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Public Perception of the COVID-19 Vaccine: Literature Review

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ABSTRACT

Introduction: Community perceptions of COVID-19 vaccines are responses or acceptance based on the information obtained regarding beliefs about the halal status of vaccines, willingness to be vaccinated, and the capacity of healthcare workers providing the COVID-19 vaccine. This is due to numerous issues affecting information about the COVID-19 vaccine. These facts have encouraged the government to enhance the COVID-19 vaccination program within the community.

Objective: This study aims to explore and analyze the public perception of the COVID-19 vaccine. It seeks to identify key factors influencing attitudes towards the vaccine, including trust in health authorities, misinformation, demographic variables, and socio-political influences. The objective is to provide a comprehensive understanding of the drivers of vaccine acceptance and hesitancy to inform public health interventions.

Method: This writing uses a literature review method. It involves searching for and filtering articles that meet predetermined criteria through inclusion criteria. In this writing, scientific articles were found using Google Scholar with search keywords "community perceptions," "knowledge," and "COVID-19 vaccine."

Result: The study revealed a complex landscape of public perception regarding the COVID-19 vaccine. Trust in health authorities and exposure to misinformation emerged as significant factors impacting perceptions. There is a relationship between knowledge and community behavior, education level and vaccination history with knowledge, religion with community attitudes, and COVID-19 vaccination history.

Conclusion: Knowledge influences community perceptions of the COVID-19 vaccine. Therefore, it is necessary to provide comprehensive and equitable information to all communities about the usefulness, safety of the COVID-19 vaccine, and all updated information regarding the COVID-19 vaccine.

Keywords: Community Perceptions; Knowledge; COVID-19 Vaccine

INTRODUCTION

Community perceptions of the COVID-19 vaccine are responses or acceptance based on the information obtained regarding beliefs about the halal status of the vaccine, willingness to be vaccinated, and the capacity of healthcare workers providing the COVID-19 vaccine. This is due to numerous issues affecting information about the COVID-19 vaccine. As of March 25, 2020, a total of 414,179 confirmed cases had been reported, including 18,440 deaths (CFR 4.4%), with 192 countries/territories reporting cases. Of these, 93,039,441 people have recovered and 2,606,888 have died. (19)

Indonesia ranks 18th among countries confirmed with COVID-19. Various countries are competing to obtain a vaccine that can effectively prevent COVID-19 through a series of scientifically robust stages. The goal of COVID-19 vaccination is to reduce the transmission or spread of COVID-19, decrease morbidity and mortality due to COVID-19, achieve herd immunity in the community, and protect people from COVID-19 so they can remain socially and economically productive. (7,4)

There are essentially three types of community attitudes towards vaccination: those who accept the vaccine, those hesitant about the vaccine, and those who reject the vaccine. (1) Hesitation usually arises when a vaccine is introduced to the public regarding its effectiveness and potential safety. Satisfaction with not being infected, lack of trust in the safety & effectiveness of the vaccine and vaccination system, ease of access to services, and higher than expected costs can ultimately reduce the likelihood of accepting vaccination. Vaccine hesitancy is influenced by knowledge levels, attitudes, and beliefs of providers about vaccination, as well as broader organizational, political, cultural, or historical factors (27). Based on the introduction, this study aims to determine the factors influencing community perceptions of COVID-19 vaccination.

METHOD

This writing uses a literature review method. It involves searching for and filtering articles that meet predetermined criteria through inclusion criteria. In this writing, scientific articles were found using Google Scholar with search keywords “community perceptions,” “knowledge,” and “COVID-19 vaccine.” The article search used keywords and Boolean operators (AND, OR NOT, or AND NOT). Keywords for article search include perception, knowledge, and COVID-19.

Ten (10) articles published between 2019 and 2023 were found, and articles were selected according to inclusion criteria. Seven (7) articles met the inclusion criteria set by the authors, relevant to the topic of discussion. Prism diagram of the stages of searching for scientific articles can be seen in Figure 1.

