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Original article

Eating Behaviours, Nutrition and Health in Adolescence: A Narrative Review

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Abstract. Among the developmental stages of human life, adolescence is a nutritionally important period where the growth spurt occurs. Proper nutrition paves the way to adequate growth and good health during this period. At the same time, this is a period where a person starts to become independent and food choices and dietary habits begin to change according to environmental influences. Eating behaviours of adolescents exert a major impact on the nutritional health of adolescents. The eating behaviours in adolescents may vary from individual to individual and may manifest in some as undereating, overeating or disordered patterns. Each of these abnormal patterns is harmful and ends up in negative outcomes; overeating leads to overweight, obesity and non-communicable diseases and undereating causing undernutrition and its related consequences. Similarly, disordered eating patterns can lead to nutritional deficiencies and may even progress to eating disorders as well. Therefore, understanding the eating behaviours of adolescents, their associated factors and their consequences is important to determine the interventions to improve the nutritional health of adolescents. In this review, the importance of eating behaviours in adolescence, common eating behaviours of adolescents, the consequences of unhealthy eating behaviours of adolescents and the strategies that can be taken to promote healthy eating behaviours have been discussed. The present review also highlights the knowledge gaps in existing literature concerning eating behaviours among adolescents. Future research is recommended to explore the modern eating behaviours of adolescents, their associations and effective interventions to promote healthy eating behaviours among them.

Keywords. Adolescence**,** Eating behaviour, Health and nutrition

INTRODUCTION

Adolescence is the period of development that begins at puberty and ends at adulthood (1). The World Health Organization (WHO) defines adolescence as the age between 10 and 19 years (2). This period can be further divided into early adolescence (10-14 years) and late adolescence (15-19 years) (2).

There are 1.3 billion adolescents in the world today, making up 16% of the world's population and about 360 million adolescents comprising about 20% of the population in the countries of the South-East Asia region (2,3).

The importance of adolescence is marked by rapid growth, accompanied by physiological, sexual, neurological and behavioural changes in this period (2). It is the stage in the life cycle, which lays the foundation for adopting adult roles and responsibilities, including the transition to employment and financial independence as well as the formation of life partnership (1).

Adolescence is a period of public health significance and an important time for promoting health and preventing disease (2). Most adolescent health issues are preventable or treatable, but adolescents face multiple barriers when trying to access health care and related information (3). The Sustainable Development Goals (SDG) and global political momentum behind Universal Health Coverage (UHC) have offered significant opportunities to build collective global and national action towards achieving universal health coverage for adolescents (3).

Adolescent health is affected by multiple factors where nutrition also plays a vital role (1). Eating behaviours are one of the most important factors that determine the nutritional status of an adolescent (1). This review article aims to review the current evidence on eating behaviours among adolescents with regards to common eating behaviours seen among adolescents, their

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importance, associated factors and consequences of unhealthy eating behaveours and strategies to improve healthy eating behaviours among adolescents.

MATERIALS AND METHODS

This is a narrative review article. The original research articles published in English from 1990 to 2024 were reviewed. The articles were searched using search engines including PubMed and Google Scholar. The references of the articles were also reviewed to identify more relevant papers. Searches were conducted with the search terms ‘’adolescents’’, ‘’adolescent nutrition’’, “consequences’’, ‘’dietary patterns’’, ‘’disordered eating behaviours’’, ‘’eating behaviours’’, ‘’eating disorders’’, ‘’factors’’, ‘’fast food’’, ‘food additives’’, ‘’non-communicable diseases’’, ‘’nutrition’’ and ‘’nutritional problems’’. Relevant articles including epidemiological studies that include cohort, case-control and cross-sectional studies, clinical studies, systematic reviews and narrative reviews were assessed for initial eligibility. Studies in the English language with appropriate design and good quality including accurate definitions, study populations, and clearly defined statistical methods were included in this review article.

Ethical consideration. Ethical issues that have been considered for this review are the prevention of selective reporting bias of the papers and honesty in reporting the results of the studies. Moreover, related references have been carefully cited throughout the manuscript.

Adolescence and nutrition. Nutrition plays a decisive role in the health of an adolescent. Adequate nutrition is crucial at this age for achieving full growth potential. Failure to achieve optimal nutrition may lead to delayed and stunted linear growth and impaired organ remodelling (1).

Nutritional problems are common among adolescents and the body size during adolescence can be used as a proxy for nutritional status (4). Over-nutrition can manifest as overweight and obesity, while under-nutrition can manifest as stunting and/or wasting or as nutrient deficiencies without change in body size; known as hidden hunger (2). Eating behaviours developed during this period can have a lifelong impact on their health and well-being (5).

