

Awareness, Social Media, Ethnicity and Religion: are they Responsible for Vaccination Hesitancy? A Systematic Review with Annotated Bibliography

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Abstract:

Vaccination is not only a medical term rather it is framed under socio-cultural perspectives and debates as well. Human history is full of illnesses caused bacteria and viruses killing millions of people including children and adults. Technological development in the health sector enabled to combat pathogenic illnesses through different methods whereby vaccination is one of them. However, it is a dilemma that vaccination has faced many barriers including logistical but most importantly socio-cultural and religious. In 2019, WHO revealed vaccine hesitancy as a leading threat to health throughout the globe even in the top 10. This study looks to analyze peer reviewed literature to explore barriers to vaccination. Methodologically, this is desk research and systematic review. Numerous databases were searched with key words and purposively studies were

selected for this study. A total of 17 most relevant studies were sampled. Findings show that there are four major factors hindering vaccination. 1st cultural and ethnic background matters whereby religion and the belief system are predominant factors. 2nd awareness and educational variables are also there, for instance, it is noted that many people are not aware of vaccination process specifically in case of HPV vaccination. 3rd social media plays a pivotal role whereby misinformation internalizes negative attitudes and misperceptions about vaccines. 4th social media is a key dimension whereby disinformation and misinformation are communicated through platforms whereby some are intentionally circulated. It is suggested that culturally relativism perspective can be helpful in increasing vaccination percentages. It pertains to intervention through culturally approved methods, for example, sensitizing the ethnic backgrounds through their leadership. In addition, vaccination tracking, media campaigns, focus on school level education to include health related course can be helpful.

Introduction

Vaccination is one of the medical advancements of the 20th and 21st centuries which proved to be extremely effective in preventing deadly and disabling diseases including polio, measles, pneumonia (WHO, 2017) and most recently COVID-19 (WHO, 2021). In 2019, WHO revealed vaccine hesitancy as the leading threat to health throughout the globe (Wilson, Wiysonge, 2020). Most importantly, numerous social, cultural, and psychological dimensions of vaccination in this regard, are barriers (socio-cultural and psychological) are the most debatable aspect regarding vaccination. Throughout the globe it has been recorded that there are numerous negative perceptions, attitudes and propagandas related to vaccination. Religion, social media, and educational factors specifically are more notable factors. For example, Afghanistan and Pakistan are two key examples in the case of polio whereby due to the mentioned factors these countries are still not free of it, whereas the rest of world is free of polio (WHO, 2014).

So far, poor, developing and strictly religious regions are labelled for having poor levels of vaccination. However, MacDonald (2015) noted that there is vaccination hesitancy among parents in the United States. Majid and Ahmad (2020) assert that the discussion about barriers to vaccination is multifaceted. For example, very recently it has been noted that many parents reject vaccinating their children. In short, the major factors

to reject and hesitate to vaccination include lower literacy and education, rumors and misinformation (Closser, 2011; Shahnaz, 2015); lack of social mobilization (Cohen *et al.*, 2011); misperceptions of vaccine containing *haram* components which specifically prevails among Muslim populations (Khan, 2015).

Immunization programs are devised and guided by different agencies to promote the culture for vaccination. This leads to an important debate as there are two groups; 1st the vaccinators; and 2nd the non-vaccinators. The non-vaccinators are young adults as well as including parents who hesitate to not vaccinate their children. The Netherlands includes in list of countries where young adults and parents oppose vaccination. For example, Harmsen *et al.*, (2015) opines that the difference in response to vaccination is noted across ethnic backgrounds, for example, people from Morocco and Turkey. Hak *et al.*, (2004) found that among 283 parents as many as 31 (which constitutes 11%) had no intention to agree with new vaccination strategies. Borggreve, Timen (2015) cite about the measles outbreak in The Netherlands in 2013-14. It was evident that perception of parents that diseases like measles are any more was associated with not vaccinating their children leading to the epidemic. This study in this regard is desk research and systematic review based upon following the research questions:

What is the role of lack of awareness issues and lack of education in hindering vaccination?

How do social media and internet contents affect the attitude and perception of the public towards vaccination?

What are the reasons and how do ethnic and religious factors affects the vaccination?