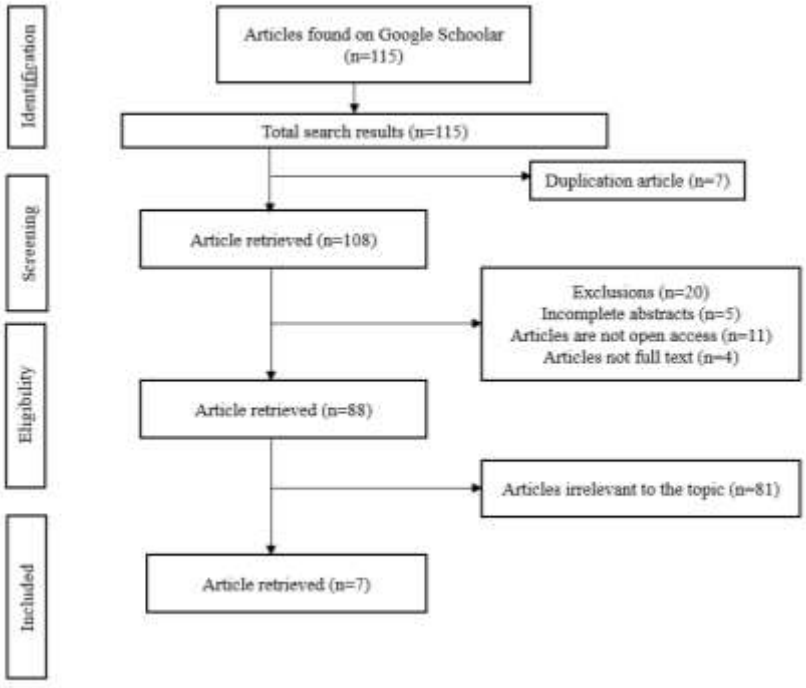

Figure 1. Prism Diagram

RESULTS

Based on the inclusion criteria and keywords used in the article search, 7 articles were found that met the researchers' criteria for review according to the discussion topic. The selected articles were subjected to data extraction by the researchers. The following table summarizes the extraction results from the selected articles.

Table 1. Matrix of Literature Review

No.	Research Title	Samples	Research Variables	Research Method	Research Results
1.	Zisi Lioni Argista. Persepsi Masyarakat Terhadap Vaksin COVID-19 Di Sumatera Selatan (2021) (19)	440 respondents	• Gender, age, education, occupation, religion, tradition, marital status, economic status, history of non-communicable diseases, history of COVID-19, safety of the COVID-19 vaccine, willingness to be vaccinated, reasons for refusing to be vaccinated and public knowledge of the COVID-19 vaccine. • Public Perception of the COVID-19 Vaccine	This study used a quantitative approach with a cross-sectional design. The study was conducted over a specific period, and the sample was taken simultaneously, without repetition, where respondents only participated once.	Sample size: 440 respondents. Significant results were obtained. Of the 440 respondents, 277 (63%) had a positive perception of the COVID-19 vaccine, and 163 (37%) had a negative perception. The dominant variable influencing community perceptions of the COVID-19 vaccine was knowledge (P value 0.005).
2.	Kevin Nicholas Rumahorbo. Hubungan Tingkat Pengetahuan Terhadap Sikap Dan Perilaku Masyarakat Kecamatan Medan Denai Tentang Vaksinasi COVID-19 (2021) (4)	100 respondents	• Attitudes and behaviors about COVID-19 vaccination • Level of knowledge about COVID-19 vaccination.	This study used an observational analytic research type with a cross-sectional approach where data collection was done only once.	Sample size: 100 people. Significant results showed a relationship between knowledge and community behavior, education level and vaccination history with knowledge, religion with community attitudes, and COVID-19 vaccination history with community behavior ($p < 0.05$).
3.	Rayclif Runtuwene, Ardiansa A. T. Tucunan, Adisti A. Rumayar.	93 respondents	• Age, gender, final education, occupation, family income	This study used a descriptive quantitative research method with a cross-sectional study approach.	Sample size: 93 respondents. Significant results showed that respondents aged 56-65 had more positive perceptions of COVID-19

