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Health conditions and COVID-19 vaccination status among the people in a union of Gopalganj district, Bangladesh

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ABSTRACT

In May 2022, the "Upendra Nath Chowdhury Trust (UNCTrust)" organized a Health Camp at Upendrapalli in Khagbari village of Ramshil union parishad, Kotalipara, Gopalganj, Bangladesh.Two hundredfifty-three people (166 females and 87 males) got their treatment, from ages 2 to 90 years old, in the Ramshil union parishad Health Camp program. There were four groups based on their ages: I. Pediatric Group, PG (> 0 to 14 years); II. Young Group, YG (15 to 47 years); III. Middle Age Group, MAG (48 to 63 years); and IV. Elderly Group, EG (≥64 years) people (Table 1). It shows that no significant age differences between females and males among the groups.

The major health problems of the participants in this program are asthma, blood pressure, and heart problems. In each group, there are a lot of people suffering from asthma problems. Even though pediatric group (PG) kids are also suffering. The males are suffering more than females with this disease. In PG, 20% females but 64% males; YG, 57% females and 54% males; MAG, 50% females and 67% males; and EG, 14.81% females and 67% males are suffering due to asthma problems. The next major health problem of these people is blood pressure. There were 40% females & 27% males in YG, 43% females & 37% males in MAG, and 59% females & 47% males in EG are suffering with blood pressure in these study groups. The data shows that the females are suffering more than males with blood pressure. According to our survey from the health camp participants, females are reported more than males with diabetes. The elderly group (EG; specially females) has a significantly higher percentage (11%) of diabetic patients compared to the other age groups. The data shows that there is a positive correlation with age.

The females were reported to smoke less comparing to the males, and these are 3% vs. 31%, 3% vs. 52%, and 4% vs. 52% among the YG, MAG, and EG, respectively. They don't drink any kind of alcohol.

The most common foods for these villagers are rice, fish, and vegetables. They eat rice 3 times a day for seven days a week. These people drink almost 1200 ml to 1800 ml of water per day and there are more than 80% of people taking raw salt during their meal every time.

Almost 100% participants were vaccinated except pediatric group. From the PG, around 27% and 8% of females and males were vaccinated, respectively. Most of the participants from YG, MAG, and EG received both doses 1 & 2. The females of young group (YG) participants received the first two doses more than males (87% vs. 64%, respectively), but males received more booster doses compared to the females of the same age group (24% vs 9%, respectively). On the other hand, it was reversed for MAG people. In MAG people, females' participants received the first two doses less than males (64%

vs. 80%, respectively), but females received more booster doses compared to males of this age group (36% vs. 20%, respectively). The 73% of females and 81% of males of elderly group (EG) participants received doses 1 & 2, but 27% of females and 19% of males received booster doses. That means, more percent of females received booster doses compared to males in both MAG and EG.

In PG participants, the percentage of females (33%) taking medicine is a lot more compared to males (15%). But the percentage is higher for males taking medicine compared to females in both YG and MAG people participated in this program (64% vs. 56% in YG and 48% vs. 37% in MAG for males vs females, respectively). The percentage of elderly group (EG) participants in both females (73%) and males (72%) taking medicine are the highest compared to other age groups.

In conclusion, ahealth camp is very useful when it comes to learningabout the health status of the people at the root level, and with this event, we could also improve their health awareness. The organizer from the "Upendra Nath Chowdhury Trust (UNCTrust)" will organize Health Camp/Eye Camp and Workshop/Seminar once a year now which will help with the improving of health and education of the villagers in future.

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Background

Bangladesh is an underdeveloped country in South Asia. It is the eighth-most populous country in the world, with a population exceeding 168 million people in an area of ~148,460 square kilometers (~57,320 sq mi). There are 64 districts, 495 sub-districts, ~4,571 unions, and ~68,000 villagesin Bangladesh. Gopalganj is one of the districts, and the district has about 1,172,415 civilians with a surface area of 1,490 km² (Fig 1A).

There are 5 police stations/thanas/upazilasin Gopalganj district, and Kotalipara is one of them. This upazilais divided into municipality and12 union parishads including Ramshil union parishad (Fig 1B). There are seven villages (Khagbari,Rajapur, Ramshil, Mushuriya, Jaharerkandi, Kafulabari, Kaborbari)under this Ramshil unionwith a population 17,542(Census 2011) in an area of 29.19 square kilometers (population density is 601.0/km^2).

Ramshil Union:

Gender (C 2011)	
males	8,661 (49.4%)
females	8,881 (50.6%)

Urbanization (C 2011)	
Rural (100%)	17,542

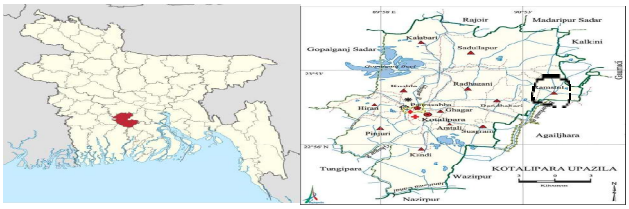
In the rural areas of Bangladesh, the governmenthealthcare system remains a very minor source ofhealth care for rural households[1]. There is no MBBS doctor/registered physician practicing in this union. They mustvisitUpazila (Kotalipara) health complex (11.3 km) or Gopalganj district hospital/clinic (30.4 km) for any emergency treatment.

In May 2022, the "Upendra Nath Chowdhury Trust (UNCTrust)" organized a Health Camp named "Anjali C. Bain & Unmesh Chowdhury Health Program" in Khagbari village ofRamshil union parishad, Kotalipara, Gopalganj, Bangladesh. In our knowledge, this was the first time a health camp had been organized in this unionto know the health status and providetreatment forthe population in these areas.

Health Camp organized

A day before the Heath Camp, a person was announced all over the union through miking that "A health camp will be held at the "Upendrapalli" in the village of Khagbari and a group of MBBS doctors with five different specialists will see the patients and prescribe medicine for their treatment with free of cost. It was also informed that the organizer will distribute free medicines. Please arrive there in the morning and get your free treatment including medicines".

The people had started to arrive around 8 am and doctors started their examination around 10 am. There were five doctors,tennurses, including paramedics, and almost thirty volunteers to help them. Ahealth formwas completed by nurses and volunteersbefore sending the patient to the doctor. There were a lot of peoplecoming, but doctors completed their examination and prescribed medications for about 250 people by ~5 pm.



A B

Figure 1.A. Location of the Gopalganj district in a Bangladesh map. B. Location of the Ramshil Union in a Kotalipara Upazila map under Gopalganj district

Photographs: These photographs are showing different activities during the health camp in the Khagbari village of Ramshil union, Kotalipara, Gopalganj, Bangladesh.

People participated in this program

Age groups

Two hundred fifty-threepeople, varying from ages 2 to 90 years in the Ramshil union parishad Health Camp program (166 females and 87 males), got their treatment,. There were four groups based on their ages: I. Pediatric Group, PG (> 0 to 14 years); II. Young Group, YG (15 to 47 years); III. Middle Age Group, MAG (48 to 63 years); and IV. Elderly Group, EG (≥64 years)people (Table 1). It shows that no significant age differences between females and males among the group (Table 1).

Married (Ma) and un-married (Un-Ma) status

In the PG, 100% were un-married in both females and males;88.75% females and 69.23% males were married in the YG; and 100% participants weremarried in both MAG and EG (Table 2). The females got married above 19 years and male got married above 35 years old.

Occupational status

Among the PG people, 66.7% and 61.5% were students in females and males, respectively. But most of the participants were housewives and farmers in all YG, MAG, and EG (Table 3). There were 88.7% and 55.8% housewives and farmers in females and males under YG, respectively; but 100% and 92.3% were housewives and farmers in females and males under MAG, respectively. On the other hand, 100% were housewives and farmers in both females and males under EG, respectively.

Major health problems of the participants

In PG, 20% females and 64% males; YG, 57% females and 54% males; MAG, 50% females and 67% males; and EG, 15% females and 67% males are suffering due to asthma problems (Table 4 and Figs 2-4). The next major health problem of these people is blood pressure (Table 4 and Figs 2, 3, &5). There were 40% females and 27% males in YG, 43% females and 37% males in MAG, and 59% females and 47% males in EG were suffering with blood pressure in these study groups.

