



## Dietary patterns of health workers in COVID dedicated hospital

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### ABSTRACT

Dietary patterns qualify combination of foods that make up a person's accustomed diet to be known. Many of health workers had overlook good dietary patterns. Good Nutrition can improve well being and might mitigate the risk and morbidity associated with Corona Virus Disease. This study aimed to find out and describe the dietary patterns among health workers (HW) working in COVID-19 dedicated Hospital. Gazipur, Bangladesh. A descriptive type of cross-sectional study was conducted on Health Worker working in COVID-19 dedicated Hospital. Total 261 samples were selected from study place. Study samples and the study place also selected by purposively. Each respondents were supplied a questionnaire consisting closed ended question. Its main focus was the dietary patterns of health worker. Among the respondents 11.5% had Medical Doctors and 88.5% had Nurses. 87.70% had done 12 hours duty per day and 12.30% had done 8 hours duty per day. 47.9% had co morbidity. This study mentioned that only 1.5% respondents consuming Tobacco. This study revealed majority of the respondents 98.5% had taken variety of food. This study shows that most of the respondents 49.4% had taken meal three times in a day. This study revealed 96.2% had taken breakfast but among them 60.5% had told us that they were not taken it in right time. In this study 62.8% had skipping snacks at morning time and 59.0% were skipping snacks at evening time. This study identified 98.9% respondents had taken lunch but among them 78.2% had not taken lunch in just time. Majority of the respondents 93.9% had taken dinner where as 81.2 had not taken dinner in right time. This study also pulling out 51.7% had taken vegetable, 45.6% had taken fruits, 75.1% had taken protein according to WHO guideline. 93.9% had taken Zinc containing food. 96.2% respondents had taken tea/coffee  $\geq 6$ day/week but 0.4% respondents had taken sweet and sweet product  $\geq 6$ day/week. 99.2% had taken egg  $\geq 6$ day/week. Mean BMI of the respondents was 25.7 kg/m<sup>2</sup>. This findings informs good dietary patterns improve our immunity and help to prevent all categories infectious diseases specially COVID 19. Therefore, all healthcare organizations should supply healthier foods in reasonable price in the hospital canteen.

## INTRODUCTION

The COVID-19 pandemic in Bangladesh is part of the world wide pandemic of corona virus disease 2019 (COVID-19) caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). The first three known cases were reported on 8 March 2020 by the country's epidemiology institute, IEDCR. Since then, the pandemic has spread day by day over the whole nation and the number of affected people has been increasing. However, Bangladesh was the second most affected country in South Asia, after India (Reuters, 2020).

Nutrition is one of the most important factors when fighting a virus especially COVID-19. Eating a nutrient dense diet can help us to prevent dehydration and proper nutrition helps in avoiding vitamin and mineral deficiencies and support immune system, Immunity is the ability of an individual or community which can help us to fight against any infectious diseases specially COVID 19. This is key to keeping oneself healthy and supporting recovery if someone becomes sick.

A dietary pattern is defined as the quantity, variety, or combination of different foods and beverage in a diet and the frequency with which they are habitually consumed. On the other hand

Dietary patterns are actually the food choices preferred by persons in their daily life. They differ from person to person. A healthy dietary habit helps an individual to stay fit and well throughout his life. Healthy diet includes fruits, vegetables, cereals, water, low fat dairy products, etc. (Castro-Quezada, 2014).

Dietary patterns are the habitual decisions an individual or culture makes when choosing what foods to eat. The word diet often implies the use of specific intake of nutrition for health or weight-management reasons. Although humans are omnivores, each culture and each person holds some food preferences or some food taboos. This may be due to personal tastes or ethical reasons. Individual dietary choices may be more or less healthy. Dietary habits and choices play a significant role in the quality of life, health and longevity. It can define cultures and play a role in religion. (Castro-Quezada, 2014).