	Gambaran Persepsi Masyarakat Terhadap Vaksinasi COVID-19 di Desa Kamanga Dua Kecamatan Tompaso Kabupaten Minahasa (2021) (13)		and place of residence. • Public perception of the COVID-19 vaccine.		vaccination compared to younger respondents aged 17-25 years.
4.	Nurul Hasyifah. Gambaran Persepsi Masyarakat Terhadap Pemberian Vaksinasi COVID-19 Di Kecamatan Rappocini Kota Makassar Tahun 2021 (7)	400 respondents	• Age, gender, latest education, occupation • Public perception of the COVID-19 vaccine.	This study used a quantitative research method.	Sample size: 400 people. Results showed that the majority of the community had negative perceptions of vulnerability (61%), seriousness (60.3%), benefits (60.3%), positive perceptions of barriers (59.5%), and positive cues to action (85%).
5.	Nurul Azmawati Mohamed, Hana Maizuliana Solehan, Mohd Dzulkhairi Mohd Rani, Muslimah Ithnin, Che Ilina Che Isahak. (2021) *Knowledge, acceptance and perception on COVID-19 vaccine among Malaysians: A web based survey*	385 respondents	• Age, gender, latest education, occupation. • Level of knowledge about COVID-19 vaccination.	This study used a cross-sectional approach.	Sample size: 385 respondents using a questionnaire distributed via Google Form. Results showed that the average age of respondents was 37.07 years (SD = 16.05), and 926 (65.9%) were women. 62% of respondents had poor knowledge about the COVID-19 vaccine (mean knowledge score 4.65; SD = 2.32), and 64.5% were willing to get the COVID-19 vaccine. High knowledge scores were associated with higher education backgrounds, higher income categories, and living with someone at higher risk of severe COVID-19. They were more likely to be willing to be vaccinated if they were younger, had higher education levels, and were female.
6.	Amyn A. Malik, SarahAnn M. McFadden, Jad Elharake, Saad B. Omer.	672 respondents	• Gender, age, religion, latest education, occupation. • Level of knowledge	This study used an online platform and surveyed the adult US population in May 2020 to understand risk perceptions about the COVID-19 pandemic,	Sample size: 672 respondents. Results showed that of the 672 respondents surveyed, 450 (67%) said they would accept the COVID-19 vaccine if

	Determinants of COVID-19 vaccine acceptance in the US		about COVID-19 vaccination.	COVID-19 vaccine acceptance, and trust in information sources.	recommended to them. Vaccine acceptance varied by demographic characteristics, with men (72%) compared to women, older adults (55 years; 78%) compared to younger adults, Asians (81%) compared to other racial and ethnic groups, and college degree holders (75%) compared to those with less than a bachelor's degree more likely to accept the vaccine if recommended to them. The median risk perception score among those who would accept the vaccine was 6. The risk perception score was statistically significant ($p < 0.01$). From the 672 participants, participants were excluded from the risk score calculation if they chose "don't know".
7.	Seyi Samson Enitan, Adesola Oyekunle Oyekale, Richard Yomi Akele, Kayode Abraham Olawuyi, Elisha Oluwatobi Olabisi, Amarachi Joy Nwankiti, Esther Ngozi Adejumo, and Comfort Bosede Enitan (2020). Assessment of Knowledge, Perception and Readiness of Nigerians to Participate in the COVID-19 Vaccine Trial	465 respondents	• Age, gender, education level, religion, occupation. • Public knowledge and perception of the COVID-19 vaccine	This study used a web-based cross-sectional study conducted on the Nigerian population from May 19 to May 22, 2020. The study used a survey instrument (questionnaire) with 39 item questions.	Population: 465 respondents. The population consisted of Nigerians agreeing from six geopolitical zones of the country (Northeast, Northwest, North-Central, Southwest, Southeast, and South-South). Inclusion criteria were only Nigerian adults aged ≥18 years with internet access, regardless of gender, cultural background, and geopolitical zone. Exclusion criteria were Nigerians under the age of 18, regardless of gender, cultural background, and geopolitical zone, not invited to participate in the survey. Results showed that age, gender, education level, religion, occupation, monthly income nature, and geopolitical zone influenced respondents' perceptions and readiness to participate in the COVID-19 vaccine trial.

