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Skipping Breakfast a Boon or Bane on Health - A Systematic Review Analysis

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Abstract: ***Introduction: Breakfast is considered the most important meal of the day, providing the essential nutrient for the day's activities for children and adolescents (kleinman et al 2002;kawafha et al 2013). Breakfast skipping among adolescents and children which lead to lifestyle disorders (Keski-rahkonen et al 2003; Rampersaud et al 2005) Aims and Objectives: To analyse and promote health awareness in the society about the danger of skipping breakfast among children and adolescents. Materials and Methodology: From this systematic review analytical study from more than 30 journals we have studied that how skipping breakfast is harmful to health and it creates dangerous consequences to both children and adolescents in their physical and psychological aspects. Conclusion: Thus, highlighting the impact of health education on diet and its influence on health of human health and how life gets more pronounced were major outcome of this study findings.***

Keywords: Unhealthy lifestyle, obesity, overweight, skipping breakfast, cancer, cardiovascular diseases

1. Introduction

Childhood and adolescent is a crucial period that requires adequate nutrition. Breakfast is known as the important meal of the day it provides people with fuel to begin their day. As a person sleeps the body changes from the fed to the fasted state which causes the serum glucagon concentrate to elevate. As a result liver produces glucose by converting glycogen to glucose. When food is consumed fuel Homeostasis is maintained (Hill 1995) . In a recent study among 612 , 4th grade students 27% have reported they skipped breakfast three or more times a week (Gross et al 2004) Breakfast is considered the most important meal of the day, providing the essential nutrient for the day's activities for children and adolescents (Nicklas et al 1993; kleinman et al 2002;kawafha et al 2013).Breakfast skipping among adolescents and children which lead to lifestyle disorders (Keski-rahkonen et al 2003;Rampersaud et al 2005). Shaw mary E 1998 reports approximately 12% of sample skipped breakfast which was conducted among 699 subjects , 13 year old Australian students , this also showed females skipped breakfast three times more than males . According to a study conducted by Belloc & Berslow 1972 in Alameda (California) nearly 15 % of the samples rarely / never ate breakfast and those who ate breakfast showed significantly better physical health than skippers and in a follow up of 9- 1 ½ years , same sample (Berkman & Berslow 1983) found that regular breakfast eaters add lower mortality rates although these findings were not satisfactorily significant . Hasannudin Nuru et al 2015 in a Japan based national dietary survey showed the incidence of missing breakfast averages 14 % in men and 9 % in women while in high school students be found 18 % also miss breakfast and 4 % in elementary school . Findings shows that prevalence of breakfast skipping is higher and it will affect the children health outcome such as increase in BMI and weight gain etc. Among 186 subjects in India (Indore , Madhya Pradesh) who were given questionnaire which included information regarding dietary factors and exercise found higher prevalence of overweight and obesity due to imbalance of diet (Raksha Goyal & Sandeep Julka 2014) . The choice of breakfast along with breakfast skipping has a survey among 4487 , children of 2- 16 years from (United states and Europe) showed that 59 % of students were breakfast skippers and those who consumed breakfast had higher intake of folate and total sugar ; low fat and sodium , prevalence of overweight was reduces among breakfast consumers. Breakfast skipping is highly prevalent in many countries including the United States and Europe (10-30%), more common occurrence in the children and adolescents (Rampersaud GC; Pereira MA,2005).

In India 33.8% adolescents of Aligarh (New Delhi) do not take their breakfast regularly, The rates of breakfast skipping range from 10% to 30% among children in India (Girard BL; Adams J; Metzl JD, 2005). In japan based on national dietary survey says that the skipping breakfast averages 14% men and 9% in women among adolescents, whereas 18% among children (HeatherJ ;Leidy P 2013) . Skipping breakfast among children in North America is16% (Gleason, 1995) and 18% for adolescents (Ringleton;Rhoads,1983) . In Korea 59.1% of children and 34.1% of adolescent skipping breakfast (Choi et al,2003)

2. Materials and Methodology

This review analysis has viewed journals from 1972 to 2017, authentic published sources including pub med, scholar, Medline and Scopus on both positive and negative effects of skipping breakfast in children and adolescent. With more

than 20 research article on ill effects of skipping breakfast and with 12 research articles claiming positive effects of having regular breakfast. Also the words used to search required materials were skipping breakfast , ill effects of not having breakfast , benefits of regular breakfast , junk foods and soft drinks on health , obesity and breakfast skipping , global prevalence of breakfast skipping . The researched findings of published research articles were presented in ascending order on the following items in a tabular format for a better viewing and enhanced grasp of the subject. The subtitles for discussion covered includes

1) Benefits of breakfast eating
2) Psychological and cognitive effects
3) Physiological effects
4) Reason for skipping breakfast
5) Other reason for skipping breakfast
6) Obesity
7) Social habits
8) Junk foods

3. Discussion

Table of results of systematic reviews on benefits of breakfast and effects on psycho- social aspects, physiological, cognition, food habits and reasons for breakfast

