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## Factors influencing COVID-19 vaccine acceptance and hesitancy among pharmacy students in Bangladesh: a cross sectional study

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## Abstract

To assess different factors influencing COVID-19 vaccine acceptance and hesitancy among pharmacy students in Bangladesh an anonymous self-administered questionnaire was deployed online using Google form. Online link was sent to 1090 Bangladeshi university pharmacy students via social media networks or personal emails. Participants clearly understand and consent with the research objectives. Students studying in junior (1st year) to masters, and research degree level have participated in this study. Survey instrument assessed (1) participants socio-demographic profile; (2) COVID-19 vaccine acceptance intention, (3) potential drivers of COVID-19 vaccine

- 1. Study design
- 4. Measures and survey instruments development
- 3. Participant's inclusion criteria
- 2. Settings and participants acceptance and hesitancy, and (4) willingness to pay (WTP) for vaccines.

The study considered p<0.05 as statistically significant cut-point value.

## **Troubleshooting**

1 1. Study design 1.1 An anonymous self-administered questionnaire was deployed online using Google form. 1.2 Data were collected between 15th October, 2021 and 15th December, 2021. 1.3 Online link was sent to 1090 Bangladeshi university pharmacy students via social media networks or personal emails. 1.4 Ethical Review Committee approved this study as exempt. 1.5 There was no external funding for the study. 2 2. Settings and participants 2.1 Currently pharmacy students are studying at public or private university in Bangladesh. 2.2 No clinical experiments were conducted on the subjects and the individual was free to reject participation at any time. 3 3. Participant's inclusion criteria 3.1 Participants clearly understand and consent with the research objectives. 3.2 Willing to provide anonymous data on COVID-19 vaccine and vaccinations.

Pharmacy students of public or private universities in Bangladesh.

3.3



- 3.4 Studying in junior (1st year) to masters, and research degree level.
  - 4 4. Measures and survey instruments development
- 4.1 Potential factors associated with COVID-19 vaccine acceptance and hesitancy has been conceptualized from recent reviews on topics.
- 4.2 Multi-items questionnaire was adopted from theory analysis of the recent studies reflected COVID-19 vaccinations among the various students' sub-groups globally.
- 4.3 Employed 5-point Likert scale: "definitely yes", "yes probably", "unsure", "probably not" and "definitely not" to assess the in-depth intention.
- 4.4 Instrument was developed in bilingually and pre-tested on 20 student pharmacists.
- 4.5 Survey instrument assessed (1) participants socio-demographic profile; (2) COVID-19 vaccine acceptance intention, (3) potential drivers of COVID-19 vaccine
  - 1. Study design
  - 4. Measures and survey instruments development
  - 3. Participant's inclusion criteria
  - 2. Settings and participants acceptance and hesitancy, and (4) willingness to pay (WTP) for vaccines.
- 5 5. Survey administration
- 5.1 Convenience sampling technique was used for systematic data gathering from online survey tools.
- 5.2 The investigators distributed the online questionnaire among pharmacy students in almost all universities and encouraged them to participate in this study.
- 6 6. Study variables
- 6.1 "Vaccine acceptance intent" was the single outcome variable evaluated in binary response (1=Yes, 0=No).

- 6.2 Response for independent variables were dichotomized into (1=Yes, 0=No).
- 6.3 We used one item question to understand WTP and responses were measure by 1=Yes and 0=No scale.
- 7 7. Sample size calculation
- 7.1 For observational studies, a data of minimum of 500 considered the sample size compulsory to conduct binary logistic regression that characterizes the variable parameters.
- 7.2 The survey bars showed receiving any partial data, which ensured collection of complete response.
- 8 8. Statistical analysis
- 8.1 Raw data were inserted into the Microsoft excel (version 10).
- 8.2 Statistical Package of Social Science (SPSS) software IBM-SPSS (version 25) was used for complete data analysis (IBM SPSS Statistics, RRID: SCR\_016479.).
- 8.3 Binary regression analysis was employed to ascertain the association mode between independent variable and outcome variable.
- 8.4 1034 data were finally analyzed to rationalize the study objectives.
- 8.5 The study considered p<0.05 as statistically significant cut-point value.