

## **FOOD CONSUMPTION AMONG POSTGRADUTE STUDENTS WITH HEALTH-RELATED PROFESSION BACKGROUND AT UOW IN SPRING 2018**

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**Abstract:** Healthy food intake is one of the factors that determine personal health status. Health workers are an essential part in public health practice, because they are the one who will convey health information to community to improve and promote healthy eating and lifestyle. However, even though health professionals knew that it is important to have healthy diet but sometimes it is poorly implemented in real practice. This pilot study aimed to analyse that regardless of health literacy, whether there are some other considered factors that influences health workers to choose and consume either healthier or less healthy food. This research is a cross-sectional study and the data were collected between August and September 2018. Research participants are 32 postgraduate students who had health-related profession background for their undergraduate degree and/or current students taking health-related courses at University of Wollongong (UOW) Australia in spring 2018. The recruitment of participants used convenience-sampling method, quantitative and qualitative online surveys were used for data collection. Quantitative data was analysed using Microsoft Excel and qualitative data describes using thematic analysis. The result showed that 28% of participants are medical graduates, followed with public health (25%), nursing (19%), allied health (13%), nutrition (6%), dentistry (3%) and other (6%). Using healthy eating index, the result presents that there are only 6% of total participants who maintain healthy food consumption while the majority consume moderate (53%) and somewhat healthy food (31%). Thematic analysis describes further about different perception of healthy eating, daily food consumption, facilitator and barrier of healthy eating, knowledge and personal eating experience among respondents. The majority of respondents with health professions background tend to have moderate healthy diet, they argue that there are many factors that influence their diet. Health promotion and practical intervention for health worker is an essential strategy to refresh knowledge, maintain and engage healthy behaviours among health workers and also improve their potentials to influence healthy behaviour in community. Facilitation and provision of healthy food that are available, accessible in various settings especially in workplace with affordable price could promote healthy diet engagement.

**Keywords:** healthy diet, healthy eating index, health professionals, postgraduate students

### **Introduction**

Healthy food intake is one of the factors that determine personal as well as global health status (WHO 2018). In clinical settings, health professionals are the one who will engage with patients regarding diet and healthy behaviour promotion. At the same time, in public health settings, health workers are also an essential part of public health practice, because they are the actor who will convey the message to community to improve and promote healthy eating and lifestyle. Nevertheless, a research by Florindo et al. (2015) found that if health professionals lived a healthy lifestyle and has a healthy diet, they will tend to engage more with healthy behaviour promotion to their patients. Consequently, it is interesting to find the truth regarding health professionals' healthy behaviour and the topic that tend to be focused in this research, is to analyse the correlation between health professionals and food consumption.

Health professionals were believed to have better health and nutrition literacy, since they might have basic understanding about health aspects in daily living practice including healthy eating and a research shows that it is true that the majority of health professionals are familiar with the concept of functional food (Wadi & Ferrari 2017). Also, health workers are considered as role models in their community in terms of healthy lifestyles and more likely to promote healthy behaviours especially regarding functional food consumptions (Florindo et al. 2015; Kardakis et al. 2013). However, some previous studies show that even though health professionals knew that it is important to keep healthy but sometimes it is poorly implemented in real practice (Oliveira & Nogueira cited in Wadi & Ferrari 2017).

*“... Health workers should be the model in having healthy food but yet is the opposite is my worry as people will see that even the health workers not living up to what they have said or learnt” (Participant #7)*

Furthermore, there are many factors related to personal food choices and shifting of diet preferences including income, education level and rural or urban living conditions, family structure, age, race, rapid urbanization and development of food industry (WHO 2018; Streeter 2017; Ma et al. 2016). Therefore, another question also brought up in this proposed research is to analyse that regardless of health literacy, whether there are some other considered factors that influences health workers to choose and consume more healthy or less healthy food.