During adolescence, maturation of the body occurs as a result of hormonal changes and it leads to dramatic changes in body composition (6). The high rate of growth during puberty is second to that in infancy but is greater in duration. Therefore, total nutritional requirements during puberty may be greater than during any other period in life (7).

Adolescents typically engage more in physical work or in recreational exercise (boys on average more than girls) (1). Therefore, energy and other nutrition requirement must match the needs of the adolescents. However, according to nutritional surveys, many adolescents have inadequate intakes of vitamins and minerals and it is more pronounced in females than in males (1). Recently there has been an increase in the trend toward excess consumption of total fat and saturated fat, cholesterol, sodium and sugar (8).

Eating behaviours and nutritional problems in adolescents. The prevalence of obesity among adolescents worldwide appears to be increasing (1,2,9). It can be explained by widespread nutrition transitions to lipid-rich diets and a decrease in physical activity. It is common among urban adolescents (9). Other unhealthy behaviours, such as smoking, drinking, and illicit drug use, are often seen during adolescence and are closely related to physiological and nutritional aspects (1). Moreover, as appetite increases during adolescence, sedentary individuals are more likely to accumulate fat if they have access to high-energy food. Thus, low activity levels among adolescents are a key factor that underlies the increase in adolescent obesity across the globe (1).

Eating patterns and behaviours are influenced by many factors during adolescence, including peer influences, parental modeling, food availability, food preferences, costs, convenience, personal and cultural beliefs, mass media, and body image (10,11). Snacking and grazing, missing meals, eating away from home, consuming fast food, and dieting (especially females) are common among adolescents (10). These eating behaviours can lead to nutritional deficiencies among adolescents and also result in long-term consequences

Ruhuna. J. Med., 12(01), 2024, pp. 42–52
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such as delayed sexual maturation and difficulty in reaching adult height (12).

Disordered eating behaviours and eating disorders are also common among adolescents. Disordered eating behaviours refer to 'disturbed eating patterns that affect the nutritional status' (13). Recent studies show that the prevalence of disordered eating behaviours is also increasing in Western countries (14), while data related to the Asian context is sparse. According to the literature, adolescent girls are more prone to adopt disordered eating behaviours than boys because they are more sensitive to their changing body size shape and physical appearance (15). Disordered eating behaviours are found to be associated with other harmful practices including smoking, alcohol consumption, drug use and suicide (15).

Associations between disordered eating behaviours and physical and psychological consequences are also found in the literature (16,17). According to previous studies, poor diet quality, weight loss and the onset of obesity are the physical consequences associated with disordered eating behaviours (16,17) and depressive symptoms and the onset of eating disorders are the psychological consequences (18). Of these, obesity and eating disorders are considered serious public health problems due to their high prevalence and adverse effects on physical and psychological health (19,20,21,22). These behaviours could affect their psychological development and nutritional status and also, they could ultimately lead to the development of eating disorders in them (16,17).

Anorexia nervosa (AN) and bulimia nervosa (BN) are two specified eating disorders among adolescents, though the numbers affected are relatively small (1). However, previous studies suggest that personal factors identified during adolescence are predictive of both persistent dieting and disordered eating from adolescence into young adulthood (23).

Common eating behaviours among adolescents. Though studies on the eating behaviours of adults are common in literature, adolescent eating behaviours are comparatively less studied area in the literature. Several studies are found to have assessed the disordered eating behaviours of adolescents. However, studies conducted to assess the healthy eating behaviours of adolescents are scanty. According to a study conducted in Northern Minas Gerais, Brazil, three dietary patterns were identified among adolescents attending public municipal schools. The identified patterns are junk food consumption (23.26%), healthy food consumption (6.9%) and traditional food consumption (5.24%) (25) using food frequency questionnaires.

Dieting, purging, overeating, binge eating, snacking with fast food and skipping meals are the identified common unhealthy eating behaviours of adolescents (1,2). Dieting is the deliberate restriction of the types or amounts of food one eats, usually to lose weight or to improve one's health (26). Purging involves the forceful evacuation of food/calories from the body (26). Overeating involves consuming an objectively large amount of food (27). Binge eating is characterized by overeating accompanied by a sense of loss of control while eating (27). All these behaviours lead to the consequences that negatively impact the nutritional and general health of the adolescents.