Optimal nutrition is one of the main determinants of health that can improve well-being and mitigate the harmful health consequences associated with social distancing by helping to prevent or control most chronic diseases (e.g., diabetes, hypertension, and excess bodyweight/obesity); aid in the regulation of sleep and mood; and prevent fatigue.

Nutritional modulation of the immune system is also important across the age spectrum. In older adults, the group at most risk for COVID-19, changes in dietary habits lead to significant alterations in immunity and inflammation, termed immune senescence and inflammation.

Health care provider is an individual who provides preventive, curative, rehabilitative health care services in systematic way to individuals, families or communities or Health workers are the peoples whose job is to protect and improve the health of community people. Together these health workers, in all their diversity, make up the global health workforce.

In COVID 19 Situation to protect the population the government of Bangladesh has declared “lockdown” and prepared some necessary action to keep the infection in control. For this reason, some Isolation centers have opened and some

government hospitals have declared as a COVID dedicated hospital. Shaheed Tajuddin Ahmed Medical Hospital is one of them.

Generally, most of the Health Workers have different working hours’ schedules, and some studies have demonstrated that there was no difference between shift workers and daytime workers in terms of their total energy intake and this has also been confirmed in some nutrition’s research review. On the other hand, it has been shown that shift workers have more unfavorable dietary patterns compared to day workers. Moreover, many others reports have shown that shift workers have different dietary habits and food selection.

Long working hours, shift work, availability of fast food, eating in responses to stress as a maladaptive coping convenience, environmental factors and nature of food outside the working hours, may all or in part contribute to the observed poor dietary habits among HWs and can affect their productivity negatively. There is lot of barrier to healthy eating in the nursing profession these are work load, inadequate break and difficult access to healthy food can affect their dietary patterns. Physician’s physical well being and mental wellbeing has been linked to the availability of nutritional sources at work and this places an important role for healthcare policy and decision makers in adopt more proactive approaches to the wellness of their healthcare workers as many physicians around the globe usually fail to adopt healthy dietary habits at work. In context of Covid 19 pandemic situation working schedule of health care worker and duty hours also changed that why health care worker facing a big trouble regarding maintain their usual dietary patterns. But there is no study about dietary patterns among health worker working in COVID 19 pandemic situation. Therefore, the aim of this study is to explore the various dietary patterns among HWs at COVID 19 Dedicated Hospital in Bangladesh.

## **MATERIALS AND METHODS**

### **Study area and participants**

The study was conducted to find out the dietary patterns among health workers (HW) working in COVID-19 dedicated hospital “Shaheed Tajuddin Ahmed Medical College Hospital”, Joydevpur, Gazipur, Bangladesh. During COVID-19 pandemic lot of patients were found in this area. In this hospital, total 69 doctors and 404 nurses were working here as a health worker. Total 100 beds dedicated to treat COVID positive patients; the hospital has four ventilators and 10 ICU beds. The study was conducted for a period of one year commencing from 1st January to 31st December 2020.

Total 261 Health care workers were selected from Shaheed Tajuddin Ahmed Medical College Hospital by using Purposive sampling method. Health worker who were willing to participate in this study were taken as a sample. 261 samples from 472 study population were achieved within the time limit of data collection.

### Data collection and analysis

A pretested semi structure questionnaire was used to collect data during this study. Following informed written consent and ensuring the details of the study objectives, the respondents were interviewed by ensuring the privacy and confidentiality. On an average 10-15 minutes for data collection from every respondent. A semi structured questionnaire was developed in English. The questionnaire was developed using the selected variables according to the specific objectives. The questionnaire was contained question related to i) Socio-demographic characteristics, ii) Personal habits, iii) Other factors e.g. co-morbidity condition, iv) Duty patterns and iv) Dietary patterns and anthropometric measurement. In this study, the questionnaire was translated into Bangla and it was pretested among the respondents of similar characteristics. The questionnaire was finalized after necessary modifications according to the findings of pretesting.

