Supplementary Appendix

Supplementary Appendix 1. Sample size calculation

For the survey, the following formula was used to calculate the sample size:

$$n = Z^2 \times p\,(1 - p) \div d^2$$

wherein,

n = the required sample size (respondents/households).

p = the proportion of vaccine hesitancy in rural Bangladesh, which is approximately 35% according to a recent study (1).

d = degree of accuracy desired, which is set at 3%.

$Z\frac{1-\alpha}{2}$ = the standard normal deviation value, which is usually set at 1.96 to maintain a 95% confidence level for the estimated prevalence of vaccine hesitancy.

The above calculation indicated the sample size required was 971. Considering the nationwide generalisability and socio-demographic heterogeneity of the population, the sample size was multiplied by the design effect of 1.5 (2) to adjust sampling variance related to the multi-stage study design (3). This resulted in a sample size of 1,457. Additionally, a 5% non-sampling error was applied, and the final sample size was determined to be 1,533 participants/households to approach for participation.

Supplementary Appendix 2. Training for data collectors and pilot study

Two support persons and five interviewers were appointed for data collection. The support persons originated from the local area of data collection site. Their roles were to help the team navigate the area and build rapport with the local residents. The interviewers had a minimum of graduate level degree and have had previous data collection experience. One of the interviewers was a registered medical nurse. The primary investigator organised a one-week online workshop via Zoom for the interviewers to be familiarised with the aim of the study and content of the questionnaires. The medical nurse was trained to conduct anthropometric and blood pressure measurements and for COVID-19 risk management.

Mock interviews were conducted to ensure full comprehension of relevant data collection techniques and proper conduct in difficult situations. Corrections were made following the mock interviews as appropriate. Thereafter, the interviewers were assigned a designated area to proceed with data collection. Data collectors were also trained to carry out study procedures under COVID-safe protocols. This included mask-wearing, collecting data from participants in a well-ventilated area, physical distancing of 1.5 meters, and using hand sanitizers before and after every procedure.

A pilot study was initially conducted on 24 participants from the selected sampling area to check the acceptability and feasibility of the questionnaire and the average time required for completion. No major amendments were made to the questionnaire.

Supplementary Appendix 3. Quality control of data collection

To ensure that the quality of the study is maintained, data collection and management processes were regularly monitored by the two local study investigators. The investigators also carried out a random consistency check for at least 5% of the interviewed questionnaires to ensure all the details in the questionnaires have been correctly undertaken.

Supplementary Appendix 4. Data access and storage

During the study period, the data was collected, managed and securely stored in REDCap. The data was also exported to Google spreadsheets and saved in a secure university-allocated network storage (Monash University (S:) shared drive) as a backup. Only the research team (chief

investigator and co-investigators) had access to these password-protected electronic databases. The data will be stored in both REDCap and Monash (S:) drive for 5 years as per Monash University data retention policy, after which it will be permanently deleted.

Supplementary Appendix 5. Operational definitions

BMI was calculated and classified as follows: <18.50 kg/m^2 for underweight, 18.50 to 22.99 kg/m^2 for normal (used as reference variable), 23.00 to 27.49 kg/m^2 for overweight and ≥27.50 kg/m^2 for obese (4, 5). A high waist-to-hip ratio was defined as >0.90 for men and >0.85 for women (4, 6). Hypertension was defined as either a documented diagnosis of hypertension, taking of antihypertensive medications or a further two high blood pressure readings in 3-day intervals during the study period (i.e., if systolic blood pressure measurement was ≥140 mmHg and/or diastolic blood pressure measurement was ≥90 mmHg) (7). The presence of anxiety and depression was defined as a score of five or more using the GAD-7 scale (8) and PHQ-9 (9) respectively.

Supplementary Appendix 5. Additional analysis output

Table S1. Univariable logistic regression of demographic, lifestyle and clinical correlates and COVID-19 vaccine acceptance and uptake in rural Bangladesh

Variable	**Vaccine acceptance**		**Received COVID-19 vaccine**	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Demographics				
Gender (ref: Male)				
Female	**2.3 (1.4 - 3.7)**	**0.001**	1.0 (0.8 - 1.2)	0.822
Age groups (ref: <30 years)				
30 - 50 years	**4.7 (2.8 - 7.9)**	**<0.001**	**3.3 (2.5 - 4.3)**	**<0.001**
>50 years	**3.4 (1.9 - 6.1)**	**<0.001**	**4.9 (3.6 - 6.7)**	**<0.001**
Marital status (ref: Not married)				
Married	**4.9 (2.8 - 8.9)**	**<0.001**	**4.8 (2.8 - 8.1)**	**<0.001**
Others	**5.5 (1.8 - 17.0)**	**0.003**	**6.1 (3.2 - 11.8)**	**<0.001**
Education level (ref: Illiterate)				
Primary	0.9 (0.5 - 1.8)	0.833	1.0 (0.8 - 1.3)	0.943
Secondary	0.6 (0.3 - 1.0)	0.061	**0.8 (0.6 - 1.0)**	**0.046**
Undergraduate and above	0.8 (0.3 - 2.3)	0.622	**0.6 (0.4 - 0.9)**	**0.022**
Employment status (ref: Unemployed)				
Employed	1.1 (0.5 - 2.6)	0.742	**0.5 (0.3 - 0.8)**	**0.002**
Housewife	2.3 (1.0 - 5.6)	0.063	**0.5 (0.3 - 0.7)**	**0.001**
Others	**0.3 (0.1 - 0.8)**	**0.016**	**0.1 (0.0 - 0.2)**	**<0.001**
Anthropometric and lifestyle behaviour				

