

Available Online at EScience Press

Journal of South Asian Studies

ISSN: 2307-4000 (Online), 2308-7846 (Print)

<https://esciencepress.net/journals/JSAS>

Hesitancy from Covid-19 Vaccination: A Study of Medical Discourses pertaining to Challenges encountered by the Pakistani Physicians

^aShafaq fayyaz, ^bSumra M. J. Satti*

^a Assistant Professor, Department of English Language and Literature, University of Lahore, Lahore Campus, Pakistan.

^b Ph.D. Scholar of English Linguistics, Department of English Language and Literature, University of Lahore, Lahore Campus, Pakistan.

*Corresponding Author Email ID: sumraashfaq610@gmail.com

ABSTRACT

Pakistani medics faced many hesitancy issues among the general public regarding vaccination during the upsurge of COVID-19, which remained prevalent not only in Pakistan but across the world. This paper attempts to describe the challenges encountered by Pakistani physicians regarding the anti-vaccination approach of the general public based on certain superstitions. To achieve the objective, this paper plans to obtain data from various medical journals and editorials. This research is qualitative and descriptive in nature. The study is guided by the Socio-cognitive Model by Van Dijk (2008) as it confiscates the ideological connection between discourse, society, and apprehension into consideration. Language is viewed as social practice from the perspective of CDA, which signifies the particular interest in the course of actions through which language expresses power relations and ideologies (Fairclough, 2015). This study intends to highlight the ideological perspective of medical discourses influenced by the self-created superstitious beliefs of the general population.

Keywords: Hesitancy, Covid-19-Vaccination, Study, Medical discourses, Challenges, encountered, Pakistani Physician.

INTRODUCTION

The worldwide spread of Covid-19 emerged in Wuhan, China in the mid of December 2019. The first victim was diagnosed at Karachi in Pakistan on February 26, 2020. The patient had a travel history from Iran. This viral disease has gulped so many precious lives within a very short span not only in Pakistan but around the globe. This lethal virus was announced as public health emergency of international concern (PHEIC) on January 30, 2020 because of its vast spread all around the world. The seriousness of this infection created hype as no remedy was available. Resultantly, all the sections of society and State i.e., education, business and especially medical were affected. This situation was uncertain and equally unpredictable because no one was prepared for this disastrous situation. Among all, physicians and paramedics faced a major onslaught as they acted as front-line soldiers without weapons in the war. Many medics have lost their lives in fighting against viral

disease. One of the variants of acute respiratory syndrome was diagnose for the very first time in UK on December 14, 2020 which went viral in more than sixty-four countries (Umair *et al.*, 2021). The discrete vaccine programs were worked out by World Health Organization (WHO) and estimated around 2-3 million deaths would be prevented annually and if the coverage of vaccine is improved with effectiveness, it could save 3.5-4.5 million deaths at global level. This pandemic became the main cause of multiplicity of socio-economic problems in Pakistan due to underdeveloped health care system, domestic politics and struggling economy (Haqqi *et al.*, 2021). Moreover, the complete lockdowns during Covid-19 badly affected the already developing economy of the country. In addition, the lack of resources and capacity for Covid-19 testing proved more harmful than socio-economic impacts of this pandemic. In Pakistan, it was initially believed that the strong immunity system of public and extreme weather of the country would

forestall the pandemic to penetrate. It would rather it would rather get eliminated unlike other in countries such as United States, Italy and Iran. However, this misconception proved wrong by the huge destruction caused in a very short span of time.

Since this infectious disease was not confined or restricted to few countries rather it got access to the different parts of the world within no time. In this regard, there was a concept among few nations racing to get vaccinated first and the profound global competition of vaccine developers was also running in a similar trend. Once the vaccination became available in a country, another issue emerged which was hesitancy from Covid-19 vaccination. It resembles to the notion that initially people were not ready for the pandemic and later they showed reluctance towards Covid-19 vaccination.

The present study explores the underlying reasons among common masses for such hesitancy against the fatal viral infectious disease in Pakistan as it seemed life-saving and the provocations encountered by the Pakistani physicians in the process of vaccination.

Vaccine reluctance is considered as ubiquitous phenomenon that prevails in both the developing and developed countries (Khattak *et al.*, 2021). Some degree of anti-vaccination approach has been found in almost 90% of the countries (Murphy *et al.*, 2021). It is considered as the ultimatum to the health concerns of the public around the world by the World health organization (WHO). The current study is likely to be helpful in understanding, attitudes and behaviours towards Covid-19 vaccine. Acknowledging the vaccine hesitancy (Covid-19) could support the influential design in campaigns of educating the public desiring to make improvement for the positive response towards acceptance for vaccine. (Murphy *et al.*, 2021).

