



## PERCEPTIONS ABOUT FOOD LITERACY, HEALTH RISKS AND ACADEMIC WELLBEING OF FARMER'S CHILDRENS STUDYING AT UNIVERSITY LEVEL

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### ABSTRACT

A study was conducted at University of Education, Faisalabad Campus, Pakistan during the year 2019. The term food literacy is a new addition in nutrition and health fields. Majority of students are interested in readymade foods decorated on institutions cafeterias. Parents are unwilling in changing food habits for their children due to ignorance and it is easy for them to provide readymade food. The current research is conducted under grounded theory approach. The objective was to investigate the difference in perceptions about food literacy, health risks and academic wellbeing of farmers' children. A sample of 200 children of farmers was selected on the basis of demographic characteristics. Data were collected with the help of self-developed instrument. The results showed that male students were more knowledgeable about food literacy and academic wellbeing than that of females. The students of rural areas were more conscious about food literacy, junk food, and health risks than that of urban areas students. The science students were more aware about junk food and academic wellbeing than that of arts students. There is a significant and strong positive correlation among the indicators of food literacy, junk food, health risks and academic wellbeing. It is recommended that university students should be familiar with dietary habits and health risks through conducting seminars and awareness programs.

KEYWORDS: Food literacy; health risk; academic wellbeing; junk foods; rural students; Pakistan.

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### INTRODUCTION

More than seventy percent of Pakistani population lives in villages. Majority of them are farmers or they work in fields making their livelihood. The traditions of living and eating in villages are not yet bombarded with junk food bombs and they still maintaining their health food habits. They also guide their kids to eat healthy and homemade food. So kids of villagers and farmers' are still away from different diseases when compared with urban life other than epidemic diseases (David, 2015). The role of family is vital but most of the families are uneducated and poor to face multiple issues like large family size, and lack of educational facilities and unemployment. The term food literacy is new in nutrition and health fields. Food literacy deals with the multifaceted relationships among consumers' attitudes, knowledge, and behaviors with relevant to food and not for individual nutrients (Arya & Mishra, 2013). Individual knowledge about food literacy and their food related choices ultimately affect their health, diet and environment (Howard & Brichta, 2013). The ignorance in food choice may lead to health risks, weight loss, wait gain, frustrated, absent mindedness, eye sight, dullness, tiresome, and headache. Food

is vital source of physical and mental development of students. Good food contains nutritious elements which leads to good health. It comprised of natural ingredients that body needs balanced growth and stable health (Das, 2015). In the current socioeconomic environments and cultural standards are changing day by day so, the food habits have been also changed. Many parents feel it comfortable to eat and buy such products for their children.

The main reason is that the parents are even unaware of the food choice for their kids. Their knowledge about food choice is only gained by the T.V. and media commercials. They did not even bother about the mental health of their kids. Different problems of eye site weakness, obesity, diarrhea and headache and dullness are common disease by their kids. The foods that are served easily and ready to eat fast refer as fast food. Most of the parents are quite ignorant of the side effects of that food. Both the terms of junk food and fast food are synonymous in literature. Eating and serving fast food culture is evolving and fashionable style among young learners and even in children. The energy drinks with salt, sugar, and fats that have low nutritional values being low quantity of protein, fibrous

material, vitamins and mineral contents is called junk food (Kaushik, Narang, & Parakh, 2011).

### Food Trends in Educational Setting

The trend of fast food and presentation in institutions differ from country to country. Junk foods are extensively available items in school and university canteens. Cafeterias at the schools are hesitant with balanced nutritious dietary values and they are also quite ignorant of the side effects rather they are interested in earning the commission by selling maximum items. They are interested to offer chips, cold drinks, and many more food items of low nutritional values. It is ignorance of the parents, administration and canteen owners to compare junk food in cafeterias with homemade nutritious lunch boxes (Das, 2015). This unexpected imbalance growth is linked with cognitive, emotional and hormonal modifications for adolescents a weak stage of life (Arya & Mishra, 2013). In adolescence, the body demands more and balance calories and nutrients as dramatic increase in development and physical growth for a specific time period. During adolescence the body needs changing lifestyle and food habits. Any ignorance of dietary plan may lead to people desperate for life. This adolescence period ranges from 11-21 years of age and the students have more opportunities for food choices and important occupational and personal decisions. Imbalance, unhygienic and poor nutrition may lead to have lasting penalties on their cognitive and physical development that results in slow learning ability, poor attention, and weak academic performance (Arya & Mishra, 2013). The children dislike homemade healthy food and readymade eatables. Pizza, burger and chips increase cholesterol level in the body. This increased fat is harmful for proper heart functions. The beverages and energy drinks include harmful toxins for body and affect bones, kidney and skin functions.