DISCUSSION

This research explores various factors influencing community perceptions of the COVID-19 vaccine through a literature review. Several variables significantly contributing to these perceptions include knowledge, educational level, religious beliefs, and personal experiences related to vaccination. This discussion will detail the main findings

from several studies included in the review, providing an overview of how these variables affect community perceptions.

Knowledge and Community Perceptions

Many studies confirm that the level of community knowledge about the COVID-19 vaccine strongly influences their perceptions. For instance, research by Zisi Lioni Argista in South Sumatra shows that 63% of respondents have a positive perception of the COVID-19 vaccine with a p-value <0.05, closely related to their level of knowledge. This indicates that the higher an individual's knowledge about the vaccine, the more positive their perception of vaccination. Rumahorbo (2021) also reinforces this result by finding a significant correlation between knowledge and attitudes towards vaccines in Medan Denai District. That is 80% of respondents have high knowledge with a p-value <0.05.

Knowledge encompassing understanding of the safety, efficacy, and benefits of vaccination can reduce hesitancy and increase willingness to be vaccinated. Research in Nigeria by Enitan et al. (2020) shows that higher educational levels and better access to information significantly increase community readiness to accept the vaccine. Accurate and comprehensive information about the vaccine helps address doubts and myths that may lead to resistance to vaccination.

Educational Level and Vaccine Perception

An individual's educational level is also found to have a significant impact on the perception of the COVID-19 vaccine. Research by Mohamed et al. (2021) in Malaysia indicates that respondents with higher educational backgrounds have better knowledge scores about the vaccine and are more willing to accept the vaccine. This data is consistent with findings from a study in the United States by Malik et al. (2020), where those with higher education level 75% of respondents were more likely to accept the vaccine at 67% with a p-value of <0.01. This proves that education provides a foundation for accessing and understanding scientific information about vaccines, which in turn influences individual perceptions and decisions regarding vaccination.

Religion and Vaccine Perception

Religious beliefs are also an important factor in shaping community perceptions of the COVID-19 vaccine. Several studies show that religious beliefs can influence individual attitudes toward vaccines, either positively or negatively. Research in Medan Denai District in 2021 indicates a relationship between religion and community attitudes toward the vaccine. That is 50% of respondents with a p-value of 0.000 <0.05. In some contexts, religious beliefs may foster skepticism towards certain medical interventions, including vaccination, if the provided information does not align with religious teachings or community beliefs. Therefore, educational efforts about vaccines need to consider religious sensitivities and collaborate with religious leaders to facilitate vaccine acceptance in broader communities.

Personal and Social Experiences

Individuals' previous experiences with vaccination and their personal risk perceptions of COVID-19 also play a crucial role in determining their attitudes towards the COVID-19 vaccine. A study by Runtuwene et al. (2021) in Kamanga Dua Village shows that older age groups have more positive perceptions of the vaccine compared to younger age groups. The older age group is 11% out of a total of 13% compared to the 17 to 25 year olds who are 13% out of a total of 30%. This may be due to higher awareness of health risks associated with COVID-19 among older adults, prompting them to support vaccination as a way to protect themselves.

Moreover, research in the US by Malik et al. (2020) found that people with personal or family experiences with COVID-19 tend to be more accepting of the vaccine. Higher personal risk perceptions of infection drive individuals to adopt preventive measures, including vaccination. Social factors such as influence from friends, family, and community also affect individuals' perceptions of the vaccine.