Where a lasting crisis has been caused by the infectious disease to humanity a hope of relief by vaccines has not only given a ray of hope rather has introduced new sets of challenges. This study highlights the challenges faced by physicians and medics as people were intertwined with complexity, vagueness and hesitancy issues.

STATEMENT OF THE PROBLEM

Many people are hesitant from getting vaccinated by showing unwillingness towards Covid-19 vaccination due to the rumours and the conspiracy theories against it. This study aims to uncover the myths and the associated psychological and social factors accountable

for public's perception adhering anti-vaccination approach. Van Dijk's socio-cognitive model (2008) basically stems from Critical Discourse Analysis (CDA) which takes language as social practice. This paper focused on linguistic analysis of myths, ideological perspectives and the associated hidden factors to resolve the problem of hesitancy. Since vaccines are important and trustworthy interventions for public so addressing the reasons behind public's hesitancy problem are required to be identified to curb the lethal virus.

SIGNIFICANCE OF THE STUDY

This study is novel in the domain of medical discourses as it elucidates the ideological perspective behind underlying reasons of common masses leading to hesitancy from Covid-19 vaccination and the provocations encountered by the Pakistani physicians in the current scenario. The present study is unique because of its integration of cognitive (Psychological barriers) and Societal (social factors) inputs which are collaboratively strengthening the hesitancy and anti-vaccination approach of the common masses.

It seeks how relationship is built between cognition (Psychological barriers), discourses (medical discourses) and society (common masses) from the Socio- cognitive Model by Van Dijk (2008)

RESEARCH OBJECTIVES

Following are the aims and research objectives of the study;

- To investigate the basic underlying reasons of hesitancy in common masses from Covid-19 vaccination through medical discourses in Pakistan
- To highlight the challenges encountered by Pakistani doctors while handling unwillingness of the public towards Covid-19 vaccination.

RESEARCH QUESTIONS

Following are the research questions of the present study;

- What are the underlying reasons of hesitancy in common masses from Covid-19 vaccination through medical discourses?
- How the Pakistani Medics handled the anti-vaccination approach of the public pertaining to Covid-19 Vaccination?

LITERATURE REVIEW

Vaccine hesitancy is viewed as universal phenomenon in many parts of the world. It refers to delayed acceptance or denial from vaccination in spite of the availability. There are many ideological reasons behind such behaviours and attitudes because immediately after announcing Covid-19 as a pandemic, various kinds of wild conspiracy theories sprouted through different channels categorically social media.

In a study, it is mentioned that conspiracy theories against covid-19 vaccination are playing a negative role through different sources in Pakistan. It is the primarily the main reason that people felt reluctant as so-called narratives are generated by some people who have been playing an active role in spreading fake news everywhere without acquiring authenticity. Moreover, vaccine hesitancy became a biggest challenge due to these baseless theories and political figures also raised objection by declaring it conspiracy against Muslim countries. This study also gave glimpse of the past that failure to eliminate polio from the country is the consequence of such theories which could harm majority of the people. Unfortunately, a conspiracy theory against Covid-19 vaccination is trending in Pakistan. It is demonstrated that political figures, commentators and columnists believed and claimed that this lethal virus is a grand illusion for Islamic nations and it is to pave the way for Jews to rule the world. In this regard, social media has played an active role for circulating such fake news all over the world. It has emphasized on the situation in a country where hesitancy from vaccination is considered to be the barrier to eradicate vaccine-preventable diseases and upcoming vaccine programs are badly affected by conspiracy theories which are actually planting seeds for reluctance from vaccination. It has highlighted the threat of disparate falsehoods against covid-19 which is increasing with every passing day; media should hold a prime responsibility to contribute professionally and sensibly especially in running health crisis.

Moreover, it has shown that religious beliefs are conformed to conspiracy narratives so Islamic scholars should address the religious elements by providing awareness to the common masses. The prime reason behind such ideology is that majority of the Pakistani people regards or follows the suggestions or advices of Islamic scholars to a great extent. Besides this, it is stated that public awareness of infectious diseases is resultant of confidence about vaccines.