The word 'food literacy' was addressed to synthesize the interactive and different dimensions of skills, knowledge, and empowerment by experienced people involved in baking and preparing food in today's environment and economies. Poor diet is the reason for chronic diseases like obesity, certain types of cancer and cardiovascular diseases. Food literacy helps to get know how about healthy eating practices and build resilience to consumers with different types of energy-dense nutrients and poor food supply at cheap rates (Fernandez, 2019).

Every child needs good nutritious and balanced diet for proper development and growth with appealing taste (Harrins & Robbins, n. d.). Majority of children prefer to eat junk foods and become accustomed to that food. Junk food has low nutritional value, more calories with better taste (Harrins &

Robbins, n. d.). Junk food is preferred because it comprises quick, convenient, tasty, and fashionable presentations and styles. The students prefer eating junk food in front of TV and become obese. Junk food is decorated with edible colors that are toxic and harmful to human body. These foods disturb the digestive system and food colors cause hypertension and concentration in lapses and learning disabilities among children. Poor nutritional habits damage the will power that children need to make interact with friends, families, and participation in games and sports (Arya & Mishra, 2013).

### Factors of Food Illiteracy

Many factors contribute limited awareness about choice of quality food. Working mothers, nuclear families, financial constraints, adjacent fast food chain markets, free home delivery services and short time for fast food preparation. These foods lead to hypertension, obesity, dyslipidemia, diabetes, and heart disease. Das, 2015; Ary and Mishra, 2013). It is urgent need to improve and expand food literacy literature that promote healthy eating among community (Chung, 2017; (Glanz *et al.*, 1998; Warde, 1999). Food literacy is making people reskill full with knowledge of food, attitude, values, and skills (Desjardins & Hailburton, 2013). More studies need to develop food-related skills and knowledge on food literacy so that adolescents prefer healthy food. In Australia, it revealed that food related knowledge and skills enable parents to follow recipes and cook more at home. By increasing food literacy, the university students may able to improve their dietary plan and eat essential nutrients (Ustjanauskas, Harris, & Schwartz, 2013; Moore & Rideout, 2007).

### Health Risks

The role of chronic disease, healthy food choice, knowledge about nutrition, and skills of food preparation have changed. The topic of food choice and obesity is of great concern (Carbone & Zoellner, 2012). It based on the efforts to control increasing calories young people consume (Australian Bureau of Statistics, 2009). The dietary habits of young generation changed to seek convenient food that is processed and pre-packaged snack items (Lichtenstein & Ludwig, 2010). The poor knowledge about food and nutrition skills among community (Jaffe & Gertler, 2006) contributed a serious health risks (Caraher & Lang, 1999). According to Pendergast *et al.* (2011), poor food choice and low diet qualities related to ignorance of food preparation knowledge and cooking methods that are safe to escape food poisoning.

Our food traditions have changed drastically in recent decades. The shift has been changed from whole food

ingredients to processed food, energy food items, sweet beverages, readymade and preserved eatables (Montiero, 2013). Obesity rates have been risen with increased consumption of readymade food items, low nutrients, and energy-dense food, with low standard beverages and only sale through heavily marketed, readily available and handsome commission to storekeepers (Moore & Rideout, 2007; Ustjanauskas *et al.*, 2014). This tradition has closed our kitchens to a great extent and make the parents free from buying everyday kitchen accessories (Warde, 1999). The diet-related facets dominated our lifestyle and increased health risks for cancer and obesity avoidance worldwide (World Cancer Research, 2018). Among four major risk factors for non-communicable chronic diseases, poor diet is supposed to big contributor than physical activities, smoking and alcohol use (Hyseni *et al.*, 2017). It losses lives and poor quality of life, financial burden on society with excessive health costs (Muka *et al.*, 2015). In Canada, inadequate fruit and vegetable intake is attributed to economic losses of 3.3 billion dollars annually by health care expenditures (Ekwaru, *et al.*, 2016). The 'nutrition transition' has changed social norms as many women are working, have time shortage, and low expertise in cooking (Slater, 2013; Smith & de Zwart, 2010; Zayak Reynolds, 2004).

These factors are especially concerned with gender, where education is not mandatory for females in comparison with males. This gender disparity is often seen during process of education (Rafiq & Mohy-ud-Din, 2018). The refined vegetable oils, grains, and sugar coated items are not only easily available and cheap, but have good taste and appealing consumers' attention through media marketing (Drewnowski, 2018). In typical and speedy developments, women become 'de-skilled' about food literacy, plan, and preparation (Lang & Caraher, 2001; Scrinis, 2007).