Anthropometric measurement such as height, weight was measured. Dietary patterns were determined by 24 hour recall and food frequency questionnaire. After collection of whole range of data, data were processed and analyzed using

SPSS version 10. The bivariate data analysis was done using Chi square ( $\chi^2$ ) and Fisher Exact Test with 95% CI (Confidence interval). The results were presented in the form of tables and graphs.

## RESULTS AND FINDINGS

### Socio-demographic characters of the respondents

**Table 1:** Distribution of the respondents by their educational status (n-261)

Socio-demographic characters	Percent (%)	
Sex	Male	13.40
	Female	86.60
Age (Years)	20-30	37.50
	31-40	41.40
	40-50	14.60
	>50	6.50
Religion	Muslim	90
	Christian	2
	Hindu	8
Marital status	Married	91.20
	Unmarried	8.80
Monthly income (Tk)	>30000	42.5
	31000-40000	37.20
	41000-50000	5.40
Occupation	>50000	14.90
	Doctors	11.5
	Nurses	88.5
Types of family	nuclear family	51.7
	joint family	44.4
	extended family	3.8
Duty hours/day	12 h	87.70
	8 h	12.30
Habit of consuming tobacco	Yes	98.5
	No	1.5

In the study the male respondents were 13.40% whereas female were 86.60%. Regarding age 41.40% were in the age group of 31-40 years, where as 6.50% were in the >50 years of the age group, 37.50% were in the age group 20-30 years and 14.60% in the age group 0-50 years. Muslim was 90%, Christian was 2% and Hindu was 8.0% among the respondents. Among the respondents

91.20% married and 8.80% unmarried. The study also showed monthly income of the respondents where 42.5% had less than 30000 taka per month, 37.20% had 31000-40000 taka, 5.40% person had 41000-50000 taka and 14.90% had income more than 50000 taka.

Among the respondents, 11.5% were medical doctors and 88.5% were nurses. The types of family shows that 51.7% lived in nuclear family, 44.4% lived in joint family and only 3.8% lived in extended family. On the basis of habit of tobacco, only 1.5% respondents were consuming tobacco and 98.5% respondents were not consuming tobacco (Table 1).

**Table 2:** Distribution of the respondents by their educational status (n-261)

Educational qualification	Frequency	%
MBBS	7	2.7
MBBS with post graduation	23	8.8
Diploma in Nursing	163	62.5
Diploma with Bsc in nursing	29	11.1
Diploma, Bsc with masters	17	6.5
BSc in nursing	12	4.6
BSc with masters	10	3.8
Total	261	100.0

Table 2 shows the educational qualifications of the respondents of which 62.5 % had completed Diploma in nursing and Midwifery, 8.8% had completed MBBS with Post graduation, 2.7% had complete MBBS degree, 11.1% had completed Diploma and BSc in nursing degree, 6.5% had completed Diploma in Nursing+BSc in nursing degree and masters degree, 4.6% had completed four years BSc in nursing degree, 3.8% had completed BSc in nursing and masters degree.

**Table 3:** Distribution of the respondents by their designation (n-261)

Designation	Frequency	%
Specialist doctor	15	5.7
Medical officer or register	15	5.7
Nursing supervisor with senior	9	3.4
Senior staff nurse or others	222	85.2
Total	261	100.0

Table 3 presented that majority of the respondents 85.2% had senior staff nurses/ Nurse, 5.7% had specialist doctors, 5.7% had medical officer and register level and 3.4% had nursing supervisor and other nursing officers.

Among respondents 57.9% had taken supply water for drinking purposes, 15.7% used tube well or deep tube well water and 26.4% had taken bottle mineral water (Table 4).