In a study where trajectories of eating behaviours over seven years were assessed, three different groups have been identified among girls and five different groups have been identified among boys. Identified groups in girls were "stable food intake with a decline in daily breakfast consumption" (39.9%), "moderate food intake and worsening in overall eating behaviours" (38.0%), and "stable high food intake" (22.1%). Identified groups in boys were "low food intake with stable daily breakfast consumption" (27.3%), "breakfast-skippers and increasing fast food intake" (27.1%), "low food intake with a decline in daily breakfast consumption" (23.9%), "high food intake with worsening of eating behaviours" (13.3%) and "average food intake with consistently high breakfast consumption" (8.4%) (28).

Factors associated with eating behaviours among adolescents. Factors associated with eating behaviours among adolescents have been classified as personal factors (attitudes, beliefs, food preferences, self-efficacy, and biological changes) environmental factors (family, friends, peer networks, school, fast food outlets, and social and cultural norms) and macrosystem factors (food availability, food production, distribution systems, mass

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media, and advertising) (11). However, only several factors have been studied in depth concerning their association with eating behaviours among adolescents.

Among the studies available in this area, life stress and depressive symptoms are the most commonly studied personal factors associated with eating behaviours among adolescents. Those studies have found that life stress and depressive symptoms are positively associated with unhealthy eating behaviours of adolescents (30,31,32).

Several studies have assessed the associations between family factors and the eating behaviours of adolescents (33,34,-35,36). According to the existing evidence, adolescents who engage more frequently in family meals are less likely to adopt disordered eating behaviours (33) and family cohesion is proven to be significantly associated with healthy eating behaviours such as higher rates of breakfast consumption and less soda intake (34).

Furthermore, peer pressure has been identified as a strong predictive factor of unhealthy adolescent eating behaviours in a few studies (37,38).

Macrosystem factors are the factors within the larger society which can affect adolescent eating behaviour including the media, cultural norms, social norms, food production and distribution systems, and food accessibility and availability (33). Several studies showed that media exposure exerts a significant impact on the eating behaviours of adolescents. These studies reveal that media exposure that leads to thin-ideal internalization (i.e. the degree to which one accepts, overvalues or “buys into” the thin ideal) which results in body dissatisfaction contributes to both restrained eating and unhealthy weight control behaviours (39,40).

Consequences of unhealthy eating behaviours of adolescents. Adolescence is a nutritionally vulnerable phase of life and unhealthy eating behaviours established during adolescence can lead to nutritional problems during adolescence and as well as in later life. Nutritional inadequacies, overweight and obesity and eating disorders are identified as the major consequences of unhealthy eating behaviours in adolescents.

Nutritional inadequacies. According to the currently available literature, nutritional inadequacies can be encountered by adolescents who practice weight-loss behaviours such as dieting as well as skipping meals due to various reasons (41). Studies have found that chronic weight-losing behaviours can result in underweight and micro-nutrient deficiencies in adolescents. Dieting, purging, skipping meals and other weight-loss practices can result in any type of nutritional deficiencies including macro and micronutrients (42). According to national and population-based surveys in the United States, adolescents often fail to meet dietary recommendations for overall nutritional status and specific nutrient intakes (43,44,45). It further reveals that many adolescents receive a higher proportion of energy from fat and added sugar but have a lower intake of Vitamin A, Vitamin D, folic acid, iron, calcium, zinc and fibre (46,47,48). Iron deficiency during adolescence can result in impaired cognitive function and physical performance whereas inadequate calcium intake during adolescence results in an increased risk of fractures and developing osteoporosis in later life. Vitamin D deficiency may result in bone deformities and an increased risk of fractures during adolescence (49,50). Iodine deficiency in adolescence can cause impaired thyroid hormone production leading to goiter and slow mentation (51). Vitamin A deficiency in adolescents results in night blindness and permanent blindness, if not corrected and impaired defence against infective agents (51,52). Inadequate Vitamin A levels in the body can impair iron absorption and metabolism too (51). Both folic acid and Vitamin B12 deficiencies can alter nucleic acid metabolism in the body and Vitamin B12 deficiency leads to neurologic damage due to demyelination of the neurons (52). Inadequate Vitamin B2 levels lead to impaired synthesis of heme and impaired energy and vitamin metabolism in adolescents (51). Studies have shown that Zn deficiency in adolescents is associated with impaired growth, impaired immunity and altered sex hormone metabolism that could lead to delayed sexual maturation in adolescents (51,52).