Media and Information Influence

Access to information through media is also a significant factor in shaping community perceptions of the COVID-19 vaccine. Various studies show that the sources of information used by individuals, including social media, television, and online news sources, can influence their attitudes and perceptions. Accurate and transparent information from health authorities and the government is crucial to counter misinformation or misleading information that can lead to vaccine hesitancy or rejection.

CONCLUSION

Knowledge, educational level, religious beliefs, personal experiences, and media influence all play roles in shaping community perceptions of the COVID-19 vaccine. To enhance vaccine acceptance, it is essential for educational and communication programs to be tailored to the social, cultural, and religious backgrounds of the community. These efforts should be based on delivering accurate, comprehensive, and equitable information about the benefits and safety of the COVID-19 vaccine. Collaboration with community leaders and religious figures, as well as improving information access through various media channels, can help address hesitancy and increase community willingness to be vaccinated.

This conclusion underscores the importance of a multi-sectoral and multi-disciplinary approach in addressing vaccination challenges and achieving optimal vaccination coverage in the community.

SUGGESTION

Based on the findings from previous studies on the factors influencing community perceptions of the COVID-19 vaccine, the following recommendations for future research are proposed:

Expanding the Scope of Demographic Variables

Future research should aim to include a more diverse range of demographic variables, such as socio-economic status, geographic location (urban vs. rural), ethnicity, and age. Understanding how these variables interact with knowledge, educational level, religious beliefs, and personal experiences can provide a more nuanced view of the factors influencing vaccine perceptions.

Longitudinal Studies on Knowledge and Attitudes

Conduct longitudinal studies to track changes in knowledge and attitudes toward the COVID-19 vaccine over time. This approach can help identify shifts in perceptions as new information emerges and as public health campaigns evolve, providing insights into the long-term impact of educational interventions and public messaging.

Effectiveness of Targeted Educational Programs

Evaluate the effectiveness of targeted educational programs designed to address specific misconceptions and concerns related to the COVID-19 vaccine. Research should focus on developing and testing tailored communication strategies for different demographic groups to improve knowledge and acceptance.

Role of Religious Leaders and Institutions

Investigate the role of religious leaders and institutions in influencing vaccine acceptance within communities. Studies should explore how collaboration with religious figures can enhance the effectiveness of public health campaigns and address vaccine hesitancy rooted in religious beliefs.

Impact of Personal and Family Experiences

Further research should examine the impact of personal and family experiences with COVID-19 on vaccine acceptance. Understanding how direct and indirect experiences with the disease affect attitudes toward vaccination can help in designing support mechanisms for those most affected.

Social Media and Misinformation Dynamics

Analyze the dynamics of social media and misinformation related to the COVID-19 vaccine. Future studies should focus on how misinformation spreads, the role of social media platforms in shaping public perceptions, and effective strategies to counter misinformation and enhance trust in vaccines.

Community-Based Participatory Research

Engage in community-based participatory research (CBPR) to involve community members in the research process. CBPR can help identify local concerns, cultural nuances, and effective communication strategies, ensuring that research findings are relevant and applicable to the community's needs.

Assessment of Policy Interventions

Assess the impact of policy interventions, such as mandates and incentives, on vaccine uptake. Research should explore the effectiveness of different policy approaches in various contexts and the potential ethical considerations involved in implementing these policies.

Global Comparative Studies

Conduct comparative studies across different countries to understand how cultural, political, and healthcare system differences influence vaccine perceptions and acceptance. Such studies can provide valuable insights into best practices and lessons learned from various international contexts.

Integration of Psychological Factors

Integrate psychological factors, such as risk perception, trust in healthcare systems, and cognitive biases, into research on vaccine perceptions. Understanding the psychological underpinnings of vaccine hesitancy can lead to more effective interventions tailored to address these concerns.

These recommendations aim to build on the existing knowledge base and provide actionable insights for future research endeavors, ultimately contributing to more effective strategies for improving vaccine acceptance and public health outcomes.

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