**Table 4:** Distribution of the respondents by their source of drinking water

Source of drinking water	Frequency	Percent (%)
Supply water	151	57.9
Tub well or deep tube well	41	15.7
Bottle Water and Mineral Water	69	26.4
Total	261	100.0

**Table 5:** Distribution of the respondents by their different co morbidity among the health worker

Name	Frequency	%
Irritable bowel syndrome	16	6.1
Hypertension	41	15.7
Hemorrhoids	9	3.4
Allergic symptoms	79	30.3

The table shows us 6.1% had irritable bowel syndrome, 15.7 % had hypertension, 3.4% had hemorrhoids and 30.3% were had allergic symptoms.

**Table 6:** Food habit of respondents

Food habit	Percent (%)	
Number of times food taken	Three times	49.4
	>3 Times	6.9
	<3times	43.7
Variety of food taken	Yes	98.5
	No	0.4
	Sometimes	1.1
Taking breakfast right time	Yes	60.5
	No	32.2
	Sometimes	5.4

Table 6 shows 49.4% respondents had taken meal three times in a day. 43.7% had taken meal more than three times in a day and 6.9% respondents had taken meal less than three times in a day. Among the respondents, majority 98.5% had taken variety of food, .4% had not taken variety of food and 1.1% had taken variety of food sometimes. It is observe that 98.9% respondent took lunch of which 18.8% took lunch in right rime and 78.2% did not take lunch in right time. The data shows that 93.9% had taken lunch, 6.1% did not take lunch. Only 10% had taken dinner in right time whereas 81.2% did not take their dinner in right time.

The distribution of the respondents by their eating fast food e.g. Singara, Samucha, Puri, Chanachur, Chatpoti, Fusca, Noodles, Jhalmuri, Salted biscuits showed that that 3.8% had taken different fast foods, 20.4% had not taken fast foods, 36.4% had taken sometimes, 18.0% had taken suddenly, and 21.5% had never taken any fast foods. Respondents taking milk and milk product were 46% and sometimes 18%. Respondents eating green leafy vegetables (e.g. Lalshak, spinach, Puishak) were 72.8% and sometime 14.9%. According to WHO guideline, the respondents eating (daily) vegetables were 51.7% and sometimes 21.1%. Eating fibrous fruits were 76.6% and sometimes 14.6%, eating citrous fruits were 73.9% and something 17.2%. According to WHO respondents eating fruits were 45.6% and sometime 28.7%. Daily protein intake according to WHO guideline by the respondents were 75.1% and sometimes it was 13.4%

Table 7 shows us majority 98.9% respondents had taken carbohydrate in lunch and 1.1% had not taken. For protein majority 98.9% had taken only 1.1% had not taken .98.9% had taken fat in lunch 1.1% had not taken. Vitamin and mineral

had taken 62.8% and 31.8% had not taken vitamin and mineral in lunch.

Whereas majority 95.4% respondents had taken carbohydrate in dinner and 4.6% had not taken. For protein majority 95% had taken only 5% had not taken .95% had taken fat in dinner 5% had not taken. Vitamin and mineral had taken 54.8% and 45.2% had not taken in dinner.

**Table 7:** Distribution of the respondents by eating carbohydrate, protein, fat, Vitamins and mineral in lunch and dinner

Nutrients	Percent respondents	
	Lunch	Dinner
Carbohydrate	98.9	95.4
Protein	98.9	95
Fat	98.9	95
Vitamin & Mineral	68.2	54.8

#### Anthropometric measurement

The Anthropometric Measurement as BMI (Body Mass Index) was  $25.7 \pm 3.46$ . However the percent respondents according to BMI are described in Table 8 where ma Majority of the respondents 51.0% had BMI between 25-29.9.