Development of eating disorders. According to a review done on dieting among adolescents, moderate changes in diet and exercise are safe, but extreme or unhealthy dieting practices can result in significant psychological and physiological consequences (53). It is found that moderate

Ruhuna. J. Med., 12(01), 2024, pp. 42–52
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dieting is associated with negative self-esteem in some adolescents. Further, it reveals that the very act of starting dieting increases the risk of developing eating disorders in adolescents. According to that, extreme weight-losing behaviours can result in electrolyte imbalances, cardiac arrhythmias and even sudden cardiac death (53).

Overeating ranges in severity from casual overindulgence to an overwhelming drive to consume certain foods (54). At its most extreme, overeating can manifest as clinical diagnoses such as binge eating disorder and bulimia nervosa (54). Binge eating is considered a more severe form of overeating and it might be expected to remain stable or progress into a full syndrome of eating disorders. Overeating might be expected to remit over time (37,55). Subclinical forms of overeating such as emotional eating or uncontrolled eating can also have a profoundly negative impact on health and wellbeing (54).

Eating disorders are defined as the disruption in eating behaviour with excessive concern about body weight that impairs physical health or psychosocial functioning (27). They are complex illnesses related to abnormal eating behaviours that can present as severe psychiatric illnesses associated with high rates of morbidity and mortality (56). Most eating disorders involve an obsessive focus on body image and body weight that could lead to unhealthy eating behaviours which could negatively impact adolescent nutrition, growth and development (57). Other types of eating disorders do not necessarily center around body image concerns, but involve eating behaviours that impede weight gain, or involve a compulsive drive to pursue health and fitness (57). The most common types of eating disorders among adolescents are anorexia nervosa and bulimia nervosa (58). Both of them can lead to medical complications associated with malnutrition and purging (59). Significant restriction of dietary intake relative to daily requirements and the presence of body image disturbance with undue influence of body weight/shape on self-evaluation are the characteristic features of anorexia nervosa (27). Bulimia patients also manifest obsessive concerns over body shape and weight and the presence of binge eating and recurrent compensatory behavior to prevent weight gain such as purging and the use of laxatives or diuretics are the characteristic features of bulimia nervosa (27).

Eating disorders commonly develop in adolescence having an average age of 14 years for AN and BN (27). Studies conducted worldwide have estimated the lifetime prevalence of AN to be between 0.5% to 2.0% and that of BN to be between 0.9% to 3.0% (27). Eating disorders have the highest mortality rate of any psychiatric illness (27). Unhealthy eating behaviours have been identified as a risk factor for the development of eating disorders in adolescents. According to the studies, many people with eating disorders have reported that they have had deliberate efforts to diet or restrict the amount or type of food before the onset of the disease (58). This fact has been emphasized in another review article written on risk factors across eating disorders. According to that review also, patients with both AN and BN have reported dieting attempts preceded binge eating at the onset of their disorder (61,62).

Overweight and obesity. Unhealthy eating behaviours such as skipping main meals and snacking with fast foods can lead to overweight, obesity and related complications (63). Fast foods are defined as easily prepared processed food served in snack bars and restaurants as a quick meal or to be taken away (63). Industrial foods such as canned foods or snacks are also considered as fast foods (63). These foods lead adolescents to overweight, obesity, diabetes, atherosclerosis, myocardial infarctions, strokes, dementia and cancer (64). Ongoing studies have shown positive results towards the existence of a link between fast food, processed food, commercial baked food and sweets and the destruction of brain cells and lowering intelligence (65). There is evidence that candy and sweetened baked foods stimulate the brain in an additive fashion which can lead to more serious illnesses (65).

Studies have found that fast food consumption and out-of-home eating behaviour of adolescents are the main risk factors for lower diet quality, higher calorie intake and fat intake and lower micronutrient density of diet (66). Adolescents with this behaviour are more prone to abdominal fat gain, impaired insulin and glucose homeostasis, lipid and lipoprotein disorders, induction of systematic inflammation and

Ruhuna. J. Med., 12(01), 2024, pp. 42–52
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oxidative stress (66). Fast food and out-of-home meals are rich in refined carbohydrates and processed meat, sodium, total fat, saturated and trans fatty acids, and cholesterol and poor in essential nutrients and dietary fibres (66). Fast food consumption exerts undesirable effects on overall diet quality in adolescents (66).