BMI (kg/m²) (ref: Normal)				
Underweight	2.3 (0.9 - 5.8)	0.088	1.0 (0.7 - 1.5)	0.941
Overweight	**2.3 (1.4 - 3.9)**	**0.002**	**1.5 (1.2 - 1.8)**	**0.002**
Obese	**2.8 (1.4 - 5.5)**	**0.005**	**1.5 (1.2 - 2.0)**	**0.003**
Smoking history (ref: Non smoker)				
Former smoker	0.5 (0.2 - 1.1)	0.100	**1.6 (1.0 - 2.4)**	**0.045**
Current smoker	**0.4 (0.3 - 0.7)**	**0.001**	0.9 (0.7 - 1.2)	0.432
Use of chewing tobacco (ref: Non user)				
Former user	0.5 (0.1 - 1.6)	0.216	1.3 (0.6 - 2.7)	0.463
Current user	0.8 (0.5 - 1.3)	0.330	**1.3 (1.1 - 1.7)**	**0.018**
Clinical conditions				
Have chronic disease (ref: No)				
Yes	**1.9 (1.1 - 3.2)**	**0.030**	**1.5 (1.2 - 1.8)**	**<0.001**
Have anxiety or depression (ref: No)				
Yes	0.8 (0.5-1.2)	0.232	1.0 (0.8-1.3)	0.869
Attitude towards vaccination (in general terms) prior to COVID-19 pandemic				
Aware of benefits of vaccines (ref: No)				
Yes	**2.1 (1.1 - 3.8)**	**0.017**	1.1 (0.8 - 1.6)	0.550
Have been vaccinated previously e.g., for influenza (ref: No)				
Yes	1.5 (0.9 - 2.4)	0.070	**0.7 (0.6 - 0.8)**	**0.001**
Knowledge of COVID-19 vaccination				
Understood dosage (ref: No)				
Yes	**6.4 (3.5 - 11.5)**	**<0.001**	**19.9 (7.2 - 54.8)**	**<0.001**
Familiar with the brands (ref: No)				
Yes	1.2 (0.5 - 2.9)	0.745	**2.3 (1.5 - 3.4)**	**<0.001**

Source of information for COVID-19 vaccination				
Source of information (ref: Others)				
Television	21.4 (1.3 - 347.9)	0.031	-	-
Social media	10.1 (0.6 - 169.3)	0.110	**0.5 (0.3 - 0.7)**	**<0.001**
Relatives or friends	20.4 (1.2 - 335.1)	0.040	1.0 (0.8 - 1.2)	0.600
Availability and potential barriers of getting COVID-19 vaccine				
Understood how to register for COVID-19 vaccine (ref: No)				
Yes	**3.6 (2.1 - 5.9)**	**<0.001**	**3.6 (2.5 - 5.2)**	**<0.001**
Understood where to get the COVID-19 vaccine (ref: No)				
Yes	17.6 (6.2 - 49.9)	<0.001	-	-
Distance from vaccination centre (in km)				
Distance (km)	0.9 (0.9 - 1.0)	0.450	1.0 (1.0 - 1.1)	0.136
Would you take the vaccine if it is no longer free? (ref: No)				
Yes	**3.1 (1.9 - 4.8)**	**<0.001**	1.1 (0.9 - 1.3)	0.493
Influence of previous COVID-19 status				
Have been diagnosed with COVID-19 (ref: No)				
Yes	-	-	0.5 (0.1 - 2.7)	0.423
A close relative or friends have been previously diagnosed with COVID-19 (ref: No)				
Yes	-	-	**5.4 (2.1 - 14.0)**	**0.001**
Influence of personal beliefs				
Do you trust the government regarding information related to COVID-19 vaccine? (ref: No)				
Yes	**6.8 (3.6 - 13.6)**	**<0.001**	**2.9 (1.5 - 5.3)**	**0.001**
Do you trust the health department regarding information related to COVID-19 vaccine? (ref: No)				
Yes	**11.7 (5.7 - 24.1)**	**<0.001**	**2.8 (1.3 - 5.7)**	**0.007**
Do you think pharmaceutical companies developed the vaccine to help society? (ref: No)				
Yes	1.5 (0.9 - 2.4)	0.104	1.0 (0.8 - 1.2)	0.838
Does your religion have any restrictions on getting vaccinated? (ref: No)				

Yes	-	-	0.5 (0.0 - 5.5)	0.572

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