The obesity epidemic is linked with international food supply rooted in inexpensive refined grains, added sugars and vegetable oils to provide energy-dense nutrient-poor food in abundant quantity (Drewnowski, 2018). It is necessary to know about young generation food necessities and coping with consistent challenges. University going or young adults' diet habits are worst among all ages. They consume more soft drinks and fast food and low preference for vegetable and fruit eating (Nelson, *et al.*, 2008; Pelletier & Laksa, 2012). Many food traditions of young generation are linked with poor quality diet, skipping meal and snack eating (Al-Rethaiaa *et al.*, 2010; Kremmyda *et al.*, 2008; Satalic *et al.*, 2007). Readymade meals have become the habit of young generation with free membership and regular discount offers by suppliers (Burns *et al.*, 2002; French *et al.*, 2001). The reasons behind health

risks were lack of food literacy, time-constraints, and complex food chains (Colatruglio & Slater, 2016).

The time constraints decreased the willingness to prepare homemade meals and efforts for searching fresh ingredients, and to trace out the sources easy to approach. The Canadian research also shows a trend for such easy products to make (Zafiriou, 2005). A study conducted by Moubarac and colleagues (2013) revealed a majority Canadian community like to eat ultra-processed food items. They are made from industrial ingredients and contain no complete food like cake mixes, soft drinks, pastries, and energy drinks etc. (Monteiro *et al.*, 2010). The ultra-processed items are prepared and marketed by many food industries (Moore & Rideout, 2007; Moubarac *et al.*, 2013). They are easily approached at retail shops and restaurants (Glanz *et al.*, 1998).

### Academic Wellbeing

The academic wellbeing is concerned with high academic performance, class participation, ready wit, active participation in co-curricular activities by the students. The university going students are in the age of adolescence when the physical growth rates are being increased. Many researches showed that better diet quality is linked with expert cooking and multiple hygienic phases (Larson *et al.*, 2006; Thorpe *et al.*, 2013).

Now a day, no one can ignore importance of nutrition transition for efficiency and progress and reduced time in cooking (Lang, 2001). Many countries have experienced expanded growth in diet-related chronic diseases and obesity (Popkin, 2002; Popkin *et al.*, 2004; Popkin and Gordon Lursen 2004). According to Vidgen and Gallegos (2014), the combination of knowledge, behaviors and skills in managing, planning, selection and preparation of food and empower individuals, and communities to keep diet quality to support dietary resilience.

Acquiring food and maintain healthy environment of diet is a major challenge to mankind quests. With the technological advancement in food industry, consumer expansion and transportation system and empirical evidences in nutrition research, it is still difficult to maintain the health and well-being of people (Colatruglio & Slater, 2014).

The rapid development in science and technology and to cope with food facilities to mankind has shaped our complex and traditional food environment. Our complicated food system has become complicated to search out ways to re-establish our link with food to restore health and well-being. That is why the term 'food literacy' has occurred in educational programs and literature (Colatruglio & Slater, 2014). Food literacy

and aspect of well-being create an education system that indorses the expansion of food literate citizens in the form of 'Nutrition Transition' (Popkin *et al.*, 2012). The knowledge about food literacy may strengthen the health oriented priorities. The investment in providing healthy food to their kids in early years may improve work-life balance (Colatruglio & Slater, 2014). The definition of well-being might differ. According to Canadian Index of Wellbeing (CIW, 2012) states that availability of better life quality, living standard, better health, viable atmosphere, energetic population, democratic activities, and equal access to leisure and cultural activities.

### Objectives of the Study

The objectives were to.

1. Investigate the perceptions about food literacy, health risks and academic wellbeing of farmers' children studying at university level.
2. Find out the difference in perceptions about food literacy, health risks and academic wellbeing of farmers of children with respect to demographic characteristics studying at university level.
3. Explore the correlation among food literacy, junk food, health risks and academic wellbeing.

### Hypotheses of Research

The null hypotheses were as under:

- H<sub>0</sub>1: No substantial difference in perceptions about different indicators by male and female students.
- H<sub>0</sub>2: No substantial difference in perceptions about different indicators by rural and urban students.
- H<sub>0</sub>3: No substantial difference in perceptions about different indicators by science and arts students.
- H<sub>0</sub>4: No substantial correlation among food literacy, junk food, health risks and academic wellbeing.

### Method

The current research is conducted under grounded theory approach. It investigates the issues directly concerned with human beings (Corbin & Strauss, 2008; Glaser & Strauss, 2009). The study used a survey approach.