Exposure to food additives. In addition to that, these foods contain different types of additives including preservatives, colouring agents, flavouring agents and texturizing agents that could affect the health of individuals (67). There have been studies on the effects of food additives on health. In 2015, the International Agency for Research on Cancer specifically classified processed meat that contains additives as carcinogenic to humans (68). Processing can result in N-Nitroso compounds that are linked with the development of colorectal cancers (68). Also, these foods can contain nitrates like perchlorate that could disrupt thyroid function by blocking the Sodium Iodide Symporter and thereby interfering with essential iodide uptake which could result in thyroid deficiencies in adolescents with a resultant reduction in growth (68).

Risk for non-communicable diseases. According to the WHO reports, nearly two-thirds of deaths worldwide are due to non-communicable diseases (69). The mortality rate due to non-communicable diseases (NCD) is expected to continue to increase worldwide with the largest increases occurring in low and middle-income countries (69). According to the reports, nearly 80% of deaths due to NCDs occur in low and middle-income countries (70). Studies have identified unhealthy community dietary behaviour as a main risk factor for NCDs (69). Unhealthy diets with foods high in saturated and trans fats, salt and sugar; especially in sweetened drinks, physical inactivity, tobacco use and harmful consumption of alcohol cause more than two-thirds of all new cases of NCDs and increase high risk of complications in people with NCDs (70).

Adolescence is the period where children tend to start changing their eating behaviours due to various factors and influences and these adopted unhealthy eating behaviours increase the risk of getting NCDs during adolescence itself and later life as well. A study conducted among adolescents in 140 countries has identified that insufficient vegetable consumption, insufficient fruit consumption and physical inactivity are among the most prevalent risk factors for NCDs among adolescents in all regions (71). Furthermore, there are several studies available in the literature that have shown the positive associations between unhealthy eating behaviours and NCDs such as stroke, hypertension, diabetes mellitus, heart diseases, cancer and chronic kidney disease. Also, the prevalence of metabolic risk factors of NCDs such as abdominal obesity, dyslipidemias, pre-hypertension, hypertension and pre-diabetes is high among the populations with unhealthy dietary patterns (72).

Effects on cognitive functioning. In addition to the aforementioned consequences, adolescents can be affected in some other ways too due to their eating behaviours and dietary patterns. According to a systematic review on the effect of healthy dietary consumption on executive and cognitive functioning in children and adolescents, studies have shown positive associations between healthier overall diet quality and executive functioning (73). According to that, healthier food such as whole grains, fish, fruits and vegetables are positively associated with executive functioning in adolescents and less healthy snack foods, sugar-sweetened beverages and red/processed meats are inversely associated with executive function in them (73).

Cognitive functioning plays a pivotal role in academic achievement and health-related decision-making in both children and adolescents (73). Executive functioning (EF) is an important domain of cognitive processing that consists of the mental capacity to make goal-directed behaviours such as inhibitory control, working memory, attention and planning (73). EF skills develop throughout childhood and adolescence and diet plays an important role in cognitive and executive functioning (73). Studies have shown that children who consume breakfast demonstrate improved cognitive performance compared to children who skip breakfast (74).

Furthermore, studies provide evidence that maternal obesity and associated metabolic complications increase the risk of attention deficit hyperactivity disorder, autism spectrum disorders, anxiety, depression, schizophrenia, eating disorders and cognitive

Ruhuna. J. Med., 12(01), 2024, pp. 42–52
ISSN (p) ISSN 3084-942X ; ISSN (e) ISSN 3084-9063

impairment in offspring (75). The pathophysiology behind this process has been studied using animal studies and they have shown that these offspring are exposed to elevated nutrients and inflammatory factors that could permanently change the neuroendocrine regulation and brain development in offspring (75). Additionally, inflammation of the offspring's brain during gestation impairs the development of neural pathways and dysregulation of neural circuits increases the risk of mental health disorders in offspring (75). Adolescent girls who adopt unhealthy eating behaviours during adolescence can end up with maternal obesity during their pregnancy and their offspring can face these consequences. Moreover, studies have shown that childhood-onset neuropsychiatric disorders are common in patients with severe eating disorders and this fact is supportive of the link between eating behaviours and neuropsychiatric disorders (76).

Promoting healthy eating behaviours among adolescents. Nutrition interventions have contributed to improve the nutritional health of adolescents worldwide. A systematic review done in 2016 ascertained the effectiveness of nutritional interventions to improve adolescent health and revealed that interventions to promote nutrition and prevent obesity had an impact on reducing the BMI of adolescents (77). According to the literature, healthy dietary habits and physical activities should be promoted and this can be easily achieved when done as school-based programs. Interventions on nutrition, health-related behaviours, physical activity, knowledge and attitudes toward healthy eating behaviours have the potential to reduce risk factors associated with nutritional problems among adolescents (77).