## **Research Question, Aims and Objectives**

### **Research Question**

How does health related profession background correlate with food consumption among postgraduate student at University of Wollongong?

### **Aims**

The aim of this research is to analyse food consumption among postgraduate students with health-related profession background and contributing factors related to food consumption.

### **Objectives**

1. To measure the proportion of healthy food consumption
2. To measure the proportion of less healthy food consumption
3. To analyse the perception about healthy eating
4. To describe the factors that contribute to food preferences and consumption
5. To examine the healthy food consumption engagement

## **Methods**

### **Study Design**

This research is a cross-sectional study and the data were collected between August and September 2018.

### **Participants**

Research participants for this study are postgraduate students who were taking Public Health, or Nursing or Health Informatics courses at University of Wollongong. The inclusion criteria to be participated in this study are that the participants have health-related profession background for their undergraduate degree and/or were taking health-related courses in their

study. The recruitment of participants used convenience-sampling method by sending emails to current postgraduate students who were taking university courses in spring session 2018.

### **Instrument**

Both quantitative and qualitative online surveys were used for data collection in this research. Initially, for quantitative online survey, there are four questions that cover an information regarding general aspects (gender, age, education or professional background and cultural background), thirty questions regarding food consumption (dietary pattern, fruit and vegetables, fat, starchy foods, sugar, salt, drinks and alcohol consumption) with 'Yes' or 'No' answer options, and one open ended question regarding an interest in participating in qualitative survey by input email address. The survey questions about food consumption was modified from an existing questionnaire called 'How healthy is your diet? Questionnaire' originated from British Heart Foundation organization (BHF, 2012). Furthermore, for qualitative online survey, there are ten open-ended questions that asked the participants about their opinion, experience and suggestion regarding healthy diet.

### **Administration**

Online survey was developed using 'Survey Monkey' and the invitations were send via emails and web links. At the beginning, there were 38 invitations sent by emails to prospect participants. Once the participants receive invitation email for quantitative survey, they could directly access the survey, answer and submit it online. If the participants are willing to participate again in qualitative online survey, they could mention their agreement and provide their email address to be furtherly contacted. In the end of quantitative data collection, the sample size or number of participants were 32 (Response Rate: 84.2%), and there were 14 participants who were interested to join qualitative survey. Furthermore, another qualitative survey invitation sent to 14 participants and in the end, 7 participants took qualitative survey (Response Rate: 50%).

### **Data Analysis**

Quantitative survey data was analysed using Microsoft Excel, as a tool to present descriptive data. While, for qualitative data, thematic analysis is used to describes data in different themes related to the topic.

## **Results**

### **Quantitative Survey**

#### **Participants**

A total of 32 participants are included in quantitative survey. The proportion of male and female are 44% and 56% respectively (Figure 1). The majority of participants' age is within 25-34 years of age range (81%) (Figure 2). Then, based on education background, around 28% of participants are Medical graduates, followed with Public Health (25%), Nursing (19%) and the small proportions for Allied Health, Nutrition, Dentistry and Other (Figure 3). While, for cultural background, the majority of participants are Indian (35%) and Nepali (19%) (Figure 4).