In another study, it is elucidated that the conspiracy narratives oppose the norms, perceived to be influenced by the ones who are in ruling position act in accordance with the few people or a group with limited number and they have no scientific proof to be advocated (Freeman *et al.*, 2020). In the past, many conspiracy theories remained prevalent but at the present, hesitancy from vaccination residues the biggest provocation for Pakistan. This study included the factors which are considered for hesitation such as poor-quality vaccine and the rumours about the active virus in the vaccine itself and considering the vaccination program as western conspiracy against Islamic countries. Millions of Pakistanis got the access to such so-called fake narratives through the popular spread on social media.

The rumours and the false news about Coronavirus created misconception for the public understanding resultantly provocations to attain the public confidence in being vaccinated. Another misleading perception of the people is stated in this study that the older people are affected by the virus only. It created misleading effects for the younger people to neglect the preventive measures (Zakar *et al.*, 2020).

This study also highlighted the most common comments of Pakistani people; "There is no coronavirus", "Is the coronavirus a reality", "Is the coronavirus a reality or conspiracy of America for selling vaccine and medicines"? These types of intrigues were popular in the remote areas of Pakistan where a confined number of affected individuals was notified (Shoukat & Jafar, 2020).

It is described that a country with a weak or frangible healthcare system can sustain its spread only by vaccinating the common masses against Coronavirus. The other probable reasons for reluctance from vaccination are also mentioned such as convulsion or intricacy in the future, insufficient stockpile of vaccine, vagueness in the efficacy of vaccine, misdirecting notion of not being victimized by Coronavirus or unable to purvey the outlay of vaccine (Robertson *et al.*, 2021). It has also mentioned about the video of Para-medical staff (nurse) got collapsed right after getting vaccinated and the outbreak of her sudden death aggravated the conspiracy theories against Covid-19 vaccine but those videos lack reality (Asghar, 2021).

In another study, it is depicted that Covid-19 Pandemic may have touched a critical turn as new step-up plans and look-up strategies regarding the spread of SARS-CoV-2 apart from the development and access of the

vaccine, it is essential to make the common masses prepared to get vaccinated. Basically, social media is playing a very active role in circulating different conspiracy theories which created ungrounded fear in the minds of the people in Pakistan. In this study, it is recommended that some necessary steps should be taken by the health care authorities to get hold of these groundless claims regarding vaccination campaigns in Pakistan.

Much of the research is available on the statistics of the common masses ready to get vaccinated and the ones who showed reluctance for Covid-19 vaccination but ideological reasons remained unidentified and challenges faced by the Pakistani doctors in this pandemic also stayed untitled. The researcher intends to identify ideological reasons for such reluctance or unwillingness towards Covid-19 vaccination from a Socio-cognitive Approach (2008) which identifies the relationship between cognition, discourse and society into account and attempts to build some ideological connection between them. Besides this, the researcher aims to highlight the provocations encountered by the Pakistani physicians while managing attitudes of common masses. Moreover, the researcher plans to examine the strategies opted by the Pakistani doctors to make the public ready to get vaccinated by addressing their unsubstantiated perspectives which they acquired from their environment in the current scenario.

RESEARCH METHODOLOGY

This section dealt with the research methodology of the present study which employed qualitative method to carry out critical discourse analysis of medical discourses regarding Covid-19 vaccination. This study focused on the myths of people, superstitious beliefs and conspiracy theories which have spread the air of controversy between the common masses and the Pakistani Physicians. The present study aimed to uncover the self-created fears and baseless beliefs which enhanced the anti-vaccination approach all over

Pakistan. This paper attempts to identify the ideological reasons for such reluctance towards Covid-19 vaccination through the examination of medical discourses from the perspective of Van Dijk's Socio-cognitive model (2008).

The present study has opted Van Dijk's (2008) model as it seems the most suitable one because it deals with discourses, cognition and the society. In accord, medical discourses, psychological and social factors were analysed through Socio-cognitive model to reveal the hidden ideology behind such unwelcoming response of the common masses.