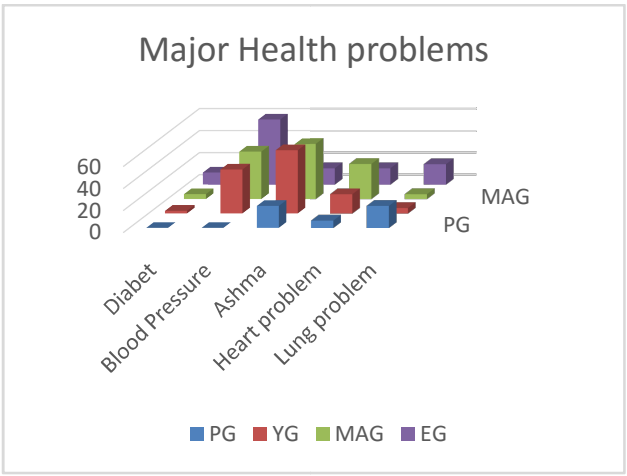


Figure 2. Major health problems of females (%)

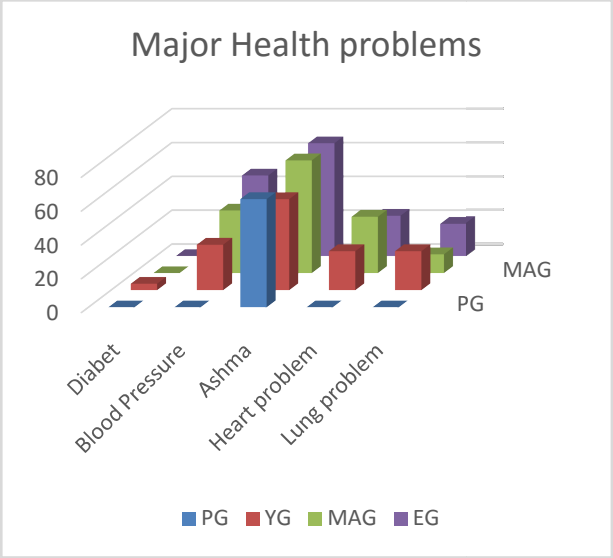


Figure 3. Major health problems of males (%)

Heart problem is also a concern among these people, and males are suffering more than females with this health problem (Table 4 and Figs 2, 3, and 6). In MAG, almost 33% in both females and males have reported about their heart problem (Table 4 and Fig 6).

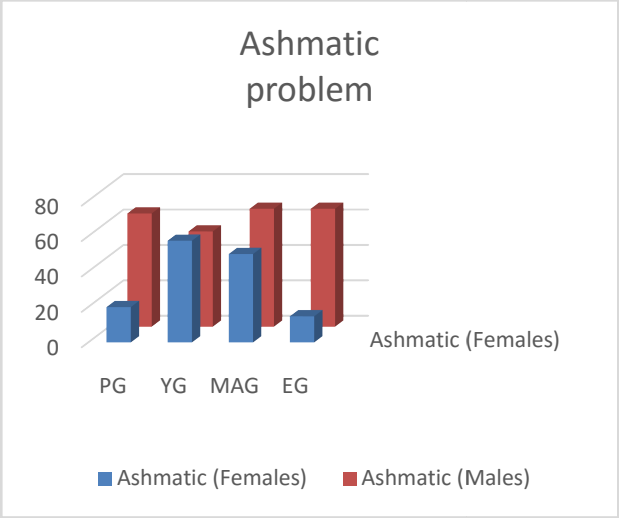


Figure4. Asthma problems of females and males (%)

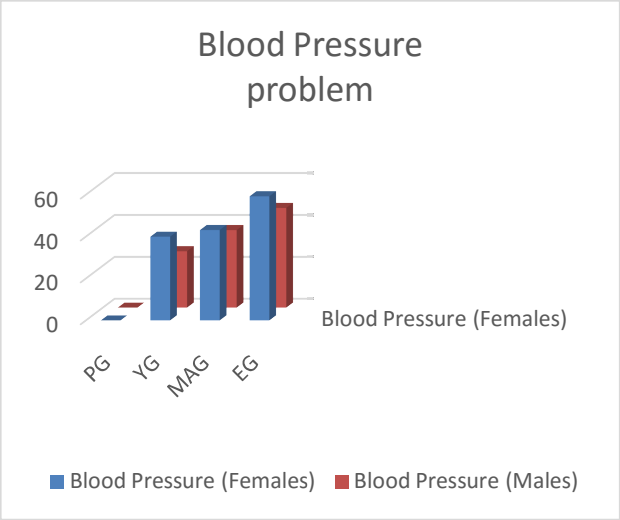


Figure 5. Blood pressure problems of females and males (%)

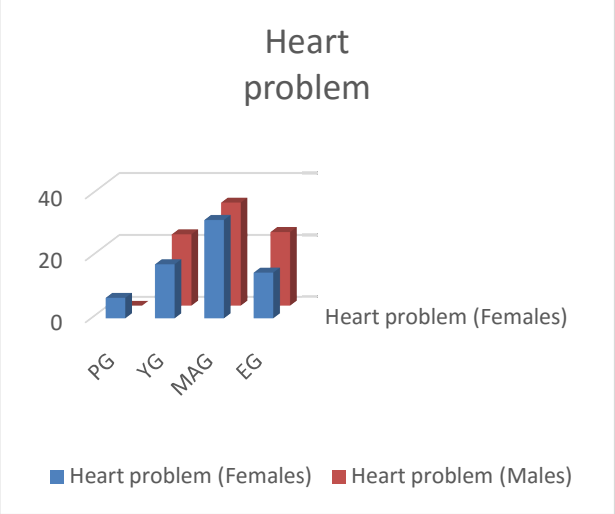


Figure 6. Heart problems of females and males (%)

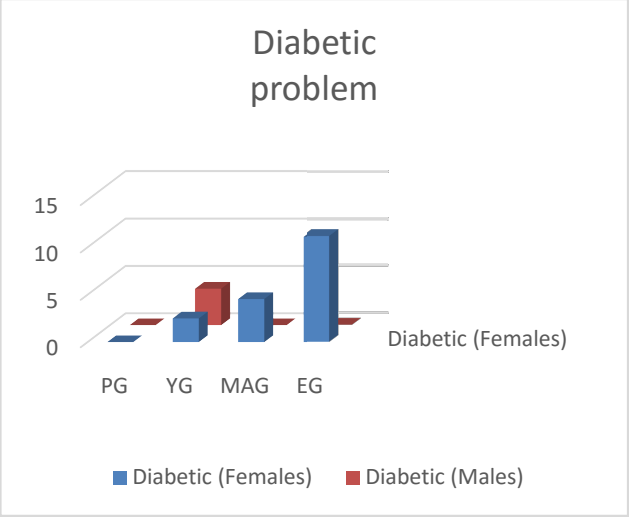


Figure 7. Diabetics problem of females and males (%)

The elderly group (EG; especially females) has reported a significantly higher percentage (11%) of diabetic patients compared to other age groups (Figs 2, 3, and 7).

Other health problems of the participants

The other most common illnesses are weakness, headache, muscle pain, joint pain, chest pain, back pain, and blurred vision (Table 5 and Figs. 8-11). There were 33% vs. 15% in PG, 54% vs. 42% in YG, 58% vs. 50% in MAG, and 56% vs. 55% in EG, forfemales vs. males that reported their weaknesses, respectively. The percentage of headache illnesses were reported 20% vs. 0% in PG, 50% vs. 4% in YG, 51% vs. 33% in MAG and 52% vs. 30% in EG among the females vs. males, respectively. In males, the people were reported their muscle pain, joint pain, back pain illnesses in MAG (46%, 50%, and 50%), YG (17%, 33%, and 8%), and EG (30%, 40%, 40%)), respectively. There is another important health problem like blurred vision illness for people in these villages. Blurred vision illness was reported 37% vs 17%, 42% vs. 21%, and 59% vs. 35% for females vs. males in YG, MAG, and EG, respectively.