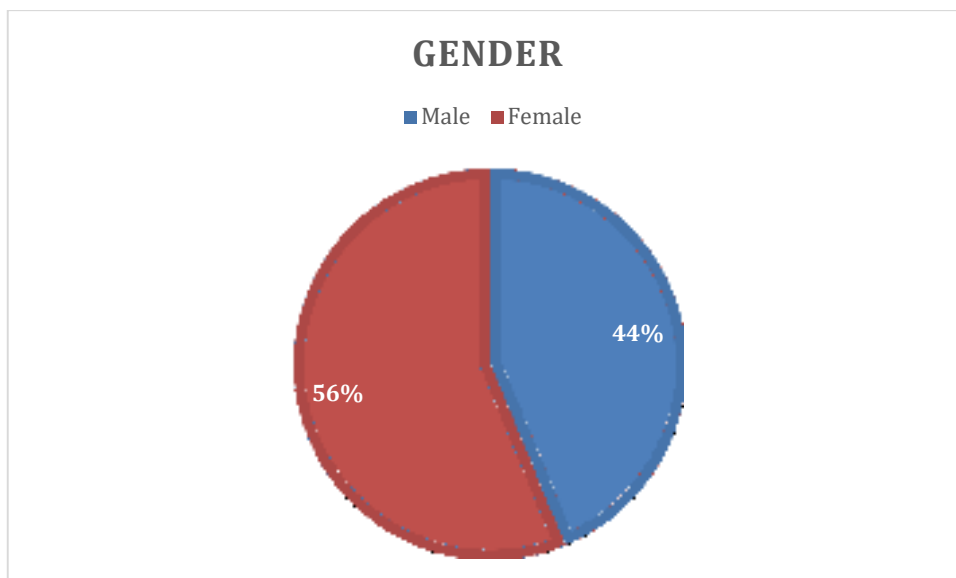


Figure 1. Gender

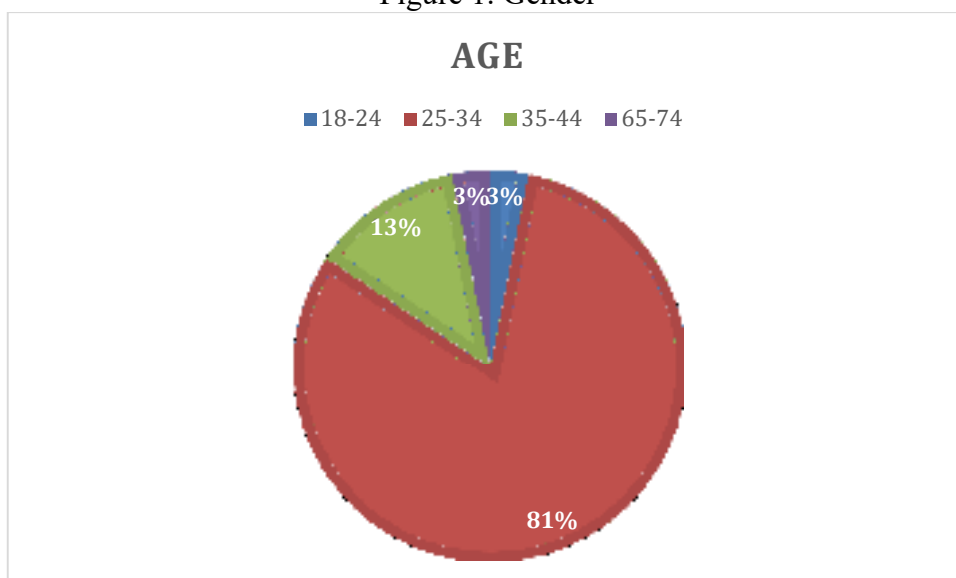


Figure 2. Age

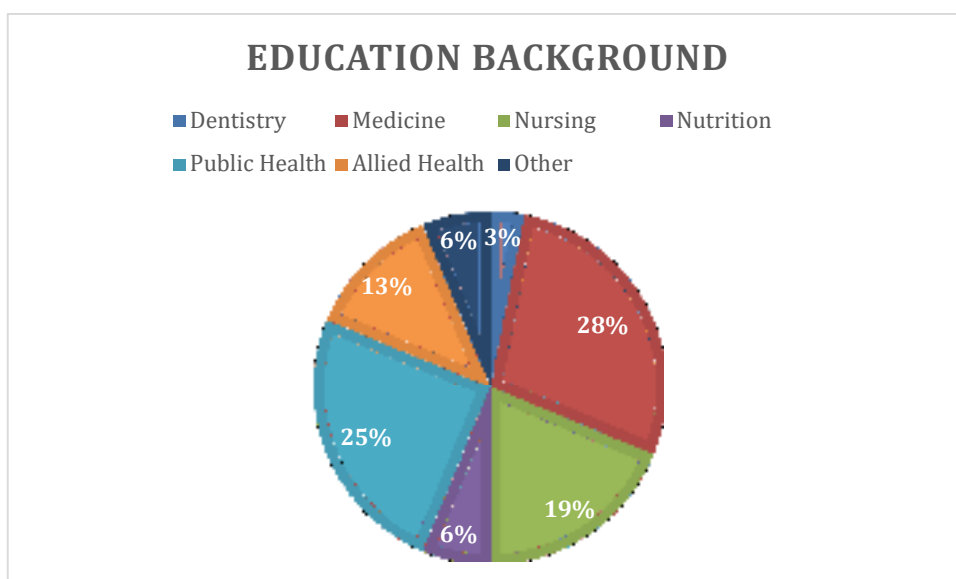


Figure 3. Education Background

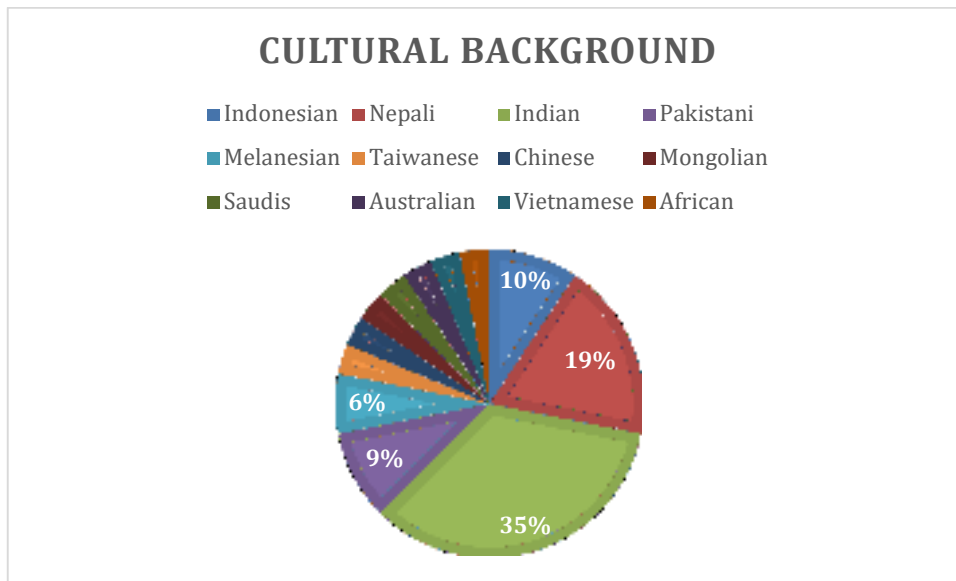


Figure 4. Cultural Background

### Healthy Eating Index

Quantitative data calculation was conducted to describe the level of healthy eating among participants using scoring system. From a total of 30 questions asking about food consumption, each question receive score of 1 (one) for an answer that is considered as 'healthy' and score of 0 (zero) for an answer that is considered as 'unhealthy'. Consequently, the range of scoring is between 1-30. Furthermore, scoring system is used to classify healthy eating index as 'Healthy' (score: 25-30), 'Moderately Healthy' (score: 19-24), 'Somewhat Healthy' (score: 13-18), 'Slightly Unhealthy' (score: 7-12) and 'Unhealthy' (score: 1-6). The result shows that there were only 6% of total participants considered having healthy food consumption while the majority of participants were having moderately healthy and somewhat healthy diet that accounted for 53% and 31% respectively (Figure 5).