**Table 8:** Distribution of the respondents according to their anthropometric measurement

BMI groups of the respondents	Frequency	Percent (%)
<18.5	4	1.5
18.5-24.9	88	33.7
25-29.9	133	51.0
>29.9	36	13.8
Total	261	100

**Table 9:** Association between sex and number of taken food per day among the respondents (n-261)

Sex of the respondents	Three times	Less than three times	More than three times	x <sup>2</sup> , df	P value
	Frequency (%)	Frequency (%)	Frequency (%)		
Male	21 (60%)	2(5.7%)	12 (34.3%)	1.813,2	0.404
Female	108 (47.8%)	16 (7.1%)	102 (45.1%)		
Total	129 (49.4%)	18 (6.9%)	114 (43.7%)		

**Table 10:** Association between occupation and number of taken food per day among the respondents

Occupation of the respondents	Three times	Less than three times	More than three times	x2 ,df	P value
	Frequency (%)	Frequency(%)	Frequency (%)		
Doctor	17 (56.7%)	3(10.0%)	10 (33.3%)	1.663,2	0.435
Nurse	112 (48.5%)	15 (6.5%)	104 (45.%)		
Total	129 (49.4%)	18 (6.9%)	114 (43.7%)		

**Table 11:** Association between co morbidity (hypertension) and taken salted foods among the respondents

Salted food	Yes	No	x2, df	P value
	Frequency (%)	Frequency (%)		
Always	1 (25%)	3 (75%)	1.864 ,4	0.761
Often	5(12.8%)	34 (87.2%)		
Sometimes	13 (13%)	87 (87%)		
Rarely	14(18.2%)	63 (81.8%)		
Never Taken	8(19.5%)	33 (80.5%)		
Total	41 (15.7%)	220 (83.5%)		

**Table 12:** Association between monthly income and protein consumption according to WHO guideline among the respondents

Monthly Income (Taka)	Yes	No	Sometime	Total	Fisher Exact Test	P value
	Frequency (%)	Frequency (%)	Frequency (%)			
<30000	80 (72.1%)	16 (14.4%)	15 (13.5%)	111	6.574	0.337
31000-40000	71(73.2%)	11(11.3%)	15(15.5%)	97		
41000-50000	10(71.4%)	1(7.1%)	3 (21.4%)	14		
>50000	35 (89.7%)	2(5.1%)	2(5.1%)	39		
Total	196 (75.1%)	30 (11.5%)	35 (13.4%)	261		

**Table 13:** Association between age and vegetable consumption according to WHO guideline among the respondents

Monthly income	Yes	No	Sometime	Total	x2 ,df	P value
21-30	51 (52.0%)	26 (26.5%)	21 (21.4%)	98		
31-40	56(51.9%)	33(30.6%)	19(17.6%)	108		
41-50	19(50%)	9(23.7%)	10 (26.3%)	38		
>50	9 (52%)	3(17.6%)	5(29.4%)	17		
Total	135 (51.7%)	71 (27.2%)	55 (21.1%)	261& 100%		

There is non-significant association of sex ( $p=0.404$ ) (Table 9), occupation ( $p=0.435$ ) (Table 10) and number of taken food per day among the respondents.

There had no significant relationship between co morbidity (HTN) and taken salted food among the respondents, ( $p=0.761$ ) (Table 11).

The relationship between monthly income and protein consumption according to WHO guideline among the respondents showed that there do not have statistically significant relation. Exactly 72.1% respondents had consumed protein whose income was <30000. Whereas 89.7% respondents had consumed protein whose income had >50000 taka.

The relationship between age and vegetable intake of the respondents according to WHO guideline shows that there had no significant ( $p=0.819$ ) association between age of the respondents and vegetable intake according to WHO guideline. ( $p>0.05$ ),  $X^2(1, n=261)=2.918$ ,  $df=6$ ,  $p=0.819$ .