Many studies on adolescent nutrition have concluded suggesting interventions to improve body image satisfaction among adolescents to promote healthy eating behaviours among adolescents as body image dissatisfaction has been recognized as the initiative of unhealthy eating behaviours among them.

A cross-sectional survey to investigate the body image perceptions among adolescents in Dubai, United Arab Emirates suggested that the current health education curriculum should include information related to healthy body weight and appropriate diet and lifestyle to minimize the risk of developing distorted body image concerns in adolescence and beyond (4).

A comparative study on body shape satisfaction and body weight control between Korean and Chinese female high school students suggested the necessity of implementting a nutrition educational program for the establishment of normal weight, proper body image perception and healthy dietary habits (78). A similar study to compare the food habits and body shape preferences of female university students in South Korea and Japan also suggested the necessity of nutrition and health promotion programs for university students, especially programs emphasizing weight management (79).

In a study which investigated body image concerns among Malaysian male and female adolescents aged 11-15 years using students from secondary schools in Kedah and Pulau Pinary, it was recommended to incorporate educational efforts on body image into school health activities for adolescents, as having a distorted body image may lead to negative effects such as unhealthy eating habits and disordered eating behaviours (80).

A behavioural impairment model on body image and adolescence implied that the severity of body image dissatisfaction should be considered in planning interventions to improve the eating behaviours of adolescents (81). A study which evaluated the impact of habitual social media engagement or exposure to image-related content on body image and food choices in healthy young adults suggested that health professionals designing social media campaigns for young adults should consider image-related content, not to heighten body dissatisfaction (82).

According to recent research, cluster randomized trials have shown good results in achieving desired outcomes in complex nutritional interventions (83). Interventional studies conducted to change dietary behaviours have shown the importance of incorporating self-regulation activities such as goal setting, self-monitoring, self and external review in addition to the educational component as they result in better outcomes compared to interventions with the education component alone (84,85,).

Interventions using mobile applications are becoming popular recently and studies have shown that the health outcomes have been better for the mobile application user group in

Ruhuna. J. Med., 12(01), 2024, pp. 42–52
ISSN (p) ISSN 3084-942X ; ISSN (e) ISSN 3084-9063

community trials (86). According to a review done by DiFilippo Kn and colleagues, adherence to monitoring of diets improved with mobile applications and effort to continue the diets was reduced among participants without the applications (87). A mobile application designed to reduce body dissatisfaction has been tested among university undergraduates and a significant decrease has been observed in body dissatisfaction and the drive for thinness with a significant increase in self-esteem (88).

An interventional study targeting dietary and physical activity behaviours has shown that behavioural interventions directed at improving physical activity and diet habits can be safely undertaken by adolescents with no adverse psychological consequences (89). Studies conducted among adolescents have shown that the trans-theoretical model of behaviour change can be incorporated into planning interventions to improve eating behaviours among adolescents. According to the model, behavioural change occurs via five stages; pre-contemplation, contemplation, preparation for action, action and maintenance (90). The course of intervention can be matched with the different stages of change and matching will yield better outcomes. Further, it is proven that targeting pre-action stages is more successful in achieving a behavioural change than targe-ting the action and maintenance stages (90).

CONCLUSIONS AND RECOMMENDATIONS

The eating behaviours of adolescents play a pivotal role in determining their nutritional status and well-being. Healthy eating behaviours pave the way to optimum nutritionnal and general health whereas unhealthy eating behaviours lead to the deterioration of good health. Dieting, purging, binge eating, snacking with fast food and skipping meals are common unhealthy eating behaviours among adolescents. Eating behaviours of adolescents are affected by many factors including personal, environmenttal and macro-system factors. Unhealthy eating behaviours result in nutritional derangements in adolescents including undernutrition, overnutrition and micronutrient deficiencies and the developpment of eating disorders. Healthy eating behaviours need to be promoted among adolescents using effective interventions that target body image, diet and physical activity levels of them.

Eating behaviours of adolescents are comparatively less explored area and are liable to change with time and trends. The peer influence and the impact of social media keep on changing, significantly challenging the eating behaviours of adolescents. Further studies are essential to explore the modern eating behaviours of adolescents including disordered behaviours that could lead to eating disorders and other negative consequences. Associated factors of the eating behaviours of adolescents should be explored in future studies. Effective interventions should be designed using modern technology to improve body image, self-esteem, diet and physical activity to improve the nutritional health of adolescents.

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