### Population and Sample

All the university students studying in University of Education Faisalabad campus were the population of the study. Two hundred farmers' inwards were selected on the basis of demographic characteristics. Majority of the participants belonged to rural areas and their parents mostly worked in fields. Some families have shifted to urban areas completely or partially for the study of their inwards but they have strong farming traditions.

### Instrument

The data were collected with the help of self-developed instrument, Food Literacy, Health Risks and Academic Wellbeing Survey [FLHR-AWS] keeping in view the literature and prior studies on the same topic. The instrument has four factors with 35 items, food literacy (13 items), health risks (10 items), Junk food addiction (5 items), and academic wellbeing (7 items). The reliability of the instrument was 0.968. It was excellent for the research study. The reliability of the indicators was 0.809 for food literacy, .857 for junk food addiction, .806 for health risks and 0.882 for academic wellbeing.

### Data Collection

Data were collected using questionnaire. Verbal directions were conveyed to respondents. Two hundred and thirty respondents were approached randomly. Only two hundred students returned the questionnaires after completion.

### Data Analysis

Data were analyzed using descriptive and inferential statistics. The percentage of respondents' perceptions were analyzed through means. The difference in perceptions of the respondents were analyzed using t-test.

### Results

H<sub>0</sub>1: No substantial difference in perceptions about different indicators by male and female students.

Table 1 explained the t-test results between male and female students' opinions belonged to farming backgrounds. It revealed that gender of students has different opinions for food literacy, health risks and academic wellbeing. The higher mean values showed that male students were more knowledgeable about food literacy and academic wellbeing. On the other hand, female students were more health conscious than that of males. The variable of junk food addiction has same perceptions by males and females. So, the null hypothesis about substantial difference in perceptions about different indicators by gender of students was partially rejected.

H<sub>0</sub>2: No substantial difference in perceptions about different indicators by rural and urban students.

Table 2 explained the t-test results between rural and urban students' opinions belonged to farming backgrounds. It revealed that rural and urban students have different opinions about food literacy, junk food, and health risks. The higher mean values showed that rural areas students were more knowledgeable about

food literacy, junk food, and health risks than that of urban areas students. On the other hand, both groups of students have same perceptions about academic wellbeing. The variable of junk food addiction has same perceptions by males and females. So the null hypothesis about substantial difference in the perceptions about different indicators by rural and urban students was partially rejected.

H<sub>0</sub> 3: No substantial difference in the perceptions about different indicators by science and arts students.

Table 3 explained the t-test results between science and arts students' opinions belonged to farming backgrounds. It revealed that arts and science students have different opinions about junk food and academic wellbeing. The higher mean values showed

that science students were more knowledgeable about junk food and academic wellbeing. On the other hand, both science and arts students have same perceptions about food literacy and health risks. So the null hypothesis about significant difference in the perceptions about different indicators by science and arts students was partially rejected.

H<sub>0</sub> 4: No substantial correlation among food literacy, junk food, health risks and academic wellbeing.

Table 4 revealed a significant and strong positive correlation among the indicators of food literacy, junk food, health risks and academic wellbeing. It showed that if the awareness about food literacy improves, the next indicators of junk food, health risk and academic wellbeing. So the null hypothesis about

**Table 1. Gender comparison about different indicators**

Indicators	Gender	N	M	S.D	t-value
Food Literacy	Male	90	3.703	1.023	0.603*
	Female	110	3.613	1.073	
Junk Food	Male	90	3.748	0.974	1.112
	Female	110	3.589	1.040	
Health Risk	Male	90	3.452	0.958	-1.536*
	Female	110	3.748	0.914	
Ac Wellbeing	Male	90	3.743	0.739	2.913**
	Female	110	3.423	0.808	

\*\*p<0.01

**Table 2. Location wise comparison about different indicators**

Indicators	Location	N	M	S.D	T
Food Literacy	Rural	140	3.867	0.941	2.010*
	Urban	60	3.562	1.082	
Junk Food	Rural	140	3.866	0.829	2.095*
	Urban	60	3.572	1.071	
Health Risk	Rural	140	3.896	0.847	2.570*
	Urban	60	3.530	0.955	
Academic Wellbeing	Rural	140	3.585	0.838	.209
	Urban	60	3.559	0.774	

\*p<0.05

**Table 3. Subject wise comparison about different indicators**

Indicators	Subject	N	Mean	S.D	t
Food Literacy	Science	126	3.665	0.800	0.130
	Arts	74	3.647	1.174	
Junk Food	Science	126	3.854	1.006	2.085*
	Arts	74	3.547	1.001	
Health Risk	Science	126	3.652	0.788	0.156
	Arts	74	3.632	1.017	
Academic Wellbeing	Science	126	3.690	0.844	1.696*
	Arts	74	3.495	0.754	