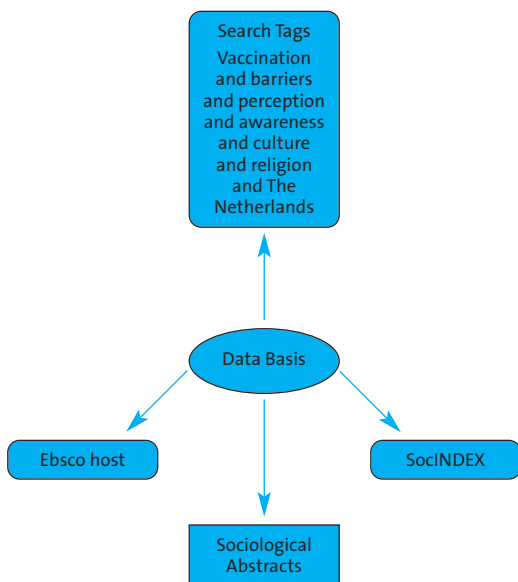
Methodology

This study is farmed as desk research. A systematic literature review methodology was adopted.

High-quality data bases were searched for identification of relevant studies. Data bases searched included PUBMED; Sociological Abstracts; WoS; SCOPUS; SocINDEX (Ebscohost).

SocINDEX (Ebscohost) for example produced 315 results. A searching approach was adopted whereby most relevant studies were sampled. Sociological Abstracts showed 644 results.

A total of 17 most relevant studies were sampled. The search was manual whereby the purpose was the select most relevant studies to the topic.



Results

Awareness and Education

Lee *et al.*, (2018) investigated about awareness; knowledge; social norms; vaccination intentions. It was found that among women awareness about HPV is very low and they even don't know about the disease and its potential

complications. Anderson (2014) researched about barriers to child immunization. One unique finding is mentioned as confusing schedules. In American society there are many migrants who don't have an adequate degree of education. Therefore, lack of education among migrants even in developed regions can be labeled as barrier to vaccination. To Anderson awareness and knowledge is also a barrier regarding healthcare workers. The indicators are inadequate training; procedural mistakes causing severe pain at the sight of injection; awareness of the importance of their role in vaccination.

Ethnic and Cultural Barriers

Waters *et al.*, (2012) asserts that Human papillomavirus (HPV) is a viral illness preventable through care and safety in relationships as well as through vaccination. However, there are barriers to its vaccination, for example, the perception among individuals in monogamous relationships. Monogamy is a cultural aspect or marital relationship pattern. Thus, the perception that in monogamous relationship there is less likelihood of catching Human papillomavirus (HPV) is barrier to vaccination.

Vielot *et al.*, (2020) noted that parental opposition is a significant barrier to vaccination for children in United States including vaccines of meningococcal conjugate, tetanus-diphtheria-acellular pertussis and others as well. Parental concerns included pain after the vaccination, as well as temporary side effects such as fever and rash. In addition, it was also evident that lack of religious and exposure to misinformation regarding sexual behaviors alteration due to vaccination were key barriers.

Harmsen *et al.*, (2015) is specific to The Netherlands where the study showed that anti-vaccinators often belong to specific ethnic backgrounds whereby culture is sort of determining factors to not opt for vaccinating their children. These ethnic backgrounds include parents from Morocco and Turkey.

Anderson (2014) asserts about religion as well. For example, among Muslim communities religion is a barrier to vaccination; as a matter of fact, that there are certain misperceptions specifically regarding polio vaccination containing Haram components.

Alies *et al.*, (2014) found that ethnicity and cultural background mattered a lot during the 2013-14 measles outbreak whereby the majority of culprits were parents who had not vaccinated their children. It was evident that in those children who were not vaccinated their parents were born outside The Netherlands which validates the argument that in certain ethnicities vaccination is not preferred.

Perception Related Barriers

There are some barriers that are not influenced by culture or religion but rather are independent in nature. For example, Zimmerman *et al.*, (2007) asserts that some parents believe that immunization (if too much) will affect their child's naturally growing immune system and this perception even prevails among highly educated communities. To Zimmerman and colleagues, there is also a misperception among parents that diseases which killed a lot of children are now disappearing and modern medicine can effectively deal with them as well. This leads to rejection of vaccination as well. The work of Borggreve, Timen (2015) is also important in this regard. In The Netherlands, for example, in the 2013-14 an outbreak of measles took place whereby parental perception that a disease, like measles, was associated with not vaccinating their children leading to the epidemic.