However, the relationship between intakes of soft drink and sex among the respondents was

significant ( $p=0.034$ ). The statistical result shows that, there had significant relationship ( $p=0.00$ ) between BMI and age of the respondent's (Table 16). Whereas there had no significant relationship between BMI and sex of the respondent's ( $p=0.063$ ) (Table 15)

**Table 14:** Relationship between intake of soft drink and sex among the respondents was significant. ( $p=0.034$ )

Soft drink	Male	Female	Total	$X^2,df$	P value
	Frequency (%)	Frequency (%)			
0-1 day/ week	29 (16.4%)	148(83.6%)	177	6.789,2	0.034
2-3 day/ week	3 (4.3%)	66 (95.7%)	69		
4-5 day/ week	3(20%0	12 (80.0%)	15		
Total	35 (13.4%)	226 (86.6%)	261&100%		

**Table 15:** Association between BMI and sex among the respondents

BMI groups of the respondents	Male	Female	Total	Fisher Exact Test	P value
	Frequency (%)	Frequency (%)			
<18.5	0 (0%)	4 (100%)	4	6.760	0.063
18.5-24.9	6 (6.8%)	82 (93.2%)	88		
25-29.9	25 (18.8%)	108 (81.2%)	133		
>29.9	4 (11.1%)	32 (88.9%)	36		
Total	35 (13.4%)	226 (86.6%)	261&100%		

**Table 16:** Association between BMI and age among the respondents

BMI of the respondents	Age of the respondents				Total	Fisher Exact Test	P value
	20-30	31-40	41-50	>50			
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)			
<18.5	3(75.0%)	1(25.0%)	0(00%)	0(00%)	4	29.869	0.00
18.5-24.9	49(55.7%)	28(31.8%)	8(9.1%)	3(3.4%)	88		
25-29.9	40(30.1%)	62(46.6%)	24(18.0%)	7(5.3%)	133		
>29.9	6(16.7%)	17(47.2%)	6(16.7%)	7(19.4%)	36		
Total	98(37.5%)	108(41.6%)	38(14.6%)	17(6.5%)	261&100%		

## DISCUSSION

This study had conducted during COVID 19 pandemic situation and in this time the working patterns of Health workers had changed as they had stayed long time with wearing PPE at their working place. That's why their frequency of meal taking had averted. Majority of the respondents

(49.4%) had taken meal three times, 4.9% had taken less than three times and 43.7% had taken more than three times in a day. These findings had similar to the study conducted by Al hazmi et al, 2018.

In this study majority of the respondents had female 86.6%. The nurse cadre is vital in

managing COVID hospital and the same human resource structure had observed in this study where 88.5% had either senior staff nurse or other Nurse. These results demonstrate that female health worker significantly higher proportion than male regarding taken of meal more than three times in a day. However, this difference had not statistically significant ( $p > 0.05$ ). This study also mentioned that number of meal taken by the respondent had not influenced by their occupation here the statistical test result had not significant. These findings had also similar to the study conducted by Al hazmi et al, 2018 but this difference had statistically significant  $p < 0.05$ .

In this study majority of the Health worker started their morning duty usually at 8am that why they had taken opportunity to take breakfast and they could took it in right time. In our study majority of the respondents 96.2% had taken breakfast only 1.9% had not taken breakfast. The respondents who had taken breakfast majority of them 60.5% had taken breakfast in right time, 32.2% had not taken in right times due to their duty schedule and work load. In our study majority of the respondents skipping snacks this findings also dissimilar the study were conducted by Siyabonga (2017). They showed that the majority of health professionals did not adhere to healthy eating habits. Most of them skipped meals especially breakfast, and they consumed lot of unhealthy foods. Other studies also reported a similar problem of unhealthy eating habits among health professionalism various countries including South Africa. And this study we had identified that time of taking breakfast had not influenced by their age group, the test had not statistically significant  $p > 0.05$ .

According to Mekary et al. (2011) most health professionals skipped meals, but male participants skipped meals more as compared to female participants, especially breakfast and lunch meals but in our study male and female had equally skipping meal there is no significant relationship sex and skipping meal.

As variety encourages us to eat more variety of food which enhance us for good eating. Variety of food makes our diet more nutritious so eating a greater variety of fruits and vegetables can benefit

our health. In this study majority 98.5% respondents had taken variety of food.