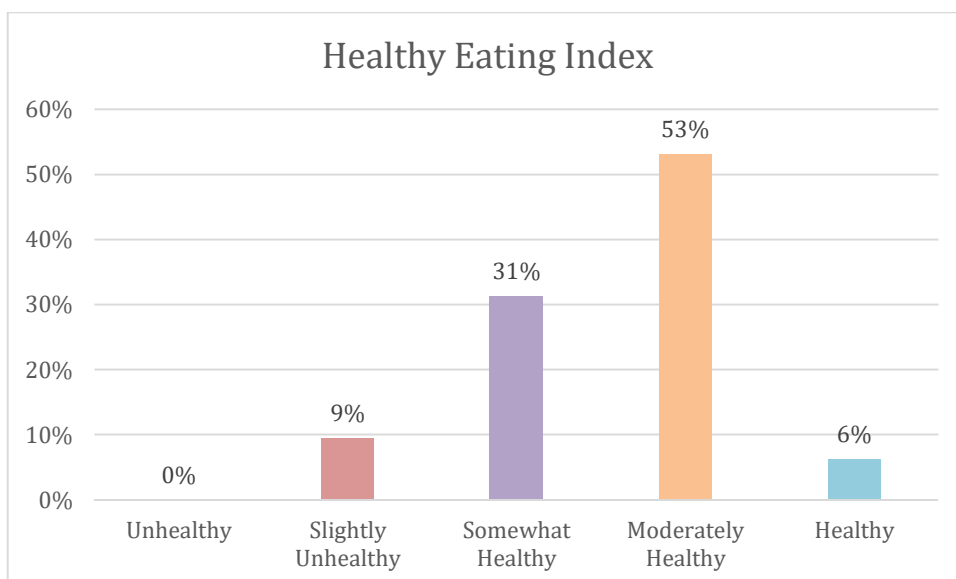


Figure 5. Healthy Eating Index

## **Qualitative Survey**

Seven respondents (22%) completed qualitative survey and the responses are divided into several themes.

### **Perception of Healthy Eating**

Every participant has different definition about healthy eating, some look at merely on the constituent or type of food, eating frequency and amount of food. Healthy eating is defined as consumption of nutritious food and balanced diet comprising carbohydrate, fat, protein and vitamin. In addition, some of the participants mention that healthy eating is include meals from five major food groups based on Australian Dietary Guideline that consist fruit, vegetables, grain, meats and poultry, and milk products.

On the other hand, some participants see healthy diet as a comprehensive selection of food related to their cultural and belief. They have a thorough opinion about healthy eating more than that previously explained, some of Muslim participants mentioned that healthy eating means eating halal food that are not only avoid consumption of forbidden foods or beverages but also consume the foods that are gathered or accessed from halal manner in terms of appropriate preparation and are acquired from right ways.

*“Health eating means you care for your physical health by eating halal, nutritious and balanced food ... most importantly, is to ask before eating, is it halal in terms of food materials and in terms of the way I get it. Halal is not (only) because it is free from alcohol or pork, but also am I getting it in correct and rights ways (?). So, it should not be from stealing, or buying it with money from corruption, or from other wrongdoing thing. Those are things that I would consider when I define healthy eating.” (Participant #1)*

### **Daily Food Consumption**

Generally, some participants have no particular diet restriction, and some have particular dietary consideration based on their culture or belief, for example some of them do not eat beef and have vegetarian diet based on spiritual belief or a participant have gluten free diet or limit salty food consumption due to health issues. Other participants eat halal but actually consume varieties of food and the food consumptions are not limited, but halal is the main consideration before the food is consumed.

*“ ... (I eat healthy food) because I always make time to cook food by myself.” (Participant #2)*

Almost all participants consume a variety of food daily including vegetables, fruit, vegetables, grain products, meat and poultry and some mention of how they prefer to consume those foods in certain type of cooking or traditional cuisine. Some participants also mentioned that they eat “unhealthy snack” sometimes.

On the other hand, some participants mention that they eat processed food and try to limit the consumption for only once or twice a week because they do not have time to cook due to busy schedule while processed food are easy and fast to cook, but since they are concern about their health, so they try to consume those food as rarely as possible.