CONCEPTUAL FRAMEWORK

The conceptual work has been mainly inspired by A Socio-cognitive Model of van Dijk (2008) stems from critical discourse analysis (CDA) and it covers all the three aspects of the present study i.e., discourses, cognition, society and the ideological connection between them. The objective of this study is to describe the myths of people, underlying ideological perspective behind superstitious beliefs and the conspiracy theories of anti-vaccination approach resulting hesitancy in common masses from Covid-19 Vaccination. Furthermore, the provocations encountered by the Pakistani Medics are also highlighted while handling unwillingness of the public towards Covid-19 vaccination. The common masses were influenced by the baseless beliefs and became victim of conspiracy theories in Pakistan. Consequently, they were reluctant towards the Covid-19 Vaccination campaigns which remained the major cause of the spread of this lethal virus in the whole Country. By applying Socio-cognitive Approach (2008), through the examination of extracts from the selected medical editorials, the researcher explored the factors which contributed to enhance the obstacles for the Pakistani Medics to tackle the unknown fears of common masses towards Covid-19 Vaccination along with the strategies of the Pakistani Physicians confronting public's unwelcoming response towards its acceptance. This framework has guided the study to maintain its focus and inter-relationship between the concepts regarding hesitancy issues.

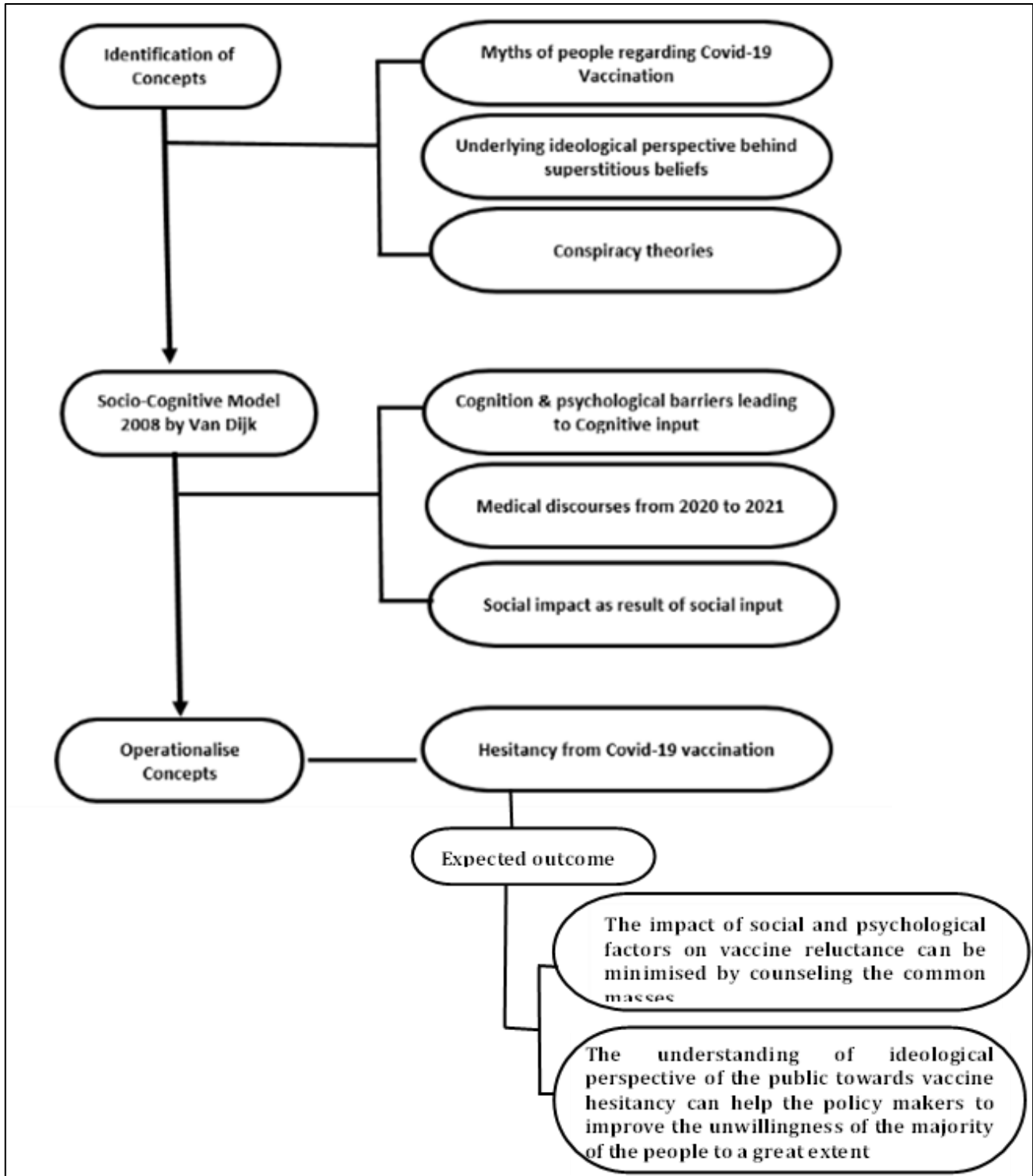


Figure 1. Conceptual Framework
 Source: Drawn by the author.

