Team 5

Our Action plans.

Vaccine hesitancy

Develop targeted intervention.

Address vaccine hesitancy

Increase public awareness.

Since we were 4 group members so we divided 4 action plans but 2 members are not responding so we (Bhujel Pusparaj , Bhujel Sujan) did two action plans.

**Vaccine hesitancy**

The delay or refusal to vaccinate despite readily available supplies and services is known as vaccine hesitancy, and healthcare providers worldwide continue to see it as a widespread public health issue Acknowledgment of novel Coronavirus antibodies supports the possible outcome of current worldwide vaccination crusades. Because of their influential position as reliable sources for vaccination, healthcare providers' vaccine hesitancy may jeopardize this success.

**Study design and recruitment**

During the 25th to 30th of June in 2021, we analyzed data from 23,000 adult respondents to a global survey that was conducted in 23 nations (Brazil, Canada, China, Ecuador, France, Germany, Ghana, India, Italy, Kenya, Mexico, Nigeria, Peru, Poland, Russia, Singapore, South Africa, South Korea, Spain, Sweden, Turkey, the United Kingdom (UK), and the United States (US). 3,295 of these people said that they were any kind of healthcare provider, such as a physician, nurse, community health worker, or other healthcare provider. Telephone, direct mail, and email were used to recruit respondents from online panels. Layers were made for segment factors with every layer requiring at least 50 members, and the information weighted involving irregular examining to guarantee representativeness of the nation concerning age, orientation, and training level, and is portrayed exhaustively somewhere else.

### Survey instrument

Based on a thorough review of existing literature on COVID-19 vaccine acceptance and previous studies on pandemic control measures, a comprehensive questionnaire consisting of 31 questions was developed. The questionnaire aimed to assess various factors influencing COVID-19 vaccine hesitancy and acceptance, as well as vaccination intent. These factors included perceptions of risk, efficacy, safety, and trust, which were identified as important determinants of vaccine hesitancy based on the literature review. Two key questions were included to define vaccine acceptance: whether participants had received at least one dose of a COVID-19 vaccine or strongly agreed to take it when available, contrasting with hesitancy towards taking a vaccine when available. Vaccine hesitancy was defined based on participants reporting "no" to receiving a COVID-19 vaccine and expressing uncertainty, disagreement, or no opinion towards taking one in the future, aligning with the definition provided by the Strategic Advisory Group of Experts (SAGE) on immunization. The questionnaire also collected information on participants' experience of anxiety and depression, COVID-19-related experiences (such as personal or family illness or loss), demographic variables (age, gender, income), and self-reported role as a healthcare provider.

**Results**

Out of the total 3,295 respondents, the distribution of healthcare providers was as follows: 27% identified themselves as physicians, 19% as nurses, 24% as community health workers, and 30% as other types of healthcare providers (Table 1). The sample had a nearly equal representation of male (49%) and female (50%) respondents, with a higher percentage of female nurses (63%) and other healthcare providers (59%). The median age of the respondents was 33 years, with the first quartile (Q1) at 25 years and the third quartile (Q3) at 44 years. The countries with the highest number of respondents were India (n = 661, 20%), Kenya (n = 201, 6.1%), Nigeria (n = 189, 5.7%), and Sweden (n = 169, 5.2%) (Supplemental Tables 1-23). The majority of respondents (63%) were from low- or middle-income countries, including a significant proportion of each type of healthcare provider (73.5% of physicians, 54.8% of nurses, 61.3% of community health workers, and 59.6% of other healthcare providers). Between 22% and 34% of healthcare providers, particularly community health workers, reported experiencing symptoms of anxiety or depression recently. Among the respondents, 72.4% reported receiving at least one dose of the COVID-19 vaccine, with the highest vaccination rate observed among physicians (85.6%) and the lowest among the category of other healthcare providers (61.6%).

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Reported [vaccine hesitancy](https://www.sciencedirect.com/topics/medicine-and-dentistry/vaccine-hesitancy) and acceptance by healthcare provider role.

HCP, healthcare provider.

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Reported [vaccine hesitancy](https://www.sciencedirect.com/topics/medicine-and-dentistry/vaccine-hesitancy) and acceptance by country income

HIC, high-income country; LMIC, low- or middle-income country.

**Develop evidence-based communication-**

These strategies using the analysis to effectively communicate vaccine information, address misinformation, and promote vaccination.

One of the tools to improve the coronavirus disease (COVID-19) vaccine risk perception and reduce uncertainty is the dissemination of transparent, comprehensible, balanced and factbased information. However, people have been overwhelmed with information, some of which is false and misleading, especially online. To promote evidence-based decision-making, this project has produced easy-to-understand fact boxes providing objective information on the risks and benefits of messenger ribonucleic acid (mRNA)-based vaccines against COVID-19. The project aims to facilitate evidence-based conversations and informed decisions about vaccination.

Impact on knowledge, attitudes and behaviour of the target audience The project team conducted two studies to evaluate the effectiveness of fact boxes for vaccine communication with lay audiences, both showing benefits of the fact boxes. Study 1: An online experiment was carried out with 719 participants to investigate whether vaccine fact boxes improved COVID-19 risk perception. The findings revealed that the fact boxes improved perceptions of disease risk (elicited by self-report ratings), compared with a control presentation (information that was not evidence-based). Only the control presentation increased both fear and perceived severity (self-report ratings) of developing the disease. Study 2: The team compared a group of 1942 participants who received fact boxes on mRNAbased vaccination with a group who did not receive the fact boxes, and assessed the effect on vaccination knowledge and evaluation. The results showed that the vaccination knowledge (sum score) was higher after fact box presentations. Sceptical and uncertain participants who comprehended the fact box arrived at a more positive evaluation of the benefit-harm ratio (selfreport rating) of vaccination

The non-mandatory status of COVID-19 vaccines requires high levels of public agreement and understanding. However, anti-vaccine movements are spreading misinformation through online platforms, targeting modern vaccine technologies and instilling fear. Baseline willingness for vaccination is low in many countries, necessitating proactive campaigns to counteract misinformation. Access to accurate information about authorized vaccines and their benefits is crucial. Dissemination of misinformation can have disastrous effects, particularly in less developed regions with limited science communication and prevalent myths and misconceptions. Immediate action is necessary, regardless of a country's vaccine availability or socioeconomic status.

