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Covid-19 Vaccines Hesitancy in Asia: A Review

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ABSTRACT

This article examines the reasons why Asians are hesitant to receive COVID immunizations. The review is centered on Asia. In late 2020, the initial COVID-19 vaccines were readily accessible. Since then, an increasing number of nations have immunized their medical personnel as well as the most susceptible citizens. This article explores the many justifications for people's resistance to the COVID-19 vaccine. For the aims of this journal review, data and information about COVID-19 vaccine hesitancy in Asia were gathered from papers and other relevant published material. The authors used multiple databases to retrieve pieces from the literary canon. The articles gathered revealed that various factors influence individuals' choices as to whether or not to vaccinate. Some of these issues include a lack of understanding about COVID vaccines, side effects of the vaccines, the influence of social media, the effectiveness of COVID vaccines, and their religious beliefs and traditions. People's perceptions of the vaccine's hazards, the impact of social media, efficacy, literacy rates, and the influence of religion and beliefs directly contribute to Asians' reluctance to acquire the COVID-19 inoculation. Regardless of the existence of these elements, the vaccination team in each Asian country is obligated to consider these components as crucial components that must be explored. To appropriately promote and provide the optimal vaccination method as a COVID-19 prevention strategy, it is necessary to identify people's perspectives on vaccine hesitancy and the factors influencing the hesitation. The writers came to the same conclusions, and the results they wrote about in their papers were all the same.

INTRODUCTION

Late in the year 2020, the first COVID-19 immunizations became publicly available. Ever since then, a growing number of countries have begun vaccinating their healthcare staff and the most vulnerable members of their populations [12,13]. Vast swaths of land on every continent are preparing to participate in the world's most ambitious and widespread immunization effort to date. Vaccine hesitancy, described as fear about getting vaccinated, is swiftly replacing the more surface-level concern about gaining access to vaccines in certain undeveloped nations and some affluent economies even before the epidemic [8,12]. People all throughout the world are reluctant to get vaccinated against the COVID-19 epidemic. This is due to the fact that the sickness is so contagious. Because of the inadequate preparation of low-income and middle-income countries' healthcare systems to deal with a major public health crisis, these nations have been hit particularly hard by the epidemic [9]. It is often quite challenging for low-income countries that do not engage in extensive immunization to obtain acceptance of their vaccinations in other parts of the globe. It is typically difficult for low-income countries that do not engage in widespread immunization to win acceptance of their vaccinations in other areas of the globe [10]. Several countries are preparing for a third pandemic [9,10,11]. In Afghanistan, researchers emphasize how vital it is to comprehend the public's perception and openness to the vaccinations for COVID-19 as well as their concerns over it in Afghanistan, where the overall immunization rate is only 39% [15]. A latency in vaccination in any part of the world could result and lead to the emergence and dissemination of the latest strains of the virus that are capable of overcoming immunity conferred by the vaccine as well as immunity derived from a previous illness, it is requisite to grasp the significance of the CoronaVirus-19 vaccine accumulation on a massive worldwide basis. Given that an interruption in vaccination in any country could lead to the development of variants of the virus that are capable of defeating immunity [14]. The COVID-19 virus placed a significant amount of pressure on countries all over the world, including Asia, to bring it under control and stop it from spreading further because of its greater and high mortality rate and speed of transmission. Recognizing the aspects associated in governing the acceptability of the vaccination of CoronaVirus and determining the prevalent impediments to vaccination decisions are crucial for designing more effective strategies to increase the total vaccination coverage of the general population[14, 15]. To ensure that vaccination efforts are successful and that the coverage required to achieve herd immunity is reached, policymakers must be educated about the public desire to receive vaccination [15]. The prevalence of COVID-19 has dropped drastically because of immunization initiatives on a massive scale but vaccination skepticism has caused widespread alarm [12]. The purpose of this study is to assess the population's willingness and hesitancy toward the COVID-19 vaccination. Whereas to investigate the many different factors that contribute to people's hesitancy to get vaccinated against COVID-19 in Asia.