Paradigm

This study is Qualitative in method, technique and procedure. It falls under Interpretivist research philosophy. It has followed a systematic

methodological procedure to carry out Critical Discourse Analysis (CDA) of selected discourses from the medical editorials. It is a bottom-up approach and extracts have been collected from the relevant studies.

Sampling

The representative samples have been collected from three medical journals; two from the Pakistani journals and one from the International Journal released from 2020 to 2021. These journals were selected because of their relevance to the current issue of hesitancy of common masses towards Covid-19 Vaccination

Sampling Technique

The researcher aims to use convenience sampling to utilize the available resources.

Research Design

The research design of the present study is textual Analysis because the researcher has gathered the data from the texts of medical journals dealt with the anti-vaccination approach of the common masses. Van Dijk's (2008) Socio-cognitive model takes the relationship between cognition, discourse and society into account.

Rationale for using Socio-cognitive Model

The logical reason to use this model is to show the relationship between cognitive and social inputs i.e. What psychological barriers of individuals towards Covid-19 vaccination leaves an impact on society as a whole.

The researcher plans to gather data from the selected medical discourses and looking forward to analyze those extracts linguistically from the perspective of critical Discourse analysis in general and socio-cognitive model in particular.

Data Analysis

This section includes analysis of the data which was collected to sort out answers to the research questions. In the process of analysis, extracts were taken from the texts of the medical journals concerning with the hesitancy issues towards Covid-19 vaccination from 2019 to 2021. To attain a great understanding of how the Pakistani physicians encountered the provocations during Covid-19 Pandemic and the unwelcoming response of the public due to self-created fears and baseless beliefs towards anti-vaccination approach. There were many psychological barriers which compelled the common masses to show reluctance towards vaccination as these barriers collaborated with social factors to leave an influence on society as a

whole. Like the spread of disease, its rumours also spread everywhere. The researcher has opted Dijk's Socio-cognitive model (2008) to unearth the ideology behind myths of the common masses and conspiracy theories against vaccination campaigns. This model covers psychological and social factors because it deals with cognition and society. For example, how cognition affects discourses and reveals an impact on society. The present study has focused on the myths of people who remained reluctant to get vaccinated and the air of controversy between the doctors and the public remained dominant during the spread of Pandemic Covid-19.

By relating it to the past, Polio campaign was started to eliminate even a single case from Pakistan and the government played an important role to arrange polio workers and put maximum efforts to facilitate the public to eradicate its roots from the country. There is basically no cure for polio but it can be eradicated by immunization. It is generally believed that children under the age of 5 years might contract the disease and should be immunized as per the directions. Unfortunately, misleading advices and rumours pertaining to polio never come to an end especially in Pakistan where people easily start believing on the myths and superstitious beliefs. Conversely, India is officially a polio-free country but still it is mandatory for the children under five years to get vaccinated as it is still found in some countries (Health Analytics Asia, 2020). There were some myths regarding polio vaccine i.e., Vaccine should not be given multiple times, it has side effects as it is unsafe and lead to other complications and it contains anti-fertility agents etc. According to World Health Organization (WHO), there is no scientific evidence for these baseless beliefs rather this vaccination is safe by all means. UNICEF pointed that the oral vaccine is safe, effective and the WHO-recommended vaccine for polio eradication all over the world.

The pandemic covid-19 had disastrous effects not only in Pakistan but all around the world. No one was actually ready for this situation and doctors and paramedical staff suffered the most as they were acting like front-line soldiers having no weapons in their hands. There was no treatment available for almost one and half year and the many precious lives were lost. Covid-19 vaccination is available now but it seems that history is repeating itself. The Pakistani people

became victimized against covid-19 vaccination same as it happened for polio, small pox and measles vaccination. The general public is reluctant to get vaccinated due to number of psychological, social, religious, political factors and conspiracy theories also remain the major cause for reluctance.