*“I have no particular diet ... and sometimes eat wrong (unhealthy) foods too.” (Participant #7)*

*“I eat a lot of vegetables ... I don't eat fruits at all except bananas ...” (Participant #5)*

### **Experience of Personal and Other Colleagues Eating habit**

Generally, all participants mentioned that some of their friend and colleagues who are also health professionals and or having health-education background practice healthy diet and eat properly based on their knowledge about diets while some other do not care much. They argue that it is a matter of choices whether they want to eat certain kind of foods because some of friends who are health practitioner were strict with their diet while other health practitioner is suffered from obesity. Some participant mentioned that their friend eating outside, eat instant meals and fast food most of the time because of busy schedule and lack of time.

*“Lack of time in previous job led everyone to eat instant meals, fast food and even then didn't have time to sit and eat slowly. I have worked in 3 different hospitals and everywhere it was the same case. Health professionals, in my opinion, have worse diet than general public.” (Participant #5)*

### **Facilitator and Barrier of Healthy Eating**

Healthy eating is shaped by many factors, different conditions and backgrounds. There are some factors related to healthy diet that can be classified into these main factors namely accessibility, availability, affordability, knowledge, personal experience and family history.

#### **Accessibility**

Accessible supermarket and proximity to shops, whether there is any local fresh fruit and vegetables market that consider to sale healthy food products cheaper. In addition, regarding the availability of different mode of transportation that could ease the access to buy healthy fresh food. People who owned private transportation or living in an area that near to shops will have easier access to fresh food. Also, time availability to access, buy, cook and consume healthy food.

#### **Availability**

This factor could be defined as location of home or work living area that related to availability of fresh and healthy food instead of packaged processed food. Also, availability of time to prepare, cook and consume food properly. Some participants said that they do not have enough time due to busy schedule for work and study, so they do not have enough time to prepare food.

#### **Affordability**

The availability of healthy and fresh food that is affordable and considered as lower in price. As a consequence, food prices and personal income or financial stability relates to the affordability of someone to buy and consume healthy food.

#### **Knowledge**

The knowledge about healthy diet is also considered as a big influence as guidance for consumer about what to eat and what to avoid.

#### **Personal experience and family history**

Family and cultural background can also be considered as a basic influence of eating-habits, since upbringing of individual (including eating habits) tend to remain the same until adulthood. For one of the participants, the taste is one of the major factors that affect personal

food preferences without really thinking whether the food is healthy or not. This aspect may be linked to the choices of certain cuisine or traditional food. Another factor is peer pressure of have direct or indirect influence on how eating habits may change.

### **Suggestion or Recommendation**

Some participants gave a suggestion to improve healthy eating promotion by provide time to prepare, cook and consume healthy food. Other focused on improving accessibility and availability healthy food at workplace with affordable price.

*“Healthy eating can be promoted if it is made more accessible and easily affordable. People will always prefer to be healthy if they have it as a cheaper and easily available option” (Participant #3)*

Another participant suggested promoting healthy eating by improvement of awareness program by highlighting the positive aspect of healthy food and the negative aspect of junk food. While one participant said that there is no specific recommendation when dealing with healthy eating promotion among health professional.

*“... These people (health professionals) are the toughest one to offer an advice. They always have reasons for what they do and those are the things that I, myself, find that I am struggling with it ...” (Participant #1)*

Another participant mentioned that the best approach to improve health nutrition promotion is that it should be started from childhood because the health message would likely to remains and stays longer until adulthood.