METHODOLOGY

Data and information from publications and literature connected to the COVID-19 Vaccines Hesitancy in Asia were searched for and compiled for this journal review. The authors retrieved the works of literature from the central databases, including Pubmed, Chegg, Multidisciplinary Digital Publishing Institute (MDPI), Journal of Medical Internet Research, Cochrane Library, EMBASE, CINAHL, AMED, ScienceDirect, Sprinkler, Cambridge, National Center for Biotechnology Information, Tropical Medicine and Health, Ocular Immunology and Inflammation, JAMA Network, ACTA Medica Philippina, MedRx, Online Library Wiley, Journal of Medical Internet Research (JMIR), and World Health Organization (WHO). The search was ushered through the utilization of the search phrases: Negative effects of COVID-19 vaccinations, the impact of social media on COVID-19 vaccines, their effectiveness, the impact of literacy on COVID-19 vaccines, and the influence of religion and beliefs on COVID-19 vaccines, or a mix of these phrases and their associated keywords. A well-established approach to every piece of literature and its database was restricted to works that were published from 2017 to the present and did not take into account language restrictions. Each article was manually searched to make sure no pertinent material was missed.

RESULTS & DISCUSSION

Table 1. Adverse Effects

Author and Year	Method	Causes Attributing to the Hesitancy Factors
Mushtaq et al., 2022	Narrative review. 2020–2021 literature was reviewed in PubMed and Google Scholar. Searches for "adverse effects," "adverse events," "complications," "COVID-19," and "vaccine" yielded relevant material. The authors examined the results and articles for relevance. Due to few papers on the issue, there are no language constraints. Duplicated and irrelevant studies were excluded.	Pain at the site of injection
Hatmal et al., 2022	In order to forecast adverse reactions to immunization in Arab populations, this study applied machine learning (ML) technologies. Methods: From June to August 2021, a social media survey of COVID-19 vaccine users in 22 Arab nations was conducted online. Chi-square testing, correlation analysis, and descriptive statistics were used in the analyses. Furthermore, using powerful machine learning techniques, the severity of 30 post-vaccination side effects were predicted based on 15 predisposing features.	Fatigue and drowsiness
Orebi et al., 2022	In a cross-sectional study, 1246 healthcare professionals at Tanta University Hospitals were vaccinated against COVID-19 between November 2021 and January 2022, either the first or second dose.	Joint and muscle pain/ headache/fever

COVID-19 has expanded globally [1] and affected humanity's global geopolitical, economic, and cultural elements [2]. Due to limited preventative and treatment options, COVID-19 vaccinations became crucial [3]. The pandemic requires economical, effective, safe, and transportable vaccinations. COVID-19 vaccines have hazards [4,5]. Short-term COVID-19 vaccination side effects are usually modest. Fever, headache, and injection site soreness are the most prevalent symptoms [2,3.4]. Tracking over an extended period may reveal future adverse events and rule out mistakenly ascribed vaccination reactions. Most vaccination reactions peak within six weeks of getting the vaccine. Identifying immunologic and nonimmunologic mechanisms of negative occurrences is necessary to develop safe policies [5,6,7].

Table 2. Influence of Social Media

Author and Year	Method	Causes Attributing to the Hesitancy Factors
Samira et al., 2021	The researchers gathered old tweets about the COVID-19 vaccination using snscrape (Snscrape, 2021). In order to find tweets posted between January 7, 2020 and January 3, 2021, a combinated: "vaccine" and terms ; COVID-19 related (including "covid", "coronavirus," "ncov2019," and "SARS-CoV-2") was entered into a search engine. The following fields are included in the "tweets" tabled data: "id," "date," "tweet," "url," "username," "outlinks," "retweetCount," "replyCount," "likeCount," and "quoteCount."	Positive and Negative opinions
Cindy et al., 2022	Two postgraduate communication studies students received instruction in the manual evaluation and assessment of 4667 fact-checked articles as well as in the search for and acquisition of English-language original or archived postings and the accompanying viral reactions on social media platforms. This was done in order to gain the misinformation regarding the anti-vaccine on various platforms in social media that was accessible and understandable to the users of social media worldwide. The generated items from the two databases were then blended by the trained students after the overlapping fake news against vaccinations was eliminated. Since the majority of the initial anti-vaccine disinformation films on YouTube had been taken down, it was not included in the review process.	Fake News

The primary forum for discussion and information regarding COVID-19 is social media [21, 22]. To acquire information about health, several sources are employed, including new media like the Internet and social media platforms [23]. Due to the COVID-19 pandemic's extensive media attention in the news and social media, vaccinations were developed quickly [24, 25]. Which made the hesitations over COVID-19 vaccinations blatantly apparent everywhere [26, 27, 28].

The rising usage of social media significantly has greatly caused the population's choice to get vaccinated to disseminate dubious information regarding vaccination [29]. Important interactive channels for information sharing and searching are provided by social media, which can help with disaster preparedness [30]. On the other hand, the ubiquity of fake details on social media is a remarkable factor in this dilemma [31]. The World Health Organization coined the term "infodemic" to describe the rate at which false material regarding the COVID-19 widespread and vaccines is disseminated on various platforms in social media [32].