Micronutrients contribute to immune function through a variety of pathways in both innate and adaptive immune responses. Vitamins A, C, D, E, B6, and B12 are important for the maintenance of structural and functional integrity of physical barriers (eg, skin, gastrointestinal lining, respiratory tract, and others) as well as for the differentiation, proliferation, function, and migration of innate immune cells. In our study we have identified that majority of the respondents 72.8% were taken leafy vegetable and 83.9% were taken non leafy vegetable daily. We also asked them about the amount they have taken majority 51.7% told us they have taken vegetable according to WHO guideline. Age of the respondents had not influenced by vegetable intake of the respondents. The statistical result had not significant  $p > 0.05$ .

Daily intake of definite amount of protein and Zinc are essential for boost our immunity. Majority 196 people had taken 160 gram protein per day. This result also similar to WHO recommendation. This study shows that among the respondents 261, Most of the respondents 245 had taken Zinc containing foods daily. This study had not identified about the amount they have taken. But Christianne de Faria Coelho-Ravagnani et al (2020) said that a narrative review showed ample evidence of the antiviral activity of zinc (10 mg/kg of body weight, up to 600 mg/d total) against a variety of viruses, such as influenza.

This study also mentioned that most of the respondents had taken fibrous and citrus fruits Among the 261 respondents, most of them 119 people had taken 2 cups of fruits per day. This was similar to WHO recommendation.

This showed us a mixed result about intake of fast-food and soft drinks. In this study had displayed good relationship between sex and intake of soft drinks. The statistical result had significant  $p < 0.05$ . This result is dissimilar with Betancourt-Nunez et al. (2018).

Milk is ideal food milk is a good source of different vitamins and minerals. In present study most of the respondents had taken different item of

milk and milk product. 46.0% respondents had taken milk and milk product daily and 18% respondents had taken sometimes but 36% respondents had not taken milk and milk product. These findings had also mostly similar with dietary guideline for Bangladesh.

Fats and oil are essential for health. In our country different types of vegetable oil are used as cooking oil this study find out that majority of the respondents 78.5% had used Soyabean oil, other respondents had used Mustard and rice brand oil. These result also similar with dietary guideline of Bangladesh. This study also described there is a significant relationship between sex and intake of fats and oil ( $p < 0.05$ ).

It is important to note that diets low with in water and rich in salt can negatively impact kidney function. In this study Health workers (HW) of STAMCH had taken supply water 57.9% and 15.7% had taken tube well or deep tube well water, 26.4% had taken bottle mineral water. This study only showed that the respondents had taken water from different water source but all of the respondents had taken minimum eight glass of water. This study also mentioned 100% health worker had taken packet salt and most of the respondents had taken salted food sometimes where as only 1.5% had taken salted food always.

Coffee, the commonest drink consumed by Health worker in this study, is not only consumed as tradition, but because it is usually sweetened, has important stimulant effects and is generally known to enhance mental process and work performance. In our study 96.2% respondents had taken tea coffee six/more than six days per week. Infact, some studies have shown that physicians who often work for long hours consume more coffee to enhance their performance.

In this study the 24 hour recall questionnaire was widely used as a tool for assessing food consumption, by this questionnaire we assessed how many nutrients like carbohydrate, protein, fat and vitamins and minerals had eaten in breakfast, snacks, Lunch, evening snacks and dinner. This study had only mentioned dietary patterns of health worker but did not summarize any category.

The effects on health in individuals being on different working schedules (daytime, night-time or rotating) are a widely discussed topic and cover not only metabolic syndrome and its risk factors like obesity. This study identified that there is a good relationship between working hours and tea coffee consumption. Statistical result had significant here  $p < 0.05$ . In this study among the respondents 261, 87.70% had done 12 hours duty per day and 12.30% were done 8 hours duty per day but Al Hazmi, et al. (2018) state that in their study more than one-half of the HCWs (54.5%) work for more than 8 hours daily, in variable timing (53.6%); and one third (34%) cover on-calls.