\*p<0.05

**Table 4. Correlation among food literacy, junk food, health risks and academic wellbeing.**

Indicators	Junk food	Health risk	Academic wellbeing
Food literacy	0.703**	0.741**	0.628**

\*\*p<0/01

**RESULTS AND DISCUSSION**

The result showed that male students were more knowledgeable about food literacy and academic wellbeing. The rural areas students were more conscious about food literacy, junk food, and health risks than that of urban areas students. The science students were more aware about junk food and academic wellbeing. This gender disparity is often seen during process of education (Rafiq & Mohy-ud-Din, 2018). The current study showed that university going students were more aware about nutritious elements which leads to good health.

Many studies highlighted food related choices ultimately affect their health, diet, and environment (Howard & Brichta, 2013). It should comprise of natural ingredients that body needs balanced growth and stable health (Das, 2015) with current socioeconomic

environments and cultural standards.

Most parents were unaware of the food choices for their kids without bother about the mental health. Different problems of eye site weakness, obesity, diarrhea and headache and dullness are common disease by their kids. The energy drinks with salt, sugar, and fats that have low nutritional values being low quantity of protein, fibrous material, vitamins and mineral contents is called junk food (Kaushik, *et al.*, 2011).

Cafeterias at the schools are hesitant with balanced nutritious dietary values and quite ignorant of the side effects and interested in earning the commission by selling maximum items. It is ignorance of the parents, administration and canteen owners to compare junk food in cafeterias with homemade nutritious lunch boxes. Imbalance, unhygienic and poor nutrition may lead to have lasting penalties on their cognitive and physical development that results in slow learning ability, poor attention, and weak academic performance (Arya & Mishra, 2013. Das, 2015).

The information about health priorities and expand food literacy literature that promote healthy eating among community (Chung, 2017; Caraher & Lang, 1999; Jaffe & Gertler, 2006). The supermarkets, food stalls and other retail venues are full of such food items (Glanz *et al.*, 1998).

According to Pendergast *et al.* (2011), poor food choice and low diet qualities related to ignorance of food preparation knowledge and cooking methods that are safe to escape food poisoning. Food literacy helps to get know how about healthy eating practices and build resilience to consumers with different types of energy-dense nutrients and poor food supply at cheap rates (Fernandez, 2019).

The investment in providing healthy food to their kids in early years may improve work-life balance (Colatruglio & Slater, 2014). The diet-related facets dominated our lifestyle and increased health risks for cancer and obesity avoidance worldwide (World Cancer Research, 2018). Among four major risk factors for non-communicable chronic diseases, poor diet is supposed to big contributor than physical activities, smoking and alcohol use (Hyseni *et al.*, 2017). It losses lives and poor quality of life, financial burden on society with excessive health costs (Muka *et al.*, 2015).

The role of family is vital but most of the families uneducated and poor to face multiple issues like poverty, low education, large family size, and lack of educational facilities (Rafiq & Mohy-ud-Din, 2018). The refined vegetable oils, grains, and sugar coated items are not only easily available and cheap, but have good taste and appealing consumers' attention through media marketing (Drewnowski, 2018). The obesity epidemic is linked with international food supply rooted

in inexpensive refined grains, added sugars and vegetable oils to provide energy-dense nutrient-poor food in abundant quantity (Drewnowski, 2018). It is vital to know how young generation manage their food necessities and cope with the consistent challenges. University going or young adults' diet habits are worst among all ages (Nelson *et al.*, 2008; Paeratakul *et al.*, 2003; Pelletier & Laksa, 2012). Young students do not care about poor food, skip meal and snack eating (Al-Rethaiaa, *et al.*, 2010; Kremmyda, *et al.*, 2008; Satalic *et al.*, 2007). Readymade meals have become the habit of young generation like takeaway food and membership discounts (Burns, Jackson *et al.*, 2002; French *et al.*, 2001). The farmers' kids are well aware of the health risks but they are bound to buy low standard food from university canteens. The main reasons are time-constraints, and complex food chains (Colatruglio & Slater, 2016). Many researches showed that better diet quality is linked with expert cooking and multiple preparation steps (Larson *et al.*, 2006; Thorpe *et al.*, 2013).

### Further Research Recommendations

The future studies may be conducted to improve the hygienic standards of cafeterias and awareness should be conveyed to parents and students about abundance use of readymade food.

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