Effectiveness of Educational Intervention on COVID-19 Vaccine Acceptability Among Healthcare Students of Rural India: A Randomized Controlled Trial

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Background

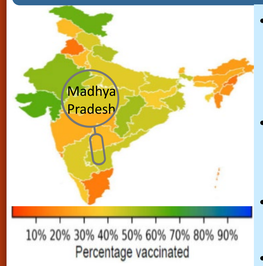


Figure 1, India state-wise vaccination coverage, March 2021

- Misinformation and myths about the COVID-19 vaccine have been widely circulating during the COVID-19 pandemic leading to lower acceptance rates in the rural part of India. (Figure 1) [1]
- As future healthcare providers, healthcare students are expected to promote and administer the COVID-19 vaccine knowledge and counsel vaccine-hesitant patients.
- It is essential to educate healthcare students and increase their COVID-19 vaccine acceptance.
- Studies confirm, that high and ongoing acceptance of the vaccine relies on health care professionals' knowledge attitudes and perceptions toward the vaccine. [2]

- Thus, a successful educational-based strategy is required to increase vaccine acceptance.

Purpose

- Evaluate the effectiveness of an educational intervention to increase COVID-19 vaccine acceptance among rural healthcare students in India.

Method

- Study Design: A randomized controlled trial (Figure 2) performed after the second wave, for 6 months of duration.
- Participants: COVID-19 vaccine hesitant Undergraduate and Postgraduate healthcare students (Medical, Nursing, Pharmacy, other allied health science) from 4 healthcare colleges in the rural part of Madhya Pradesh India.

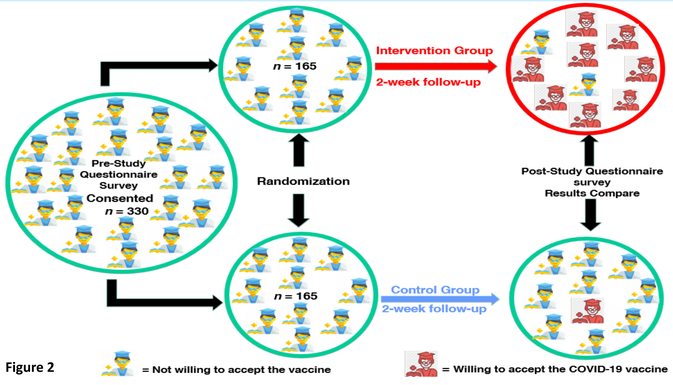
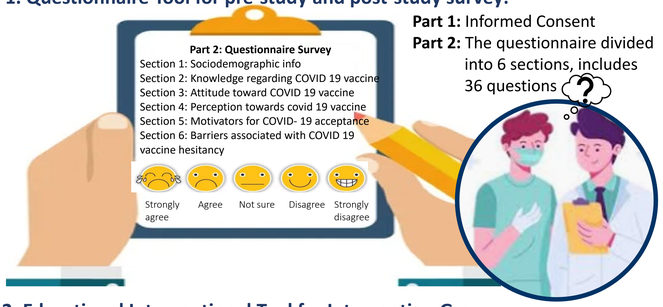


Figure 2

- Outcomes: The primary outcome was COVID-19 vaccine acceptability, and the secondary outcome was COVID-19 vaccine knowledge, attitude, and perception.

Materials

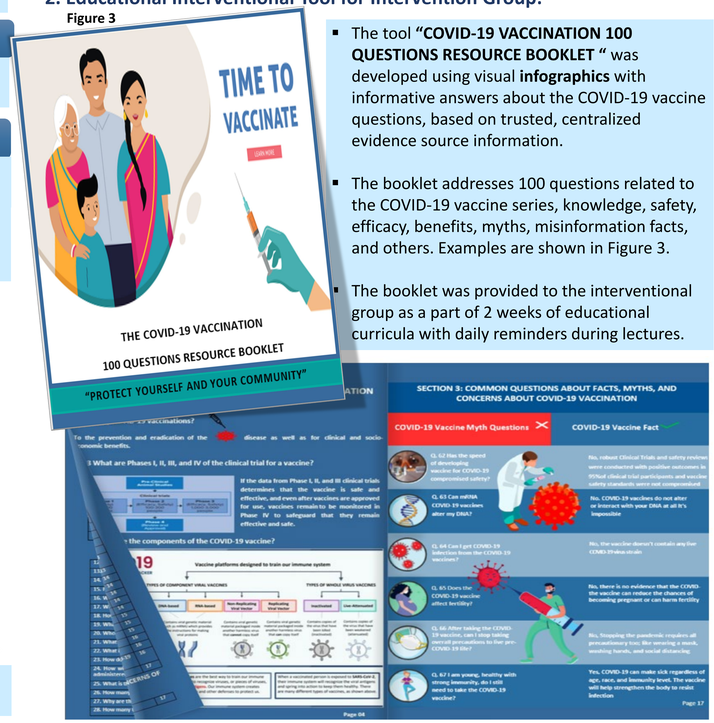
1. Questionnaire Tool for pre-study and post-study survey:



Part 1: Informed Consent
Part 2: The questionnaire divided into 6 sections, includes 36 questions

2. Educational Interventional Tool for Intervention Group:

Figure 3



- The tool **"COVID-19 VACCINATION 100 QUESTIONS RESOURCE BOOKLET "** was developed using visual **infographics** with informative answers about the COVID-19 vaccine questions, based on trusted, centralized evidence source information.
- The booklet addresses 100 questions related to the COVID-19 vaccine series, knowledge, safety, efficacy, benefits, myths, misinformation facts, and others. Examples are shown in Figure 3.
- The booklet was provided to the interventional group as a part of 2 weeks of educational curricula with daily reminders during lectures.