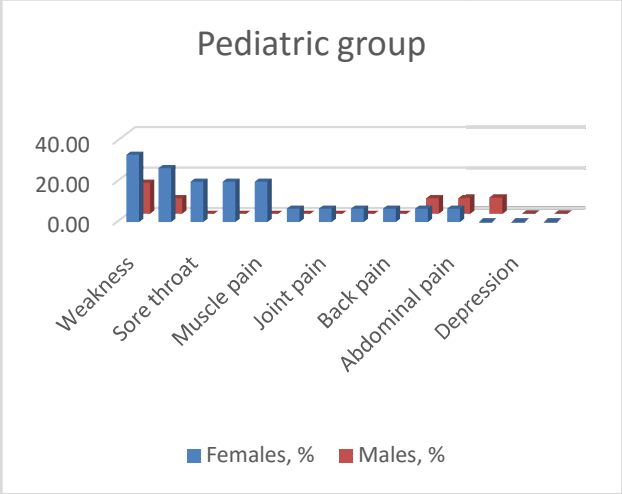


Figure 8. The health problems of PG people

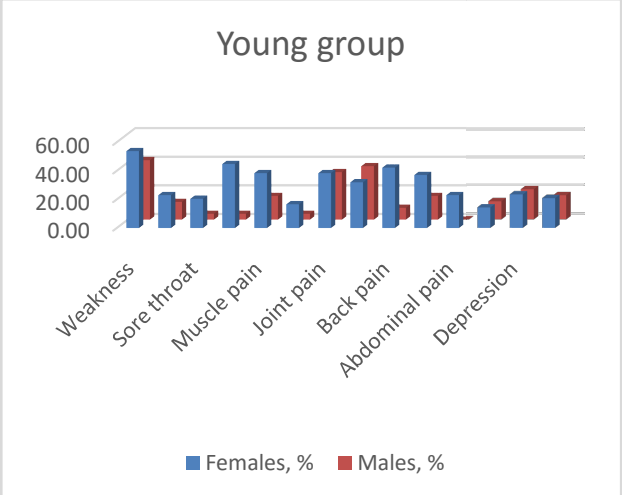


Figure 9. The health problems of YG people

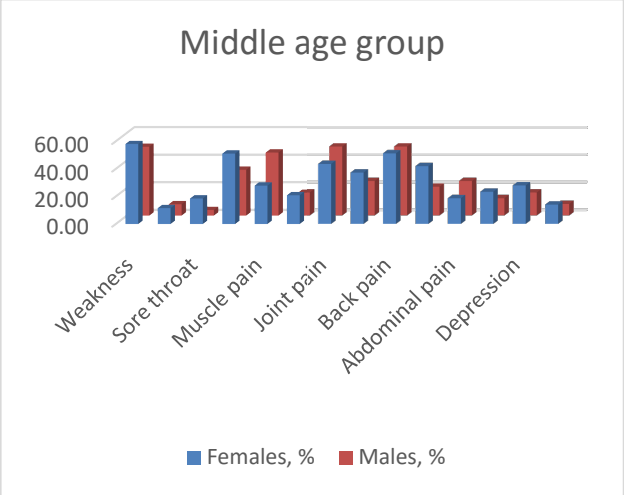


Figure 10. The health problems of MAG people

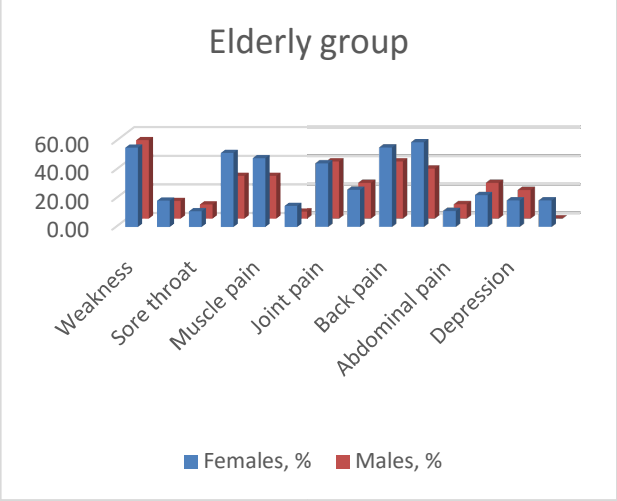


Figure 11. The health problems of EG people

Patient'ssmoking and drinking habits

The patients' smoking and drinking habits are reported in Table 6 and Fig. 12. The females were reported to smoke less comparing to males, and these are 3% vs. 31%, 3% vs. 52%, and 4% vs. 52% among the YG, MAG, and EG, respectively.

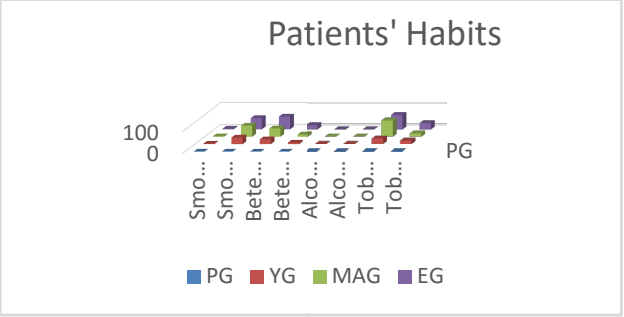


Figure 12. Smoking and drinking habits among the different age groups of people in these villages

Patients' food habits including raw salt consumption status of the people

The patients' food habits include raw salt consumption, and the status of these people are reported in Table 7 and Figs 13-17. The most common foods for these villagers are rice, fish, and vegetables.

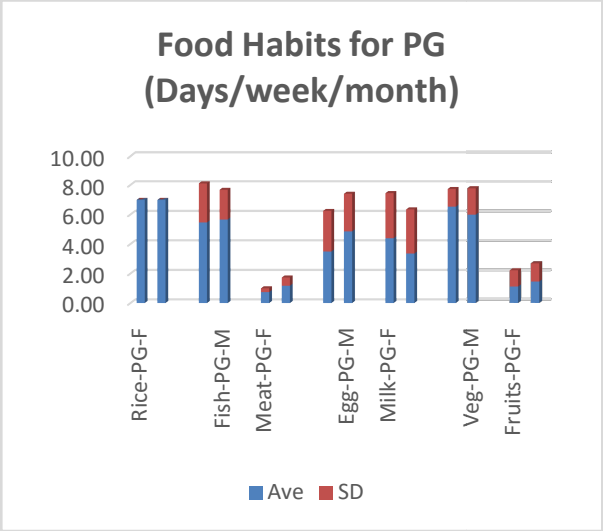


Figure 13. The food habitsofPG people

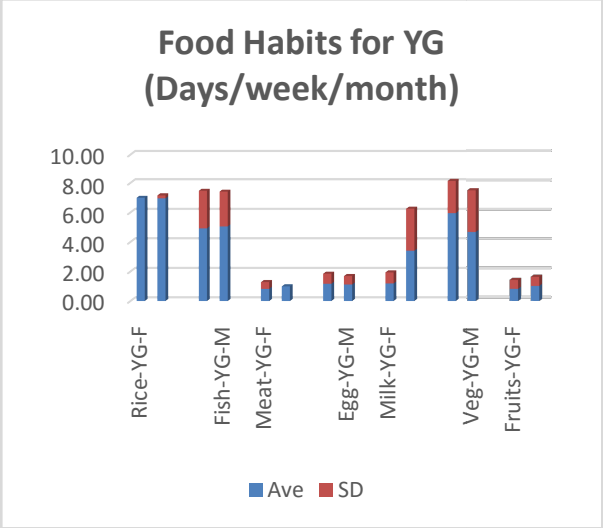


Figure 14. The food habitsofYG people

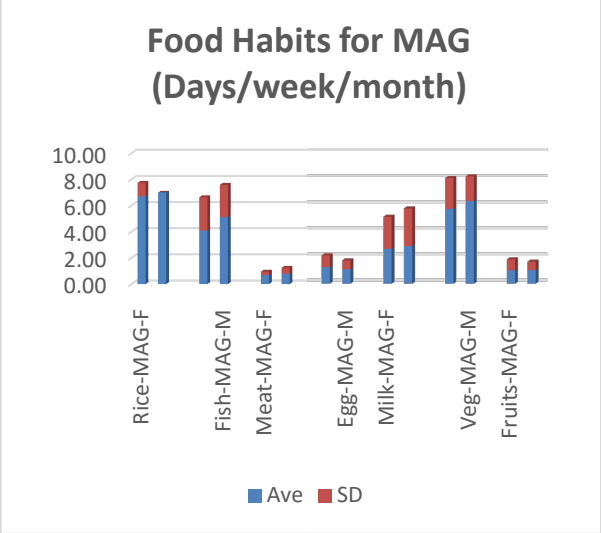


Figure 15. The food habits of MAG people

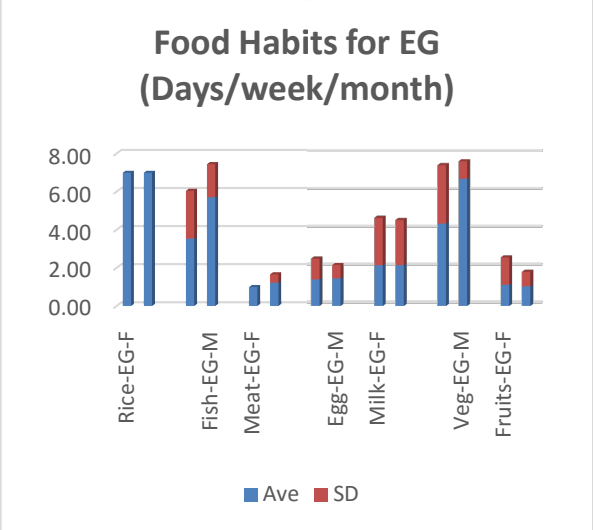


Figure 16. The food habits of EG people

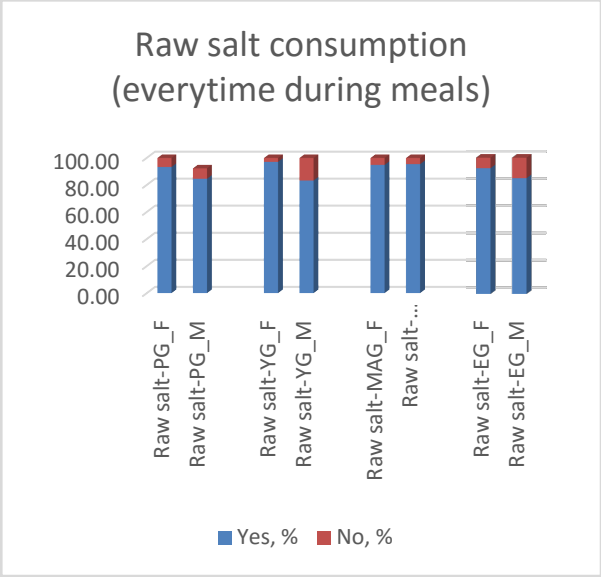


Figure 17. Raw salt consumption status among the different age groups of these people

