast on the survey day. This finding demonstrates that a good proportion of the participants do miss breakfast and this can be attributed greatly to limited time for breakfast preparation or economic reasons.

Acknowledgement

First and foremost, I thank my Almighty God for strength, life and grace to this far I have reached.

I extend my sincere gratitude to Almighty God for His grace, my husband and children for understanding and providing moral support. I am grateful to my supervisors for their helpful supervision throughout my research.

I extend my appreciation to the school administration and study participants as a whole for allowing me recruit them into the research.

Bibliography

1. Ali RA., *et al.* "Maternal Sociodemographic Characteristics and Behaviors as Correlates of Preadolescent's Breakfast Habits". *Journal of Pediatric Nursing* 3 (2018a): 61-67.
2. Rampersaud GC., *et al.* "Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents". *Journal of American Diet Association* 105.5 (2005): 743-760.
3. Siega-Riz A., *et al.* "Trends in breakfast consumption for children in the United States from 1965 to 1991". *American Journal of Clinical Nutrition* (1998): 748S-756S.
4. Affenito SG., *et al.* "Ready-to-Eat Cereal Consumption and the School Breakfast Program: Relationship to Nutrient Intake and Weight". *Journal of School Health* 83.1 (2013): 28-35.
5. Zakrzewski JK., *et al.* "Associations between breakfast frequency and adiposity indicators in children from 12 countries". *International Journal of Obesity Supplements* 5.2 (2015): S80-S88.

6. Vereecken C., *et al.* "Breakfast consumption and its socio-demographic and lifestyle correlates in schoolchildren in 41 countries participating in the HBSC study". *International Journal of Public Health* 54.2 (2009): 180-190.
7. Anzman-Frasca S., *et al.* "Estimating impacts of a breakfast in the classroom program on school outcomes". *JAMA Pediatrics* 169.1 (2015): 71-77.
8. Frisvold DE. "Nutrition and cognitive achievement: An evaluation of the School breakfast program". *Journal of Public Economics* 124 (2014): 91-104.
9. Adole AA and Ware MB. "Assessment of Breakfast Eating Habits and its Association with Cognitive Performance of Early Adolescent (11-13 years), Sidana Zone, Southern Ethiopia". *Journal of Food and Nutrition Sciences* 2.4 (2014): 130-137.
10. Gajre S., *et al.* "Breakfast Eating Habit and its Influence on Attention-concentration, Immediate Memory and School Achievement". *Indian Pediatrics* 45 (2008): 824-828.
11. Tereza CS., *et al.* "Children' Perceptions of Parental Attitude affecting Breakfast Skipping in Primary Sixth-Grade Students". *Journal of School of Health* 78 (2008): 203-208.
12. Nicklas T., *et al.* "The importance of breakfast consumption to nutrition of children, adolescents, and young adults". *Nutrition Today* 1.39 (2004): 30-39.
13. Szajewska H and Rusczyński M. "Systematic Review Demonstrating that Breakfast Consumption Influences Body Weight Outcomes in Children and Adolescents in Europe". *Critical Reviews in Food Science and Nutrition* 50.2 (2010): 113-119.
14. Barr S., *et al.* "Breakfast consumption is positively associated with nutrient adequacy in Canadian children and adolescents". *Journal of Nutrition* 112.8 (2014): 1373-1383.
15. Keszyüs D., *et al.* "Economic evaluation of URMEI-ICE, a school-based overweight prevention programme comprising metabolism, exercise and lifestyle intervention in children". *European Journal of Health Economic* 14.2 (2013): 185-195.
16. Haddad LG., *et al.* "Wellness appraisal among adolescents in Jordan: A model from a developing country: A cross-sectional questionnaire survey". *Health Promotion International* 24.2 (2009): 130-139.
17. Kawafha MM. "Impact of Skipping Breakfast on Various Educational and Overall Academic Achievements of Primary School Children in Northern of Jordan". *Australian Journal of Basic and Applied Sciences* 7.7 (2013): 155-160.
18. Kawafheh MM., *et al.* "The effect of health education programs for parents about breakfast on students' breakfast and their academic achievement in the north of Jordan". *International Journal of Advanced Nursing Studies* 3.2 (2014): 84.
19. Lippevelde WV., *et al.* "Associations between Family-Related Factors, Breakfast Consumption and BMI among 10- to 12-Year-Old European Children: The Cross-Sectional ENERGY-Study". *PLOS one* 8.11 (2013).
20. Timlin MT., *et al.* "Breakfast Eating and Weight Change in a 5-Year Prospective Analysis of Adolescents: Project EAT (Eating Among Teens)". *PEDIATRICS* 121.3 (2008): e638-e645.
21. Joy MKH and Hasan MK. "A Survey on Breakfast Habit and Skipping Breakfast among University Going Students (2018).

22. Raithatha SJ, *et al.* "Self-Care Practices among Diabetic Patients in Anand District of Gujarat". *ISRN Family Medicine* (2014): 743791.
23. Jakubowicz D, *et al.* "High-energy breakfast based on whey protein reduces body weight, postprandial glycemia and HbA1C in Type 2 diabetes". *The Journal of Nutritional Biochemistry* 49 (2017): 1-7.
24. Murata M. "Secular trends in growth and changes in eating patterns of Japanese children". *American Journal of Clinical Nutrition* 72 (2010): 1379-1383.
25. Tereza CS, *et al.* "Children' Perceptions of Parental Attitude affecting Breakfast Skipping in Primary Sixth-Grade Students". *Journal of School of Health* 78 (2008): 203-208.

Volume 15 Issue 8 August 2020

©All rights reserved by Agrippine Ngendakuriyo., *et al.*