Social Media and Vaccination Hesitancy

Wilson, Wiysonge (2020) assert that social media sometimes is used as a highly organized platform to campaign against vaccination. The most important discussion cited from social media about vaccination is its safety, and people and parent's attitude and perception towards vaccination is influenced by it. MacDonald, Eskola, Liang (2015) are of the opinion that anti-vaccination messages are common on social media. This pattern is observed in the last decade specifically in developing region as well as Wilson and Wiysonge (2020) adds that the COVID-19 pandemic is one of the mostly debated aspects on social media whereby disinformation and misinformation spread in seconds throughout the globe every day. Wilson and Wiysonge label it as a long tail effect because the message spreads and on social media platforms there is a lack of check or control over it.

Conclusion

Vaccination is the 20th and 21st centuries medical advancement.

It is a medical and health related aspect; however, the most debated are its social, cultural and religious dimensions. Vaccination rejection is a common phenomenon as WHO in 2019 labeled it as one of the leading threats human health. This study framed under desk research and a systematic review approach investigated factors contributing to vaccine hesitation. It concluded that there are 4 major dimensions of rejection of vaccination. 1) cultural and ethnic background matters whereby religion and the belief system are predominant factors. 2) People who came from different regions into a particular locality are less careful about vaccinating their children. 3) Awareness and educational variables are also there, for instance, it is noted that many people are not aware of vaccination process specifically in the case of HPV vaccination. Even the medical staff sometimes are unaware of the situation and dealing with it effectively. 4) Social media plays a pivotal role whereby misinformation internalizes negative attitudes and misperceptions about vaccines. Perceptions that are not guided by culture and religion are also barriers to vaccination, for example, perceiving that some illnesses don't prevail now and so vaccinating is not that important as well as perceiving that immunization weakens the immune system.

Suggestions

Linguistic priorities must be considered and could be a good approach, for example, using local leadership of communities. It is evident that across the globe numerous ethnicities and people from other cultures reside in the same areas; therefore, there is need of effectiveness intervention through their own communities and awareness under cultural relativism perspective.

Vielot *et al.*, (2020) suggest a comprehensive intervention strategy, for example, school level intervention (making vaccination process part of education of children); advertisements and campaigns about vaccination; tracking systems providing convenience; reminder programs or in a nutshell social mobilization perspective for vaccination.

Brenner *et al.*, (2001) suggest that a personal physician can be helpful in the vaccination pro-

cess due to the fact that parents and people have more trust on a physician. If personal physicians are sensitized for talking regarding vaccination better results can be achieved.