COVID 19 Vaccination Program

Almost 100% participants were vaccinated except the pediatric group (PG),and vaccination status is reported in Table 8 and Figs 18-33. From the PG, around 27% and 8% of females and males were vaccinated, respectively. Most of the participants from YG, MAG, and EG received both doses 1 & 2. The 73% of females and 81% of males of elderly group participants were received doses 1 & 2, but 27% of females and 19% of males received booster doses.

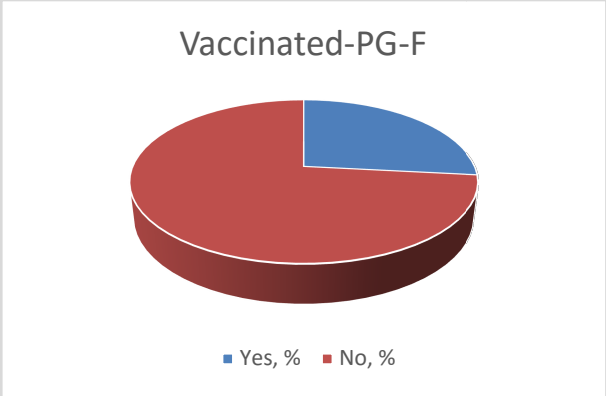


Figure 18. Vaccination status of PG-F people

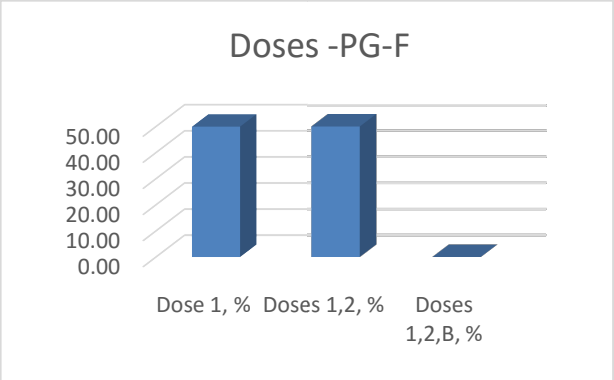


Figure 19. Doses status of PG-F people

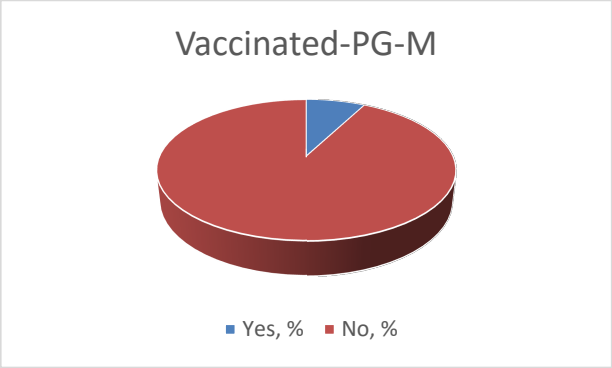


Figure 20. Vaccination status of PG-M people

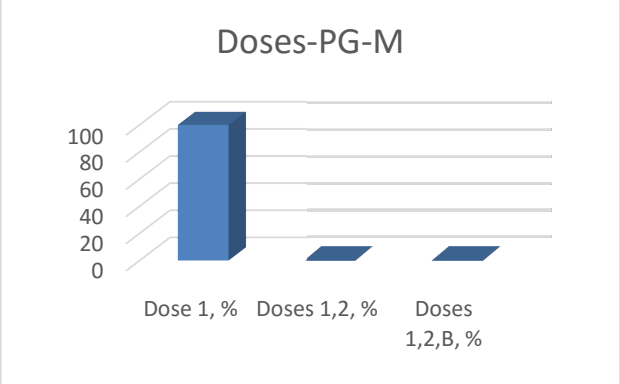


Figure 21. Doses status of PG-M people

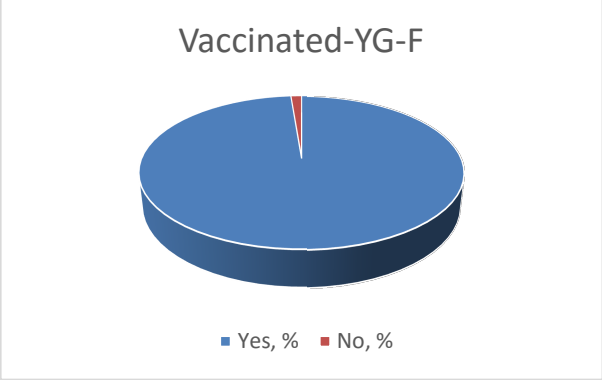


Figure 22. Vaccination status of YG-F people

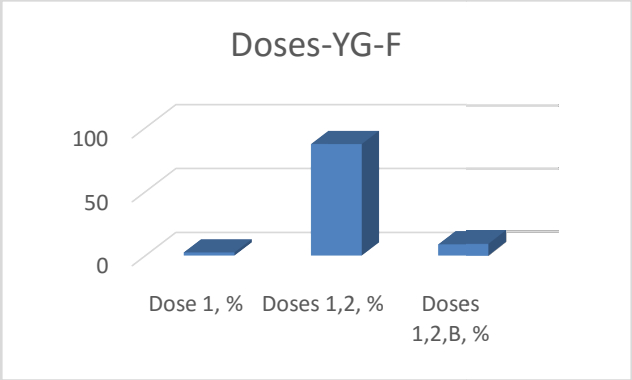


Figure 23. Doses status of YG-F people

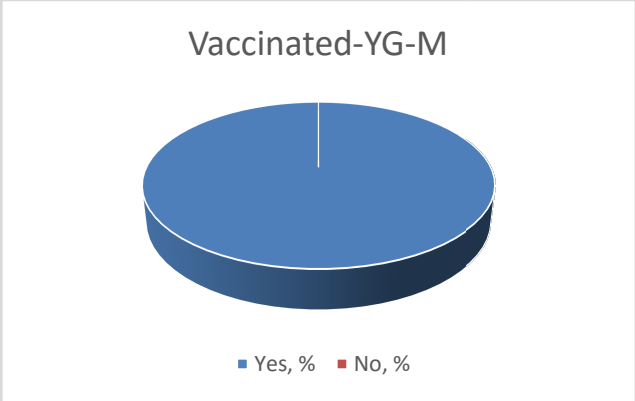


Figure 24. Vaccination status of YG-M people

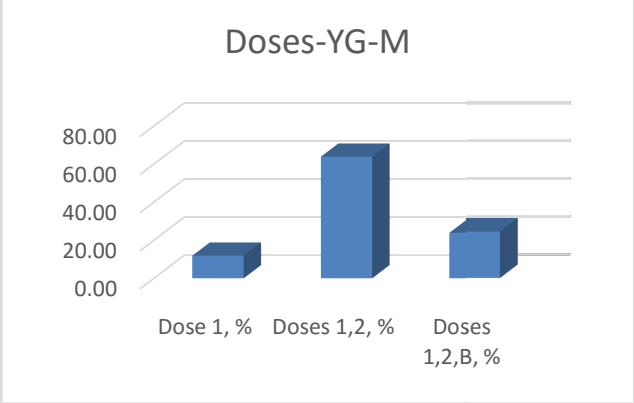


Figure 25. Doses status of YG-M people

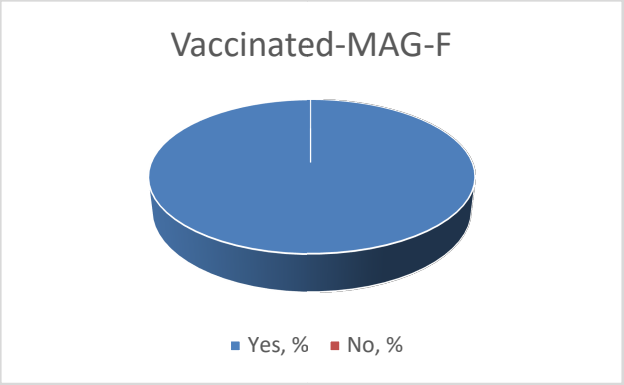


Figure 26. Vaccination status of MAG-F people