In this backdrop, the present study has focused on the medical discourses which reveal the ideological perspective towards anti-vaccination approach of the common masses. The Pakistani physicians have mentioned in the medical discourses like what they have heard from the patients when they were counselled for vaccination to secure their lives. Following are the examples of the extracts highlighting uncertainty and misleading advices towards Covid-19

Example 1: "Coronavirus is conspiracy of America for killing Muslims all over the world"

Example 2: "Coronavirus cannot harm Muslims"

Example 3: "A Coronavirus infected person can never return to home once he went to hospital"

There is no scientific evidence behind such beliefs but seems like virus is being politicized by adhering it to the interest of the western countries provoked uncertainty and confusion which somehow resulted to the refusal of public that corona virus does not exist rather it is conspiracy of America to kill all the Muslims around the globe. Some people called it "biological war" though here is not any strong foundation behind it. In example 2, religious factor can be observed that the Pakistani people are inclined towards religion to a great extent so the common myth was heard that this virus cannot affect Muslims. It somehow caused psychological barrier towards getting vaccination. Being Muslims, another reverent provocation for the Pakistani people is the notion of "**HALAL**". Muslim people only use those ingredients which are allowed in Islam. When doctors asked patients to get vaccinated as they were more curious about the formation and the processing of vaccines and particularly regarding the ingredients used in them. In this regard, a visit was conducted by the representative of the Indonesia and conducted an audit (HALAL) of a vaccine factory making Chinese vaccine Sinovac and announced that Muslims can take this vaccine by checking out the whole procedure and particularly the ingredients used it. In example 3, another myth can be noticed that people believed that if someone got infected, he would have stayed at home because once if went to hospital,

he could never come back due the treatment of the lethal virus. It is baseless belief because a patient can be monitored by checking his/her saturation and pulse rate time and again and if someone feels suffocated so oxygen can be provided according to the condition of the patient. There are some other myths which created challenges for the doctors to handle patients by convincing them that there is no harm or side effects for vaccination.

Example 4: (Quoted by Zakar *et al.*, 2002)

"If it is in my qismat (fate), written that I will get infected with the virus, nothing can stop it. So, we must trust Allah. Nothing will happen"

Example 5: "If you get vaccine, you will die after two years"

Experts associate the misleading information and diehard religious creeds among potential factors of people's suspicions pertaining to different vaccines for the diseases i.e., Covid-19, small pox, measles, polio etc. In spite of ideology for not being halal due to the prospective use of pork gelatin and unborn vertebrate, most of the Pakistani people were not willing to get vaccinated being victimized of conspiracy theories regarding ineffectiveness of Chinese vaccines. The inauthentic information regarding vaccination campaigns caused many Pakistani people to believe that they could survive more without vaccination.

In example 4, reliance on spirituality and prayers remained prevalent as people were more inclined towards moral convictions so they were psychologically not ready to accept the cure against the pandemic rather they prefer traditional methods of cure like eating onion, garlic or taking sanna makki kehwa etc.

In example 5, another myth can be noticed which highlighted the life expectancy of 2 years. It has no foundation because life cannot be predicted on the parameters of vaccination. The Pakistani people generally believed that this vaccine has many side effects which actually shorten the life span. The doctors kept on guiding the general public about the effectiveness of vaccine but they had to face numerous challenges to handle such patients as they were fueled up with psychological barriers which caused hindrance towards Covid-19 vaccination. Another belief was like impotence or these kinds of relevant issues are the result of vaccination because of side effects on human beings to restrict the population

density. These are all self-created fears and baseless beliefs which are integrating psychological and social factors together to leave an impact on the society as a whole.

CONCLUSION

The reluctance of the public elucidates that stimulation against anti-vaccination cannot be achieved through empirical medical-based data or the counseling of the common masses by the Pakistani physicians alone rather it is being operationalized through the integration of composite variables i.e., psychological and social factors which should be taken into contemplation by policy-makers and the governing ones who take decisions. The underlying reasons for hesitancy towards covid-19 vaccination were psychological factors shaped by moral convictions which collaborated with social factors to leave an impact on society. The Pakistan medics have played an important role by convincing the public to get vaccinated as there is no harm in it. It is mandatory to bridge up the knowledge/awareness gap through mass outreach/initiative advocacy, awareness crusades, and seminars/meetings to reduce agitation and unpredictability regarding the efficacy and safety of all types of vaccines because vaccinating the common masses is the sole way to curb the escalate of the outface of corona virus. It is highly recommended that further research should be conducted to find other significant contributors to vaccine hesitancy.