References

1. VAN LIER A, VAND DE KASSTEELE J, DE HOOGH P, DRIJHOUT I, DE MELKER H (2014) Vaccine uptake determinants in The Netherlands, *European Journal of Public Health*, 24 (2): 304–309, <https://doi.org/10.1093/eurpub/ckt042>. This source is very relevant in accordance with nature and locale of the study as it was carried out in Netherlands. The study explores factors which can increase percentage of vaccination in Netherlands. The source is also credible one.
2. ANDERSON E L (2014) Recommended solutions to the barriers to immunization in children and adults. *Missouri medicine*, 111(4), 344–348. This study provides some useful suggestions regarding barriers to immunization of children. Immunization rejection is a key dimension to vaccination. The source is credible as the work is published in a journal with good impact factor.
3. BORGGREVE S, TIMEN J A (2015) Barriers encountered during the implementation of a policy guideline on the vaccination of healthcare workers during the 2013–2014 measles outbreak in The Netherlands: a qualitative study. *BMC Res Notes* 8, 780. <https://doi.org/10.1186/s13104-015-1756-x>. BMC is highly credible publication platform whereby this study focused on policies related health affecting the vaccination process. The study was specific to Netherlands where an outbreak of measles was noted in 2013–14.
4. BRENNER R A, SIMONS-MORTON B G, BHASKAR B *et al*, (2001) Prevalence and predictors of immunization inner-city infants: a birth cohort study. *Pediatrics*. 2001;108 (3):661–670. This work was published by a group of colleagues under a project on child's health. The study researched about the parental perception and other indicators working as barriers to the immunization process of infants.
5. CLOSSER S (2011) We Can't Give Up Now: Global Health Optimism and Polio Eradication in Pakistan. *Medical Anthropology*. 31 (5): 385–403. This investigated about Polio in Pakistan whereby Pakistan is one of only 3 countries where Polio disease is still not eradicated. The study explores numerous socio-cultural and religious barriers to Polio Vaccination in Pakistan.
6. DUPAS P (2011) Do Teenagers respond to HIV Risk Information? Evidence from a field experiment in Kenya. *American Economic Journal: Applied Economics*. 3(1): 1–34. This study investigated knowledge and awareness about HIV prevention in Kenya as important to the current research in terms of awareness and education about viral diseases.
7. HAK E, SCHONBECK Y, DE MELKER H, VAN ESSEN G A, SANDERS E A (2005) Negative attitude of highly educated parents and healthcare workers towards future vaccinations in the Dutch childhood vaccination program. *Vaccine*, 23(24), 3103–3107. <https://doi.org/10.1016/j.vaccine.2005.01.074>. This study is published in a journal specifically related to vaccine development and studies related to vaccination. This study was important for my review because it informs about negative perception towards vaccination even among educated parents.
8. HARMSEN I A, BOS H, RUITER R A C *et al*. (2015) Vaccination decision-making of immigrant parents in The Netherlands; a focus group study. *BMC Public Health* 15, 1229 (2015). <https://doi.org/10.1186/s12889-015-2572-x>. This study focused on Netherlands which again is important specifically in context of immigrants whereby socio-cultural differences leads rejection of vaccination.
9. KHAN T (2015) Pakistan's fight against polio clashes with the battle against the Taliban. *The National January 20*, 2015. This was report from Pakistan whereby Polio vaccination is mostly discussed aspect.
10. HAEOK L, DEOGWOON K, KIANG N-CH, COOLEY P, MARY E, LING S, THIEM L, KAN P, PHALA CH, JEROAN A, MIN-JIN K (2021) *Ethnicity & Health*. Apr 2021, Vol. 26 Issue 3, pp. 379–391. 13p. 1 Diagram, 5 Charts. DOI: 10.1080/13557858.2018.1514455. This study is about ethnic factors as a barrier to vaccination specifically in context of ethnic backgrounds in the USA

- and their rejection to vaccinate due to religious perceptions.
11. MACDONALD N E, ESKOLA J, LIANG X (2015) SAGE Working Group on Vaccine Hesitancy. *Vaccine hesitancy: definition, scope and determinants*. *Vaccine* 2015;33: 4161–4. doi:10.1016/j.vaccine.2015. 04.036. Published in highly relevant journal this study investigated into vaccine hesitancy in context of contributing factors such as educational, cultural and social.
 12. MAJID U, AHMAD M (2020). The Factors That Promote Vaccine Hesitancy, Rejection, or Delay in Parents. *Qualitative Health Research*, 30 (11), 1762–1776. <https://doi.org/10.1177/1049732320933863>. This study is research on parents who do not like to vaccinate their children due to social media related factors along with the flaws in the system of vaccination contributing.
 13. VIELOT N A, ISLAM J Y, SANUSI B, MYERS J, SMITH S, MEADOWS B, SMITH J S (2020) Overcoming barriers to adolescent vaccination: Perspectives from vaccine providers in North Carolina. *Women & Health*, 60 (10): 1129-1140. doi:<http://dx.doi.org/10.1080/03630242.2020.1802639>.
 14. WATERS A V, MERRELL L, K, THOMPSON E L (2021) *Journal of Women's Health* (15409996). May 2021, Vol. 30 Issue 5, p705-712. 8p. DOI: 10.1089/jwh.2020.8724.
 15. WHO (2013) WHO Poliomyelitis. Available at: <http://www.who.int/mediacentre/factsheets/fs114/en/>. (Accessed on 19/10-2021). This article was important for the current study as WHO have vast experience of vaccination, its production and social and cultural dimensions of it.
 16. WILSON S L, WIYSONGE C (2020) Social media and vaccine hesitancy *BMJ Global Health*; 5:e004206. Wilson and Wiysonge are professors and medical health professionals who investigated the role of social media in spreading misinformation and disinformation about vaccines.
 17. ZIMMERMAN R K, WOLFE R M, FOX D E *et al.* (2005) Vaccine criticism on the worldwide web. *J Med Internet Res*, 7(2):e17. This study is about the role of internet and social media affecting the attitude and perception of people about vaccination.