Immunity to newly emerging infectious illnesses is thought to be best and most safely provided through vaccination [33]. The most potent prolonged method of preventing and controlling COVID-19 is vaccination [34,35]. Despite social media's role in vaccination behavior, research on the public's exposure to false information, conspiracies, and worries about a future COVID-19 vaccine on Twitter is lacking [36]. Concerns concerning vaccine effectiveness and safety have arisen due to the urgent need and the rapid pace of vaccine discovery, production, and mass rollout [37, 38]. Global health security is increasingly at risk from vaccine reluctance. The first of the top 10 risks to global health in 2019 [39, 40].

Table 3. Efficacy

Author and Year	Method	Causes Attributing to the Hesitancy Factors
Xing et al., 2021	To evaluate the caliber of studies, the Cochrane bias risk assessment method was utilized. Clinical study outcomes underwent a qualitative examination.	Mistrust in Vaccination Safety
Sallam, 2021	Surveys of the general public, healthcare professionals, students, and parents/guardians, as well as peer-reviewed published articles that are included in PubMed/Medline. The study's main objective was to assess vaccine acceptability and reluctance using a survey or questionnaire.	Perception of low vaccine efficacy and quality
Akel et al., 2022	With a 4% margin of error, an 800-person sample might accurately predict a vaccination rate of 50%, which is statistically conservative. In August and November 2020, as well as in March and June 2021, data are gathered from six nations.	Misperception on risks
Tan et al., 2022	When it comes to determining immunization status, social support perception and trust in unofficial sources are not as reliable as official sources of information. Despite having little faith in official data sources, some respondents place a lot of trust in unofficial ones like email and phone contacts.	Public distrust on health institutions and science

Misperceptions towards the COVID-19 vaccine efficacy are another factor responsible for vaccine hesitancy even though it has proven to be safe, effective, and life-saving [41,42,48,50,51]. Thus, perceptions of vaccine efficacy must be recognized in order to advocate for the vaccination strategic plan for COVID-19 prevention [43,49]. Trust in vaccination safety, interpretation of low vaccine efficacy and quality, and confidence that individuals have adequate immunity to counteract the disease all influence vaccine hesitancy for COVID-19 [44,45,46,47]. Uncertainty about the efficacy of vaccines is another reason that triggers the hesitancy of being vaccinated [52]. In Asia, a lack of accessibility to information about the vaccine's efficacy also results in hesitancy [53,54,59]. It is also associated with the misperception of risks [55,56,57,58]. Finally, public distrust of health institutions and science is a major contributing element to vaccine hesitancy[60].

Table 4. Literacy

Author and Year	Method	Causes Attributing to the Hesitancy Factors
Mohamed et al., 2021	A multilingual, semi-structured Google Forms survey was published on social media. Regarding knowledge, acceptability, and perception of the COVID-19 vaccine, the questionnaire asked. For categorical variables with more than two, the Kruskal-Wallis test was applied; for categorical variables with two or fewer, the Mann-Whitney test was applied.	Lack of knowledge
Hawlader et al., 2022	From January to February 2021, semi-structured questionnaires were used in a cross-sectional study with 18201 participants. In order to forecast vaccination acceptability, they used the HBM. STATA was used in each analysis.	Misinformation
Yigit et al., 2021	428 parents participated in a COVID-19 vaccination survey with 16 questions. The parents had Ankara City Hospital Children's Hospital inpatients or outpatients. Parents were surveyed on family sociodemographics, COVID-19 vaccine opinions, and vaccine refusal grounds.	Misunderstanding
Li et al., 2020	In February 2020, 802 Chinese netizens participated in a proportionate probability sample nationwide web-based cross-sectional survey.	Uneducated

A safe and efficient vaccination is essential for controlling the COVID-19 epidemic [61,64,68]. The effectiveness of a vaccination program is primarily determined by the level of confidence in vaccination, and the organizations that deliver them [61,70,72]. If individuals believe the danger of disease to be low, they may be less ready to accept the hazards of vaccination [61, 75, 79]. Previous research on Malaysian parents showed that a lack of understanding affected their vaccination decisions for their children [62,63]. Insisting that inactivated vaccinations are safer than regular vaccines is a widespread misconception regarding inactivated vaccines [69,74,77]. Reflecting on the collective responses of netizens, the evolving factors of COVID-19 vaccine acceptability provide illuminating benchmarks for policy supporting vaccination [66, 69, 76]. Even before a viable COVID-19 immunization was available, social media platforms were rife with false information and baseless rumors about COVID-19 vaccines [62, 63, 79]. Health literacy is also a significant factor in determining the efficacy of information comprehension and evaluation [63, 74, 78, 79, 80]. Quality teaching and awareness programs can help minimize worries about the safety of vaccinations and vaccine reluctance, as well as attenuate the impact of cultural variables, which might also result in positive vaccination impacts[65, 71].