*“Promotion of healthy diets starts from the family setting, upbringing of an individual and tend to remain the same till adulthood” (Participant #4)*

### **Discussion**

This study showed that there is only small proportion of health professionals who engage with daily food consumption that are considered as healthy diet while the majority are having moderate and somewhat healthy diet. Furthermore, the quantitative survey result highlights on varieties of daily food consumption. The result shows that there is a considerable number of participants who are regularly skip meals and high proportion of participants who consume inadequate fruits daily with less fruits variety. Reflected on previous study by Florindo et al. (2015), the findings show that most of community health workers at primary health care were also consume inadequate fruits and vegetables (Florindo et al. 2015).

Moreover, about half of health workers were overweight and obese, that its prevalence was no difference with general population (Florindo et al. 2015). Similarly, a study by Hidalgo et al. (2106) concluded that there is high proportion of health professionals who are not engage with healthy behaviour that causes them to be suffered from chronic diseases and makes them less likely to encourage patient and general population to have healthy lifestyle behaviours (Hidalgo et al. 2016).

These findings demonstrated low engagement of fruit and vegetables consumption among health professionals. However, the finding might be different between various settings since based on comparative study by Ferrara et al. (2013), it is presented a result of comparison between two study groups in university setting namely health related (HM) students and other majors (NH) students. The research examined the incidence of obesity and



healthy lifestyles among students. The findings show that the incidence of obesity is lower, fruits and vegetables consumption are higher in HM compared to NH (Ferrara et al 2013).

Additionally, other findings regarding sugar and salt consumption show that more than half of participants regularly add sugar to drinks and almost all of them regularly add salt during cooking. Nevertheless, It is important for consumer to know that it is fine to consume salt and sugar as long as within adequate amount based on the recommended guideline (BHF 2012). In addition, there is a considerable proportion of regular consumption of fizzy drinks, cakes, sweet, biscuits and sugar-coated cereals and consequently it is essential for consumer to check food label to know how much salt and sugar that they are consumed in a day (BHF 2012).

Another finding on qualitative survey is that based on some respondents experience, health professional are having poor diet and reflecting on a research by Hidalgo et al (2016) shows that there are high proportion of health professionals including physicians, nurses and community health workers that were not engage in daily healthy behaviour such as low physical exercise, smoking habits and low nutritious dietary intake. This finding may cause them to be less likely to encourage healthy lifestyle and healthy eating promotion to the patients and community (Hidalgo et al. 2016). Even though the context not limited to food consumption, the research by Hidalgo et al. indicates that there is a strong need to modify or facilitate healthy behaviour changes among health professionals.

Furthermore, a study by Wadi and Ferrari (2017) evaluates the knowledge of nutrition and intake of functional foods among health professionals in primary health care. The findings show that even though most of health professionals had adequate knowledge about the concept of functional foods, but the intake of healthy food is considered as inadequate especially for certain kind of fruits and vegetables. In contrary, the frequency of meats, fried and fatty food intake are high. As consequence, the dietary quality among health professionals should be improved with fats, sweets, meats and fried foods intake reduction (Wadi & Ferrari 2017). This research gave an insight that the facilitator of healthy eating is not merely knowledge about health but as found in this research that availability, accessibility, affordability, personal experience, family influences and cultural background may also contributes to personal preferences to healthy eating.

## **Conclusion**

This research shows that the majority of respondents with health professions background tend to have moderate healthy diet while they argue that there are many factors that influence their diet. Health promotion such as healthy lifestyle intervention for health worker is an essential strategy to improve healthy behaviour and also because they have potentials to influence healthy behaviour in community or public health setting while at the same time could improve knowledge, maintain and engage healthy behaviours among health workers.

Health promotion intervention should targeting a general population with provision of organization support and national guidelines that can facilitate knowledge improvement among health worker and at the same time encourage and assign health professional in supporting healthy lifestyle intervention for community and also for themselves.

Also, facilitation and provision of healthy food that are available, accessible in various settings especially in workplace with affordable or even low price compared to less healthy food options could promote healthy diet engagement. Lastly, health promotion intervention and healthy dietary practices that started in early life in various setting especially within family and early education may resulted in better long term benefits.

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