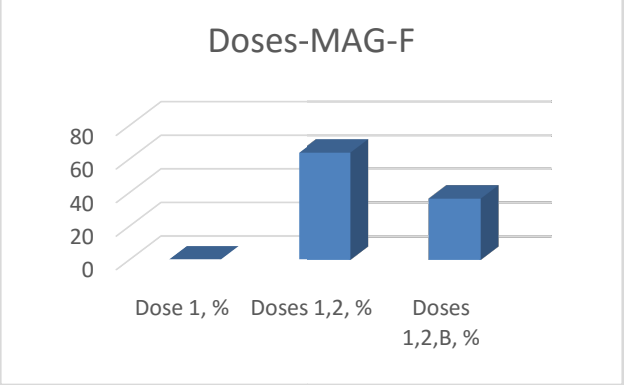


Figure 27. Doses status of MAG-F people

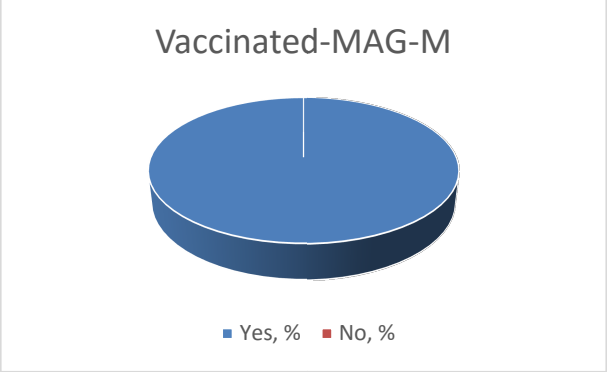


Figure 28. Vaccination status of MAG-M people

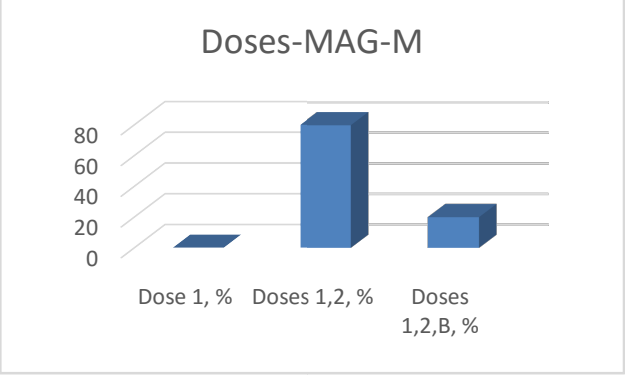


Figure 29. Doses status **of** MAG-M people

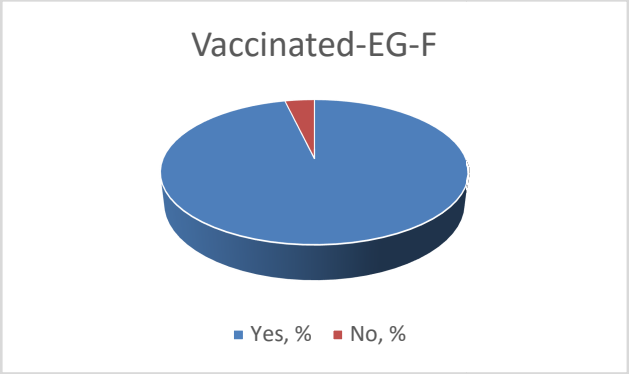


Figure 30. Vaccination status of EG-F people

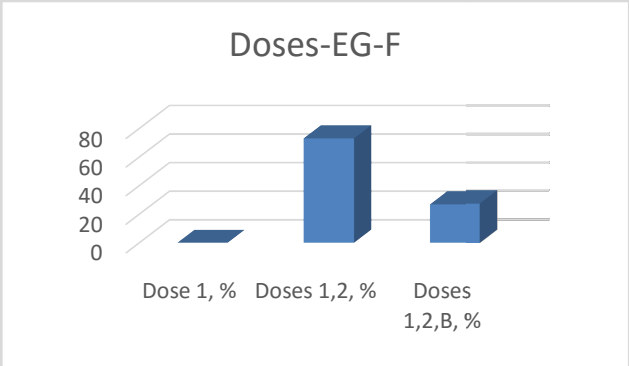


Figure 31. Doses status of EG-F people

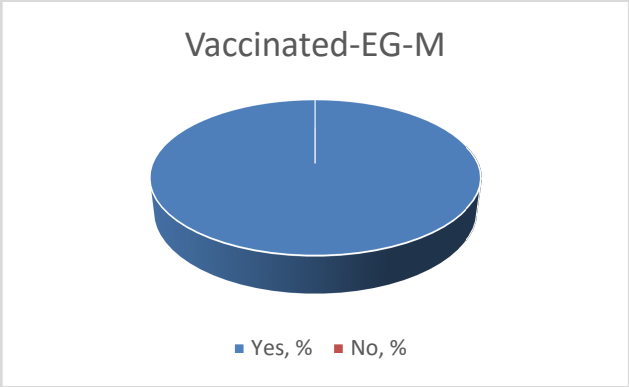


Figure 32. Vaccination status of EG-M people

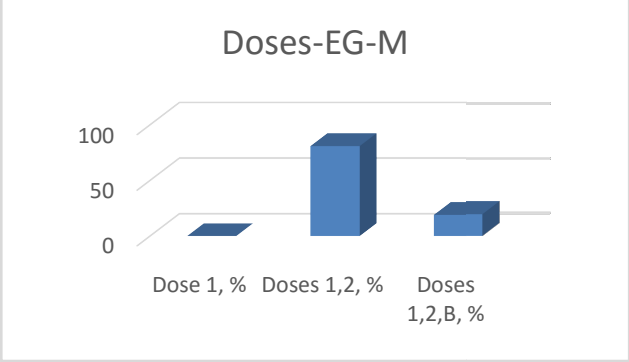


Figure33. Doses status of EG-M people

Medication status of the participants

The medication status of the participants is reported in Table 9 and Figs 34-36. In PG participants, 33% of females are taking medicine, but for males, it is only 15% of them.In both YG and MAG people that participated in this program, 64% vs. 56% in YG and 48% vs. 37% in MAG for males vs females are taking medicine, respectively.The percentage of medication for females and malesin EG are 73% and 72%, respectively.

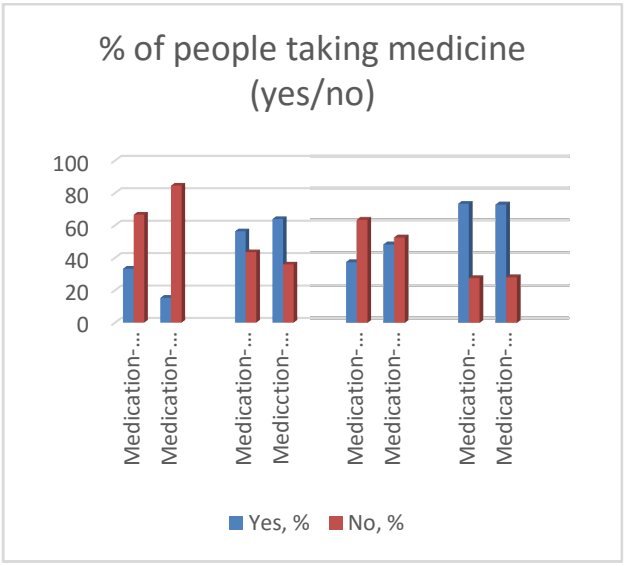


Figure 34. The percent of people in different age groups that are taking medicine in the villages of Ramshil union parishad, Kotalipara, Gopalganj, Bangladesh