This study displays us 47.9% had co morbidity among the 261 respondents Betancourt-Nunez, et al. (2018) conducts another study shows that systolic blood pressure values were found more often in men than in women. Nonetheless, women had higher concentrations of total cholesterol and HDL cholesterol than men. This study described that among the 47.9% respondents those had hypertension, irritable bowel syndrome, Hemorrhoids and allergic symptoms type of co morbidity. Among those co morbidity there is significant difference between hypertension and number of meal taken per day.

In present study among the respondents 261, Majority of the respondents had not consuming tobacco (98.5%). Only 1.5% was consuming tobacco. Al Hazmi, et al. (2018) state that in their study 85.10% had non smokers and 14.90% had smokers. In our study among the respondents 261, No respondents had not taken any kinds of alcoholic drink.

This study shows that Mean BMI of the respondents is  $25.7 \text{ kg/m}^2$ . This study also shows that highest BMI of the respondent is 37 and lowest BMI of the respondents is 17. Among the respondents 261, Majority of the respondents 51.0% had BMI between 25-29.9. That means majority had overweight. 13.8% had BMI > 29.9. That means they had obesity. 33.7% respondents had BMI between 18.5-24.9. They had within Normal. Only 1.5% had in below normal. Alejandra Betancourt-Nunez (2018) describes in their study According to BMI data, 24.5% were

overweight, 8.5% had obese and 27.2% presented abdominal obesity.

Socio demographic characteristics of the respondents had important factors which can influenced respondent's dietary patterns. In this study there had a significant gender-related difference which had observed regarding intake of fried rice, intake of soft drink and intake of fats and Oil. We had also found that there had a no significant occupation -related difference but we had found age -related significant difference. This study also identified no significant difference between BMI and sex of the respondents. But there had a significant relationship between age and BMI of the respondents.

Despite the lack of association, it is important to mention that sample size is small in this study and the subject most of them accustomed to eat breakfast 96.2%, skipping snacks 62.8%, eat lunch 98.9% but had not taken it right time 78.2%, skipping snacks 59% in evening time, eat dinner 93.9% but had not taken right time 81.2%. 72.8% had taken green leafy vegetable and non leafy vegetable 83.9%, 76.6% eaten fibrous fruits and citrus fruits 73.9%, 93.9% eaten Zinc containing food which had an important dietary patterns of health worker in this study.

## CONCLUSION

This study emphasizes the exploration of the dietary patterns of health worker who are working in COVID dedicated hospital. During COVID 19 pandemic situation different National and International agencies developed some dietary guideline which has boosted the immunity of all categories people in our community. This dietary guideline also helpful for preventing all categories infectious diseases specially COVID19. This type of study had conducted first time in Bangladesh which has some recommendation .By establishing this recommendation health worker can improve their dietary patterns and enjoy healthy life. Failure to adhere the recommended healthy guideline and if this adhere will continue, which increase the susceptibility of infectious disease specially COVID 19 and also other NCDs. Health worker is role model in our society and health worker also should create example in the society.

So that the general public may be/must be encouraged and motivated to adhere to the healthy dietary patterns.

## Recommendation

- Short duration of duty will help health worker to build healthy dietary patterns who are working in COVID dedicated hospital.
- Health worker must be avoiding harmful food habit like soft drinks consumption.
- Established a cafeteria in the hospital ground which introduces healthy food with reasonable price. Or make an agreement with a food supplier who will supply fresh food.
- we have need to conduct number of study in future, like a longitudinal study is recommended to ascertain the dietary patterns of health worker working in COVID dedicated hospital.
- The diet plans and menu options have been formulated based on an assessment of household and individual food consumption using the HIES 2010.

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