REFERENCES

- Abbas, Q., Mangrio, F., & Kumar, S. (2021). Myths, beliefs, and conspiracies about COVID-19 Vaccines in Sindh, Pakistan: An online cross-sectional survey. *Authorea Preprints*.
- Akhtar, N. (2020). COVID-19 in Pakistan: Current Scenario and Future Perspective. *Journal of Clinical & Experimental Investigations*, 11(4).
- Akhtar, N., Nawaz, F., & Bukhari, F. (2020). Increasing zoonotic infectious diseases and COVID-19: Time to rethink wild food. *Microbes and Infectious Diseases*, 1(2), 43-48.
- Ali, M., Ahmad, N., Khan, H., Ali, S., Akbar, F., & Hussain, Z. (2019). Polio vaccination controversy in Pakistan. *The Lancet*, 394(10202), 915-916.
- Asad, S., Qureshi, J., Raheem, M., Shah, T., & Zafar, B. (2021). An analytical angel: Vaccine hesitancy in Pakistan is growing.
- Baker, P., & Ellece, S. (2011). *Key terms in discourse analysis*. A&C Black.
- Balkhy, H. H., Abolfotouh, M. A., Al-Hathloul, R. H., & Al-Jumah, M. A. (2010). Awareness, attitudes, and practices related to the swine influenza pandemic among the Saudi public. *BMC infectious diseases*, 10(1), 1-7.
- Beaumont, P. (2020). Covid-19 vaccine: who are countries prioritising for first doses. *The Guardian*, 18.
- Butler, R., & MacDonald, N. E. (2015). Diagnosing the determinants of vaccine hesitancy in specific subgroups: The Guide to Tailoring Immunization Programmes (TIP). *Vaccine*, 33(34), 4176-4179.
- Coronavirus, W. N. (2019). situation report-13. 2020. *World Health Organization*, 2.
- Elbarazi, I., Al-Hamad, S., Alfalasi, S., Aldhaheeri, R., Dubé, E., & Alsuwaidi, A. R. (2021). Exploring vaccine hesitancy among healthcare providers in the United Arab Emirates: a qualitative study. *Human Vaccines & Immunotherapeutics*, 17(7), 2018-2025.
- Fairclough, I., & Fairclough, N. (2013). *Political discourse analysis: A method for advanced students*. Routledge.
- Fairclough, N. (1995). (1995a) *Critical Discourse Analysis*. London: Longman.
- Fairclough, N. (1995b). *Critical Discourse Analysis*. London: Longman
- Fairclough, N. (2006). Genres in political discourse. *Encyclopedia of language and linguistics*, 5, 32-38.
- Fairclough, N. (2013). *Critical discourse analysis*. In *The Routledge handbook of discourse analysis* (pp. 9-20). Routledge.
- Fairclough, N. (2013). *Critical discourse analysis: The critical study of language*. Routledge.
- Fairclough, N. (2014). *Critical language awareness*. Routledge.
- Gee, J. P., Michaels, S., & O'Connor, C. (2004). Discourse analysis. *An Introduction to Discourse Analysis*, 103-126.
- Harapan, H., Wagner, A. L., Yufika, A., Winardi, W., Anwar, S., Gan, A. K., ... & Mudatsir, M. (2020). Acceptance of a COVID-19 vaccine in Southeast Asia: a cross-sectional study in