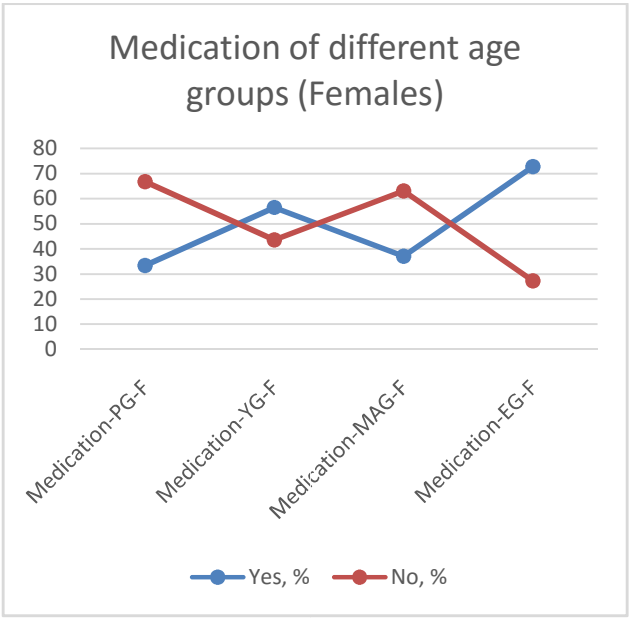


Figure 35. The percent of females in different age groups that are taking medicine in the villages of Ramshil union, Kotalipara, Gopalganj, Bangladesh

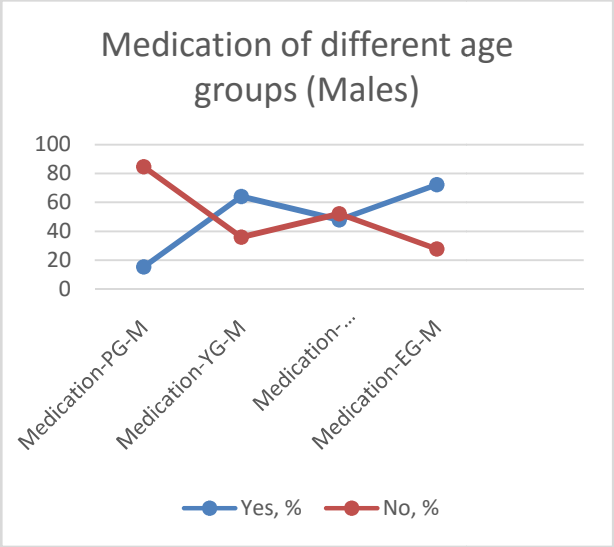


Figure 36. The percent of males in different age groups that are taking medicine in the villages of Ramshil union, Kotalipara, Gopalganj, Bangladesh

Participants' comments about this Health Program

Hundred percent of theseparticipants liked this health program and suggestedto continue this program in future (Table 10 and Figs 37-39). However, they voted forimproving the management and be more organized in future programs (Table 10 and Fig 39).

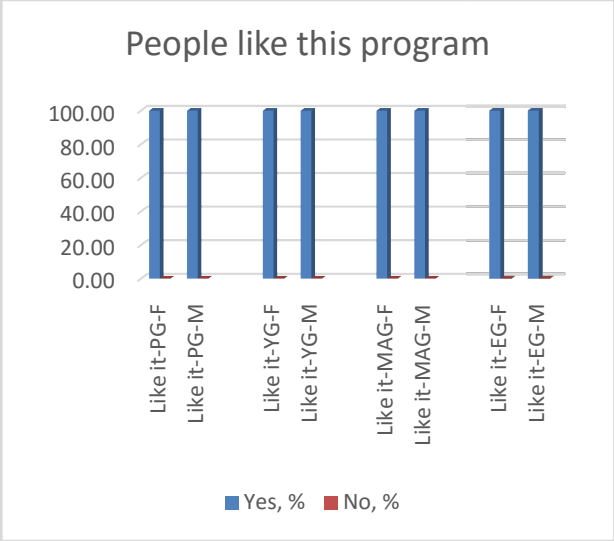


Figure 37. The percentage of peoplein the different age groups "liked this program"

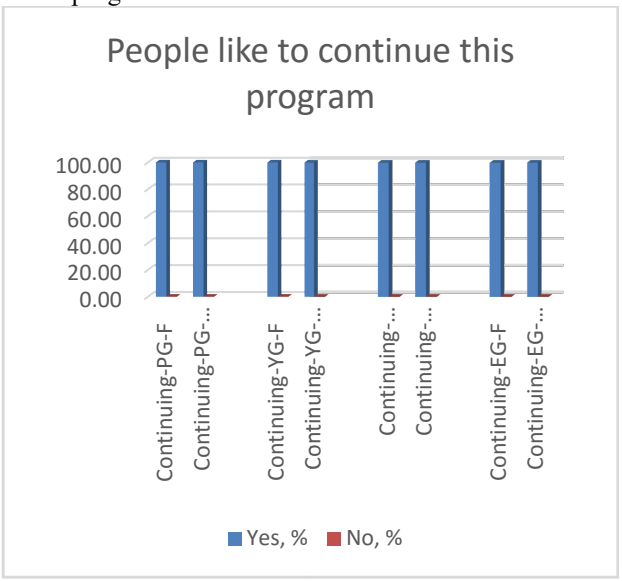


Figure 38. The percentage of people in the differentage groups that "wanted to continue this program in future"

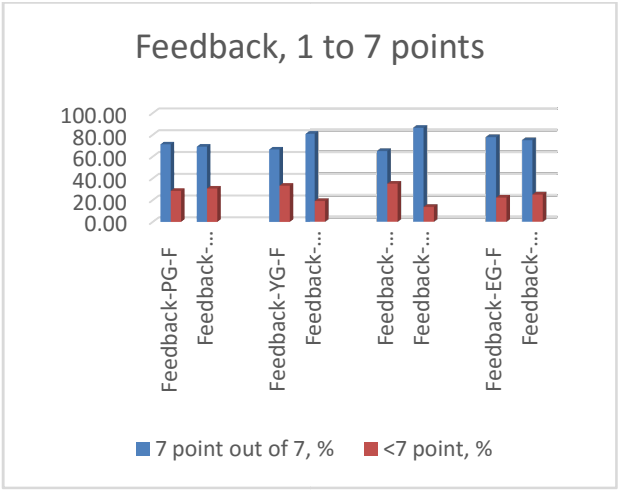


Figure39. The different age groups people that "graded/votedfor the quality of the managementof this program"(7 points is max.)

Table 1. Four different groups based on ages participated in this health program

	Pediatric group (>0 to 14 years)	**Young group (15 to 47 years)**	**Middle age group (48 to 63 years)**	**Elderly group (≥64 years)**
Females (n=166)	7.77±4.03 (n=15) (2.5 to 14 years)	34.53±8.97 (n=80) (15.0 to 45 years)	55.70±4.27 (n=44) (48.0 to 63 years)	70.37±6.41 (n=27) (65.0 to 90 years)
Males (n=87)	7.54±3.15 (n=13) (2.0 to 11 years)	35.04±9.81 (n=26) (16.0 to 45 years)	57.21±5.04 (n=27) (48.0 to 63 years)	69.38±6.26 (n=21) (65.0 to 86 years)

Table 2. Maritalstatus of the participants in this program.

	Pediatric group (PG)		**Young group (YG)**		**Middle age group (MAG)**		**Elderly group (EG)**	
	Ma	**Un-Ma**	**Ma**	**Un-Ma**	**Ma**	**Un-Ma**	**Ma**	**Un-Ma**
Females (F)	0%	100%	88.75%	11.25%	100%	0%	100%	0%
Males (M)	0%	100%	69.23%	30.77%	100%	0%	100%	0%

Table 3. Occupational status in different age groups

	Pediatric group %		**Young group %**				**Middle age group %**			**Elderly Group %**	
	Student	**Child**	**Student**	**HW**	**Farm**	**Other**	**HW**	**Farm**	**Other**	**HW**	**Farm**
Females	66.7	33.3	10.0	88.7	1.3	-	100	-	-	100	-
Males	61.5	38.5	30.7	-	55.8	13.5	-	92.3	7.7	-	100
Child=< 5 years old, HW= Housewife; Farm=Farmer; Other=Driver/business/job											

Table 4. The major health problems among the different age groups in these villages

	Diabetic☨ problem	Diabetic☥ problem	Blood☨ pressure	Blood☥ pressure	Asthma☨ problem	Asthma☥ problem	Heart☨ problem	Heart☥ problem	Lung☨ problem	Lung☥ problem
PG, %	0	0	0	0	20	64	6.67	0	20	0
YG, %	2.5	3.85	40	26.92	57.50	53.85	17.50	23.08	5	23.08
MAG, %	4.55	0	43.18	37.04	50	66.67	31.82	33.33	4.44	11.11
EG, %	11.11	0	59.26	47.62	14.81	66.67	14.81	23.81	18.52	19.05
☨ = female and ☥ = male										

Table 5. The other health problems among the different age groups in these villages