Table 5. Beliefs and Religion

Author and Year	Method	Cause Attributing to the Hesitancy Factors
Sallam et al., 2021	In January 2021, an online survey using chain-referral sampling was conducted. The conspiracy beliefs were analyzed with the use of Vaccine Conspiracy Belief Scale wherein higher scores indicates	Microchip implant for human control scheme
Akther & Nur, 2022	An online structured questionnaire using Google Forms was used to assess COVID-19 vaccine acceptance and analyzed using PLS-SEM. The data were gathered from 351 respondents aged 19-30 years old enrolled in various public Bangladesh universities	COVID-19 vaccine as a bioweapon
Wong et al., 2020	A qualitative design was used in this study wherein physicians, academics, and researchers in a teaching hospital situated in Kuala Lumpur, Malaysia. Convenience sampling method was employed to gather the participants. An in-depth semi-structured face-to-face interview was held for data collection.	Promotion and belief of traditional complementary and alternative medicines
Rani et al., 2022	An exploratory descriptive qualitative design was used in this study. A cross-sectional survey was carried out with the use of a non-probability convenient sampling method to obtain respondents.	Inclusion of porcine content and its alternatives

Anti-vaccination and conspiracy beliefs along with low trust in institutions are inclined to the reliance on unregulated platforms of health information that pose a population of particular concern.[81,82]. Most often, conspiracy theories are extraneous sources of inferential beliefs that go beyond what can be seen [83]. The credence towards conspiracy theories historically hampered the community's immunization. Previous studies identified one of the standard theories that led to immunization hesitancy and refusal is the addition of human immunodeficiency virus (HIV) and infertility agents in COVID-19 vaccines, which present a public health concern. A unique population, women of reproductive age (WRA), are among those affected by the underlying myths of infertility leading to a doubtful COVID-19 vaccination. WRAs are viewed as a key population in the control and management of the pandemic as they are socioeconomically active [84,85]. Nearly as soon as COVID-19 was initially reported, conspiracy theories about it being a hoax or a bioweapon invented in a Chinese laboratory started to surface on social media [86]. According to a study by Sallam et al. in 2021, Jordanian university students reported a low intent of acquiring the COVID-19 vaccine at 34.9% which is associated with conspiracy beliefs, including microchip implants for human control and the virus as a manufactured disease [87]. An emerging amount of evidence demonstrates that belief in conspiracy theories can negatively affect attitudes and behavior [88]. Further, one of the themes generated in a study conducted in Malaysia is the increased acknowledgment of traditional complementary and alternative medicines (TCAMs) for disease prevention and treatment through the false propaganda of sellers fosters the promotion of anti-vaccination acts [89]. Overall, vaccination intentions are reduced as more individuals acknowledge these beliefs about COVID-19 vaccines [90,91].

In the context of religion, recent studies revealed a correlation between the reduced intention of COVID-19 vaccination with religiosity [92]. According to the study entitled A survey on COVID-19 vaccine acceptance and concern among Malaysians, minority groups 20.8% reported religious factors as a causative factor of hesitancy. Although the study showed a positive acceptance rate among Malaysians, it is still vital to address concerns among doubtful citizens [93]. Perceived religious prohibition associated with halal status is one of the themes created for vaccine hesitancy. Most concerns centered on porcine contents, or its alternatives, on vaccine production. Health experts believe this is prevalent among Muslim communities in Southeast Asia, specifically Indonesia and Malaysia [89,94,95]. Moreover, religious leaders significantly influence the congregation through their statements, actions, and stance, such as their decision to vaccinate [96].

CONCLUSION

The people's perceptions of adverse effects, the influence of social media, efficacy, literacy, and effects of religion and beliefs are direct factors of COVID-19 vaccine hesitancy in Asia. Despite the presence of these aspects, the COVID-19 vaccination team of every country in Asia must consider these as necessary elements to be studied. It is significant to acknowledge the people's perception of vaccine hesitancy and the determinants affecting the hesitancy to promote and effectively provide the best vaccination approach as a COVID-19 prevention strategy.

CONFLICT OF INTEREST

No conflict of interest among authors.

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