1	Benefit Of Breakfast Eating		Authors
	POSITIVE EFFECTS : • "Seven healthy habits" • Improve absorption of minerals and vitamins, decrease likelihood of obesity and gastrointestinal disturbance		• Bellock and Breslow,1972 • Nicklas et al 1993 • Ruxton and kirk,1997 • Zang et al 2011.
2	**Psychological and Cognitive Effects**		
	POSITIVE EFFECTS : • Concentration • Attendance • Hyperactivity • Short time memory and mood • Unhealthy lifestyle such as smoking, irregular exercise, alcohol and drug use. • Inattentive and disruptive • The study conducted by showed mixed evidence , studies generally demonstrate that eating breakfast has a positive effect on children's cognitive performance , particularly domains of memory and attention in a study conducted among 96 adolescents of 12- 15 years with a mood questionnaire and blood sample also showed there is an improvement in cognitive performance , memory and attention . • Seven studies employed with in subjects acute experimental design to examine the effect of breakfast on class room behavior across the morning . the findings were inconsistent with three of the seven studies showing an advantage of breakfast on task behavior		• Pelican; O'connell,1985 • Galal; Hulett, 2003 • Rampersaud et al 2005. • Hoyland et al 2009 • Smith et al 2010. • Wesnes etal 2003; 2012 • Widenhorn Muller etal 2008 , • Pivik et al 2012 • Coper et al 2011 • Chang et al 1996 • Benton & Jarvis 2007 • Beton et al 2007
3	**Physiological Effects**		
	NEGATIVE EFFECTS : • Weight gain • Disturbance of circadian rhythm lead to reduction in exercise capacity, glucose tolerance disorder and metabolic disorder • Hypertension • Insulin sensitivity • Diabetes mellitus and cardiovascular diseases • On a PET study indicates that cerebral metabolic rate of glucose utilization is approximately twice as high in children aged 4- 10 years compared with adults , this higher rate of glucose utilization gradually declines from age 10 and usually reaches adult levels by the age of 16 to 18 years , when there is a change in breakfast pattern which leads to reduced cognitive and behavioral outcomes.		• Sookian and Gemma,2008 • Jackson LW 2013; Jenkins DJ 1989. • Chugani 1998
4	**Reason For Skipping Breakfast**		
	• No time (43%) • Not being hungry (42%) • Diet to lose weight • No one to prepare food		• Singleton and Rhoads, 1982
5	**Other Reason For Skipping Breakfast**		
	• Below poverty line • Lack of money and food		• Bidgood and Cameron,1992
6	**Obesity**		
	Positive Effects	**Negative Effects**	
	• A study with 423 female students of 7 + years of age , there is a considerable evidence from systematic reviews for children & adolescents that eating breakfast is associated with a reduced risk of	• Skipping breakfast has a modifiable influence on developing abdominal obesity in primary school children	• Keztyus D et al 2016 • Szjewska H & Ruszczynski 2010 • Dela Hunty et al 2013

	becoming overweight or obese and reduction in BMI		
7.	**Social Habits**		
	NEGATIVE EFFECTS : • Systematic review conducted on 9 – 13 year students reports association of skipping breakfast in youth with lower socio economic status, lack of physical activity, frequent use of screen media, higher energy intake, unhealthy eating habits and other unhealthy life style factors such as smoking and alcohol use.		• Szjewska H 2010 & Rampersaud GC etal 2005
8	**Junk Food**		
	Positive Effects	**Negative Effects**	
	• A study conducted among children of age 9-13 years and adoloscents of age 14- 18 years 31 % were breakfast skippers . children who habitually consume breakfast are more likely to Have favorable nutrient intakes including higher intake of dietary fibers , total carbohydrate and lower total fat and cholesterol	• According to a study conducted on 12- 13 years on 84 school 3159 students by migration background , living with a single parent , female gender , having a percentage of body fat at or above 95 percentage , the consumption of soft drinks and high levels of screen media use are positively correlated with children skipping breakfast	• Dorthea Kesztyus et al 2017 • Deshmukh – Tasker tal 2010

4. Suggested Preventive Means of Skipping Breakfast

1) Different seminars and workshop arranged by the institutions regarding food and nutrition.
2) The department of food science can play vital role regarding nutrition by launching different training seasons and rising awareness campaign.
3) There should be a subject in syllabus that deals with food and nutrition in all undergraduate curriculum.

5. Conclusion

1) From this systematic review analytical study from more than 50 journals we have studied that how skipping breakfast is harmful to health and it creates dangerous consequences to both children and adolescents in their physical and psychological aspects.
2) Thus, highlighting the impact of health education on diet and its influence on health of human life gets more pronounced as major outcome of this study findings. Also the influence on health and disease with breakfast skipping, nature of diet consumed, future citizen are emerging with more vulnerability to various diseases, health disorder and huge economical influence. Hence need of this study with Government, NGOS, society should get more informed and practice healthy living style a major thrust of this research report.

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