	Pediatric group	**Young group**	**Middle age group**	**Elderly group**

	F (%)	M (%)	F (%)	M (%)	F (%)	M (%)	F (%)	M (%)
Weakness	33.3	15.4	53.9	41.7	58.1	50.0	55.6	55.0
Fever	26.7	7.7	23.1	12.5	11.6	8.3	18.5	12.5
Sore throat	20.0	0	20.5	4.2	18.6	4.2	11.1	10.0
Headache	20.0	0	44.9	4.2	51.2	33.3	51.9	30.0
Muscle pain	20.0	0	38.5	16.7	27.9	45.8	48.2	30.0
Muscle cramp	6.7	0	16.7	4.2	20.9	16.7	14.8	5.0
Joint pain	6.7	0	38.5	33.3	43.5	50.0	44.4	40.0
Chest pain	6.7	0	32.1	37.5	37.2	25.0	25.9	25.0
Back pain	6.7	0	42.3	8.3	51.2	50.0	55.6	40.0
Blurred vision	6.7	7.7	37.2	16.7	41.9	20.8	59.3	35.0
Abdominal pain	6.7	7.7	23.1	0	18.6	25.0	11.1	10.0
Vertigo	0	7.7	14.1	12.5	23.3	12.5	22.2	25.0
Depression	0	0	23.1	20.8	27.9	16.7	18.5	20.0
Restlessness	0	0	20.5	16.7	14.0	8.3	18.5	0

Table 6. Patients' smoking and drinking habits among the different age groups in these villages

	Smoking		**Betel leaf-nut**		**Alcohol/Drink**		**Tobacco**	
	F (%)	M (%)	F (%)	M (%)	F (%)	M (%)	F (%)	M (%)
Pediatric group (PG)	0	0	0	0	0	0	0	0
Young group (YG)	2.5	30.8	22.5	7.7	0	0	25.0	15.4
Middle age group (MAG)	2.7	51.6	38.6	11.1	0	0	75.0	14.8
Elderly group (EG)	3.7	52.4	59.3	19.1	0	0	60.7	28.6

F= female and M = male

Table 7. The food habits of the villagers in the Ramshil union parishad of Gopalganj district, Bangladesh

Age groups		**Rice**	**Fish**	**Meat**	**Egg**	**Milk**	**Veg.**	**Fruit**	**Vol. of H_2O**
		(Days/ Week)	**(Days/ Week)**	**(Days/ Month)**	**(Days/ Month)**	**(Days/ Month)**	**(Days/ Week)**	**(Days/ Month)**	**(*Glass/ day)**
PG-F	Ave	7.00	5.47	0.75	3.50	4.40	6.54	1.12	4.36
	SD	0.00	2.64	0.26	2.75	3.05	1.20	1.10	1.08
PG-M	Ave	7.00	5.67	1.18	4.86	3.36	6.00	1.45	6.79
	SD	0.00	2.02	0.56	2.55	2.99	1.79	1.23	1.32
YG-F	Ave	7.00	4.93	0.83	1.18	1.20	5.96	0.82	6.66
	SD	0.00	2.55	0.46	0.68	0.75	2.18	0.61	1.46
YG-M	Ave	6.96	5.06	1.00	1.13	3.42	4.70	1.03	6.12
	SD	0.20	2.36	0.00	0.58	2.84	2.84	0.62	1.53
MAG-F	Ave	6.73	4.10	0.71	1.28	2.68	5.74	1.03	4.77
	SD	1.02	2.54	0.25	0.89	2.45	2.36	0.83	2.05
MAG-M	Ave	7.00	5.13	0.80	1.10	2.89	6.35	1.05	6.54
	SD	0.00	2.46	0.45	0.68	2.88	1.89	0.63	1.35
EG-F	Ave	7.77	3.54	1.00	1.40	2.15	4.34	1.12	6.88
	SD	0.00	2.51	0.00	1.09	2.50	3.08	1.43	1.39
EG-M	Ave	7.00	5.71	1.23	1.45	2.15	6.70	1.03	6.00
	SD	0.00	1.74	0.44	0.71	2.37	0.92	0.76	1.55

* 1 glass = 300 ml (approx.)

Table 8. The vaccination status among the people that participated in this program								
Vaccinated	**PG-F**	**PG-M**	**YG-F**	**YG-M**	**MAG-F**	**MAG-M**	**EG-F**	**EG-M**
Yes, %	26.67	7.69	98.73	100	100	100	96.30	100
No, %	73.33	92.31	1.27	0	0	0	3.70	0
Doses, %								
Dose 1, %	50	100	2.53	12	0	0	0	0
Doses 1 & 2, %	50	0	88.61	64.00	63.64	80.00	73.08	80.95
Doses 1, 2, & Booster, %	0	0	8.86	24.00	36.36	20.00	26.92	19.05

Table 9. Medication status among the different age groups in these villages				
	Medication-PG-F	**Medication-YG-F**	**Medication-MAG-F**	**Medication-EG-F**
Yes, %	33.33	56.45	37.04	72.73
No, %	66.67	43.55	62.96	27.27
	Medication-PG-M	**Medication-YG-M**	**Medication-MAG-M**	**Medication-EG-M**
Yes, %	15.38	64.00	47.83	72.22
No, %	84.62	36.00	52.17	27.78

Table 10. The people's opinion about this health program								
Do you like this program?								
	PG-F	**PG-M**	**YG-F**	**YG-M**	**MAG-F**	**MAG-F**	**EG-F**	**EG-M**
Yes, %	100	100	100	100	100	100	100	100
No, %	0	0	0	0	0	0	0	0
Do you want to continue this program in future?								
Yes, %	100	100	100	100	100	100	100	100
No, %	0	0	0	0	0	0	0	0
How was the program managed/organized (max. point 7)?								
7 points out of 7, %	71.43	69.23	66.67	80.95	65.00	86.36	77.78	75.00
< 7 points, %	28.57	30.77	33.33	19.05	35.00	13.64	22.22	25.00
Average	6.21	6.08	5.79	6.81	6.03	6.41	6.48	6.25
SD	1.48	1.61	2.11	0.51	1.82	1.76	1.19	1.65

Discussion

The daily lifestyleof the villagersand the rural communication have improved a lot comparing to 15-20 years beforein Bangladesh. The people are not too worried about their food that they eat three times a day. A lot of people lead their urban life in the village now. However, they need a morebalanceddiet, nutrition foods, and improve their health education/knowledge.

Most of the rich/educated people did not participate in this health camp because they have the capacity to visit a MBBS doctor in a chamber/hospital/clinic in the urban/city and get better treatment from there.However, we are talking about the ~70% people who live in villages and don't have enough capacity to visit a doctor and get better treatment from urban.

The Union Parishad (UP) is the lowest level of public administration in Bangladesh and plays an important role in rural development. One of its responsibilities is providing healthcare facilities to the rural population, but there is limited infrastructure and a lack of healthcare professionals in rural areas.

There is a Health & Family Welfare Centre at Ramshil Union and five community clinics in different villages. Welfare centers offer general health services and child health care services free of charge for people in the villages. Community Clinics are run by the government, but rural women are not aware of their existence and most villagers prefer to consult with a local village doctor, without any formal healthcare training.

The facilities and support provided by both the government and private/NGO providers, rural healthcare in

Bangladesh is insufficient for a purpose. For everymillion people, there are ~241 physicians, ~136 registered nurses, and ~10 hospitals (making the availability of hospital beds one for 4000 people).

The available literature[2] suggests that health security for rural people in Bangladesh is low quality by the lack of physicians, employees, and nurses,' and misdiagnoses, negligence towards patients, irresponsibility, absenteeism, and a lack of professional ethics. Although most of the country's population (~70%) live in rural areas, most MBBS doctors are based in urban areas (cities and towns areas). Doctors are not interested in serving in the villages due to the absence of proper infrastructure, accommodation, quality of education, transportation facilities, lack of career prospects, and less opportunity for private practices.

Health is a basic requirement to improve the quality of life, and the economy of the country also depends on the status of a country's health facilities. Therefore, Health Camp, Eye Camp, Dental Camp, Mini Moving Hospital, Workshop,Seminar, etc. at the rural level could helpto improve villagers' health and health knowledge/awareness, and that would help for improving country's economy.

The organizer from the Upendra Nath Chowdhury Trust (UNCTrust) had organized a health campin May 2022 in a village of Kotalipara, Gopalganj, Bangladesh.The MBBS doctors, nurses, paramedics including almost 30 volunteers were served at the health camp willingly. Two hundred fifty-three (253) people (166 females and 87 males; from ages 2 to 90 years old) got their treatment and medicine, in the Ramshil union Health Camp program. There were four different groups based on their ages: I. Pediatric Group, PG (> 0 to 14 years); II. Young Group, YG (15 to 47 years); III. Middle Age Group, MAG (48 to 63 years); and IV. Elderly Group, EG (≥64 years) people. Almost 100% of them from YG,MAG, and EG participants were housewivesor farmers, and they were poorly educated.