Key Results

- **Summary Bar chart statistics for post-study survey analysis; the difference between Control Group and Intervention Group (Figure 4-9)**

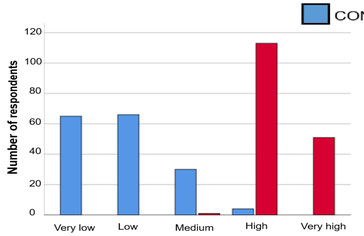


Figure 4 Likelihood of COVID-19 vaccine Acceptance

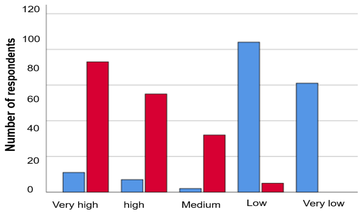


Figure 5 Likelihood of COVID-19 vaccine hesitancy

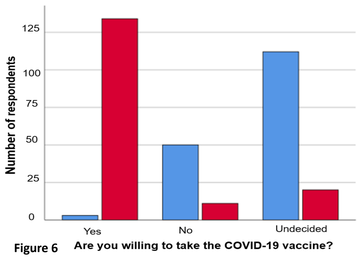


Figure 6 Are you willing to take the COVID-19 vaccine?

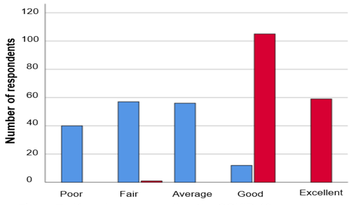


Figure 7 Knowledge regarding the COVID-19 vaccine

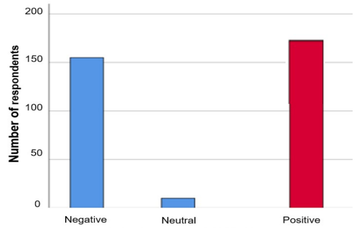


Figure 8 Attitude towards COVID-19 vaccine

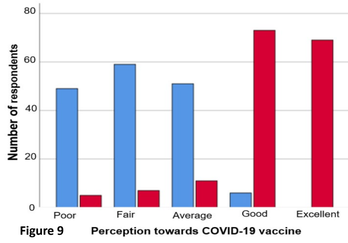


Figure 9 Perception towards COVID-19 vaccine

- **Summary data shows mean interventional effectiveness differences between pre-and post - intervention study group (Table 1)**
- 78.2 % of respondents from the Interventional Group were willing to take the COVID-19 vaccine.
- 91.4 % of respondents from the Control Group were undecided or not willing to take the COVID-19 vaccine. **(Table 1)**

Table 1

Parameter	Knowledge Phase	Mean	Std. Deviation	N	F	Sig.
Are you willing to take the COVID-19 vaccine?	Pre-Intervention	2.66	0.512	165	418.06	0.000
	Post-intervention	1.31	0.677	165		

Mean score 1-2: Yes, Mean score 2-3 score: No/Undecided

Conclusion and Future work

- The study highlights the importance of improving vaccine acceptance, knowledge, attitudes, and perception among healthcare students by integrating specialized vaccination curricula into their degrees.
- These encouraging results set the foundation for future similar interventional study designs focusing on correcting misinformation and alleviating any fears that might be associated with the vaccine.
- Further research in larger settings is warranted to generalize these findings.

Study Impact

- We believe that the evidence-based educational intervention approach that we tested successfully could be applied in real-world COVID-19 vaccine rollout messaging campaigns in India and globally.
- Considering the COVID-19 vaccines' improved knowledge and acceptance rate found in this small intervention group, we expect, this group of students can serve an important role in future public health campaigns

References

[1] Pandey et al. "Challenges facing COVID-19 vaccination in India: Lessons from the initial vaccine rollout." J Glob Health. vol. 26; no. 11, pp. 03083. 2021 doi: 10.7189/jogh.11.03083.

[2] Papagiannis et al. "Assessment of Knowledge, Attitudes, and Practices towards New Coronavirus (SARS-CoV-2) of Health Care Professionals in Greece before the Outbreak Period". Int J Environ Res Public Health.; vol. 1, no. 14, pp. 4925. 2020 doi: 10.3390/ijerph17144925

[1] Moffitt Cancer Center, [2] Institute of Clinical Research Department; Himgiri Zee University