- Indonesia. *Frontiers in public health*, 8, 381.
- Hassan, A. (2018). Language, media, and ideology: Critical discourse analysis of Pakistani news bulletin headlines and its impact on viewers. *Sage Open*, 8(3), 2158244018792612.
- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., ... & Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The lancet*, 395(10223), 497-506.
- Janks, H. (1997). Critical discourse analysis as a research tool. *Discourse: studies in the cultural politics of education*, 18(3), 329-342.
- Khan, M. A., & Satti, S. M. (2021). Ambiguity as Discursive Strategy: A Critical Analysis of Pakistani Political League's Selected Discourse Regarding Covid-19. *Journal of South Asian Studies*, 9(2), 142-152.
- Liu, H., Li, M., Jin, M., Jing, F., Wang, H., & Chen, K. (2013). Public awareness of three major infectious diseases in rural Zhejiang province, China: a cross-sectional study. *BMC infectious diseases*, 13(1), 1-9.
- Liu, K., & Guo, F. (2016). A review on critical discourse analysis. *Theory and Practice in Language Studies*, 6(5), 1076.
- Lockyer, B., Islam, S., Rahman, A., Dickerson, J., Pickett, K., Sheldon, T., ... & Bradford Institute for Health Research Covid-19 Scientific Advisory Group. (2021). Understanding COVID-19 misinformation and vaccine hesitancy in context: Findings from a qualitative study involving citizens in Bradford, UK. *Health Expectations*, 24(4), 1158-1167.
- Lowenthal, P., Borup, J., West, R., & Archambault, L. (2020). Thinking beyond Zoom: Using asynchronous video to maintain connection and engagement during the COVID-19 pandemic. *Journal of Technology and Teacher Education*, 28(2), 383-391.
- Lucia, V. C., Kelekar, A., & Afonso, N. M. (2021). COVID-19 vaccine hesitancy among medical students. *Journal of Public Health*, 43(3), 445-449.
- Luo, A. (2019). Content analysis: A step-by-step guide with examples. *Published July*, 18, 2019.
- Malik, A., Malik, J., & Ishaq, U. (2021). Acceptance of COVID-19 vaccine in Pakistan among health care workers. *PLoS One*, 16(9), e0257237.
- Martín Rojo, L. (2001). New developments in discourse analysis: Discourse as social practice.
- Mushtaq, A., Mehmood, S., Rehman, M. A. U., Younas, A., Rehman, M. S. U., Malik, M. F., & Hyder, M. Z. (2015). Polio in Pakistan: Social constraints and travel implications. *Travel medicine and infectious disease*, 13(5), 360-366.
- OKADO-GOUGH, D. (2017). Critical Discourse Analysis: Current Approaches and the Advent of Multimodality.
- Owais, A., Khowaja, A. R., Ali, S. A., & Zaidi, A. K. (2013). Pakistan's expanded programme on immunization: An overview in the context of polio eradication and strategies for improving coverage. *Vaccine*, 31(33), 3313-3319.
- Robertson, E., Reeve, K. S., Niedzwiedz, C. L., Moore, J., Blake, M., Green, M., ... & Benzeval, M. J. (2021). Predictors of COVID-19 vaccine hesitancy in the UK household longitudinal study. *Brain, behavior, and immunity*, 94, 41-50.
- Rodriguez-Morales, A. J., Cardona-Ospina, J. A., Gutiérrez-Ocampo, E., Villamizar-Peña, R., Holguin-Rivera, Y., Escalera-Antezana, J. P., ... & Sah, R. (2020). Clinical, laboratory and imaging features of COVID-19: A systematic review and meta-analysis. *Travel medicine and infectious disease*, 34, 101623.
- Saied, S. M., Saied, E. M., Kabbash, I. A., & Abdo, S. A. E. F. (2021). Vaccine hesitancy: Beliefs and barriers associated with COVID-19 vaccination among Egyptian medical students. *Journal of medical virology*, 93(7), 4280-4291.
- Sallam, M. (2021). COVID-19 vaccine hesitancy worldwide: a concise systematic review of vaccine acceptance rates. *Vaccines*, 9(2), 160.
- Semo, B., Becker, J., & Reda, M. (2021). Mitigating Hesitancy Key to COVID-19 Vaccine Readiness. Chemonics.
- Sengul, K. (2019). Critical discourse analysis in political communication research: a case study of right-wing populist discourse in Australia. *Communication Research and Practice*, 5(4), 376-392.
- Smith, F. (2012). *Understanding reading: A psycholinguistic analysis of reading and learning to read*. Routledge.
- Suryaman, M., Cahyono, Y., Muliansyah, D., Bustani, O., Suryani, P., Fahlevi, M., & Munthe, A. P. (2020).

COVID-19 pandemic and home online learning system: Does it affect the quality of pharmacy school learning. *Systematic Reviews in Pharmacy*, 11(8), 524-530.

- Tabah, A., Ramanan, M., Laupland, K. B., Buetti, N., Cortegiani, A., Mellinghoff, J., ... & De Waele, J. J. (2020). Personal protective equipment and intensive care unit healthcare worker safety in the COVID-19 era (PPE-SAFE): an international survey. *Journal of critical care*, 59, 70-75.
- van Dijk, T. A. (2005). *Racism and discourse in Spain*

- and Latin America*. John Benjamins Publishing.
- WHO, S. A. (2020). WHO coronavirus disease (COVID-19) dashboard. *World Health Organization*.
- Wodak, R. (2002). Aspects of critical discourse analysis. *Zeitschrift für angewandte Linguistik*, 31.36(10), 5-
- World Health Organization. (2021). Vaccines and immunization. 2020.
- Zupnik, J. Y. (1991). Norman Fairclough, Language and power. London: Longman. 1989 Pp. 248. *Language in Society*, 20(2), 265-269.

Publisher's note: EScience Press remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2022.