Major Health problems

The major health problems of the participants in this program were asthma, blood pressure, and heart problems. In each group, there are a lot of people suffering due to asthma problems. Even though pediatric group(PG) kids are also suffering. The males are suffering more than the females with this disease. In PG, 20% females but 64% males; YG, 57% females and 54% males; MAG, 50% females and 67% males; and EG, 14.81% females and 67% males are suffering due to asthma problems. Is it possible that most of them were exposed to COVID-19 even though they don't know and had not suffered seriously?

The next major health problem of these people is blood pressure. There were 40% females & 27% males in YG, 43% females & 37% males in MAG, and 59% females & 47% males in EG are suffering with blood pressure in our study groups people. According to the latest WHO data published in 2020, Hypertension Deaths in Bangladesh reached 14,776 or 2.06% of total deaths. The age adjusted death rate is 13.27 per 100,000 of population ranks Bangladesh #114 in the world[3].Heart problem is also a concern of these people, and males are suffering more than females with this health problem. In MAG, almost 33% in both females and males had reported about their heart problem. Coronary Heart Disease Deaths in Bangladesh reached 108,528 or 15.16% of total deaths. The age adjusted death rate is 94.27 per 100,000 of population ranks Bangladesh #118 in the world.[4]

Diabetes is a serious health problem all over the world. The IDF (International Diabetes Federation) data published in 2020, there are 537 million people living with diabetes[5]. It is projected that by 2045, 700 million people will have the diseases worldwide[5]. Bangladesh was ranked as the 8th highest diabetic populous country in the period of 2010-2011. About 129,000 deaths were attributed to diabetes in Bangladesh in 2015, as reported by leading research organization ICDDR, B (International Center for Diarrheal Research, Bangladesh).[6]The International Diabetes Federation (IDF)also reported that approximately 75–80% of people with diabetes die due to cardiovascular complications.

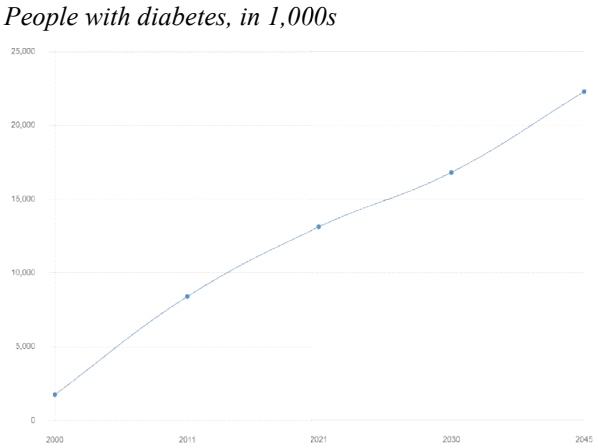


Figure 40. IDF Diabetes Atlas for Bangladesh[5]. Source: IDF Report (10th edition, 2021)[5]

According to our survey from the health camp participants, females are reported more than males with diabetes. The elderly group (EG; specially females) has a significantly higher percentage (11%) of diabetic patients compared to other age groups. The data shows that there is a positive correlation with age.It was reported that a smaller percentage of people are suffering with this disease, but it must be surveyed properly and find the real picture of this disease in the rural areas of Bangladesh where more than 70% of total population live.

Diabetes complications,most reported health effects were vision impairments or blindness (more than 60%), followed by

poor wound healing (nearly 30 %) and dizziness (nearly 30%). In examining comorbidities, hypertension was most commonly self-reported in 50% (approx.) out of 220 participants of diabetes clinics in Mirzapur, Bangladesh[7]. In BIRDEM 2010, 75% of the 130 patients suffered co-morbidity, including retinopathy (35%), CVD (20%), neuropathy (15%) and diabetic foot (4%). More than half (57%) of were hypertensive and on antihypertensive drugs[8].

Other health problems

The other most common illnesses are weakness, headache, muscle pain, joint pain, chest pain, back pain, and blurred vision. There were 33% vs. 15% in PG, 54% vs. 42% in YG, 58% vs. 50% in MAG, and 56% vs. 55% in EG, females vs. males reported their weaknesses, respectively. The females were feeling more weaknesses than males in this study population. The percentage of headache illnesses were reported 20% vs. 0% in PG, 50% vs. 4% in YG, 51% vs. 33% in MAG and 52% vs. 30% in EG among the females vs. males, respectively. The females were also suffering significantly more than males with headache illnesses. In males, the significantly high percentage of the people were reported their muscle pain, joint pain, back pain illnesses in MAG (46%, 50%, and 50%) comparing other males' groups (YG (17%, 33%, and 8%) and EG (30%, 40%, 40%)), respectively. The lowest percentage of females were reported their muscle pain illnesses in MAG (28%) comparing other females' groups, YG (39%) and EG (48%)). In females, joint pain and back pain illnesses were reported lowest in YG (38% and 42%, respectively) but these illnesses were reported higher and almost the same percentage among the MAG (44% and 51%) and EG (44% and 56%) participants, respectively. There is another important health problem like blurred vision illness for people in these villages. This illness was increased as the ages increased (37% vs 17%, 42% vs. 21%, and 59% vs. 35% for females vs. males in YG, MAG, EG, respectively) and females are suffering significantly more comparing males. Theweakness is the main health problem among the PGparticipants. They are also suffering with sore throat, headache, and muscle pain illnesses. It is important to improve theirhealth,education, and awareness. The health camp, seminar and workshops could help with such education.

Smoking and alcohol drinking status

Theydon't have smoking and drinking habits among the pediatric group. However, these habits increased as the ages increased. The females were reported to smoke less comparing to males and these are 3% vs. 31%, 3% vs. 52%, and 4% vs. 52% among the YG, MAG, and EG, respectively. They don't drink any kind of alcohol.It was found that alcohol users in Bangladesh are generally male that live in urban areasand are likely to be smokers[9].Smoking causes about 25% of all deaths in Bangladeshi men aged 25 to 69 years and an average loss of seven years of life per smoker[10].

Foods habits

The most common foods for these villagers are rice, fish, and vegetables. They are eating rice 3 times a day for seven days a week. On average, they eat fish and vegetables almost five days per week. Meat and fruits are very rare for them. Pediatric group children eat egg and drink milk more frequently compared with other age groups people. These people drink almost 1200 ml to 1800 ml of water per day andhere are more than 80% of people taking raw salt during their meal every time.They must reduce their sources of carbohydrates and raw salt consumption/intake immediately. Again, the seminar and workshops could help with such education.

COVID-19 vaccination status

Almost 100% participants were vaccinated except pediatric group (PG). From the PG, around 27% and 8% of females and males were vaccinated, respectively. Most of the participants from YG, MAG, and EG received both doses 1 & 2. The females of young group (YG)received doses 1 & 2 more than males (87% vs. 64%, respectively), but males received more booster doses compared to females of the same age group (24% vs 9%, respectively). On the other hand, it was reversed for MAG people. In MAG people, females' participants received doses 1 & 2 less than males (64% vs. 80%, respectively), but females received more booster doses compared to males of this same age group (36% vs. 20%, respectively). The 73% of females and 81% of males of elderly group participants were received doses 1 & 2, but 27% of females and 19% of males received booster doses. This means that more percent of females received booster doses compared to males in both MAG and EG.

The WHO has set a target to vaccinate 70 percent of the global population with a two-dose regimen by the middle of 2022. As of April 6, Bangladesh has administered one dose of the Covid-19 vaccine to 75.25 percent of the population, two doses to 67.37 percent, and three doses (booster) to 9.10 percent[11]. The Bangladesh Government has been doing a great job to save his people from COVID-19. May be educational status (their children/young generation) helps a lot for improving their awareness.

Medication

In PG participants,the percentage of females (33%) taking medicine is much higher compared to males (15%). However, the percent of males taking medicine is much more compared to females in both YG and MAG people participated in this program (64% vs. 56% in YG and 48% vs. 37% in MAG for males vs females, respectively). The percentage of elderly group participants in both females (73%) and males (72%) taking medicine is the highest compared to all other age groups.

Conclusion

A health camp is a very useful program to learn the health status of the people at the root level and with this event we could also improve their health awareness. The organizer from the "Upendra Nath Chowdhury Trust (UNCTrust)" will

organize Health Camp/Eye Camp, and Workshop/Seminar once a year now which will help with improving health and education of the villagers in future.

Acknowledgement

The authors want to dedicate thispaper to the memory of Audhor Chowdhury, Ainna Moti Chowdhury, Upendra Nath Chowdhury, Bisweswer Chowdhury, Chopala Chowdhury, Anil Chowdhury, Anjali Chowdhury Bain, and Unmesh Chowdhury.

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(Note: We are very sorry that we could not include all your names here because we don't know your names, but we are very grateful and appreciateall your support and help.)

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