

Family Pressure, Social Media Influence, and COVID-19 Vaccination Hesitancy among Students at Higher Education in Pakistan

Muhammad Shoaib

Associate Professor, Department of Sociology, University of Gujrat, Gujrat, Pakistan
(Corresponding Author) shoaibsoc@uog.edu.pk

Abeel Naseer

Junior Clinical Fellow, Lister Hospital East and North Hertfordshire NHS Trust, Stevenage,
United Kingdom
abeel.naseer@nhs.net

Naila Naseer

Assistant Professor, Distance, Non-Formal and Continuing Education Department, Allama Iqbal
Open University, Islamabad, Pakistan
naila.naseer@aiou.edu.pk

Abstract

This article has been designed to examine the COVID-19 pandemic vaccination hesitancy among students at higher education institutions in Pakistan. The COVID-19 vaccination has been declared mandatory with the reopening of higher educational institutions and students feel hesitation based on multiple factors. This study has used a quantitative approach and a cross-sectional survey has been conducted. A sample of university students in the BS (4 Years) program has been sampled through a proportionate random sampling technique and 4178 students participated. Structural Equation Modelling (SEM) technique has been used to test the model. The study findings conclude that students have to face pressure from university and family for COVID-19 vaccination. Furthermore, side effects and prefer natural immunity have also been added to COVID-19 vaccination hesitancy among university students. Resultantly, social media also spread fake news regarding the side effects of vaccination in the future among students. Summing up the argument, COVID-19 vaccination hesitancy among university students has been based on multiple interlinked factors i.e., university pressure, family pressure, future fear, side effects, prefer natural immunity, and social media influence.

Keywords: Side Effects, Natural Immunity, Family Pressure, Fear of Infection, Vaccination Hesitancy, COVID-19 Outbreak.

1. Introduction

In late 2019 cases of unusual and atypical pneumonia were reported in Wuhan, China (Shoaib & Abdullah, 2020). The cases were clustered in a food market and were assumed to have a single origin (Abdullah & Shoaib, 2021). In the beginning, the cause of the pneumonia was not known. It was assumed that the most probably the disease has a viral origin. After further study and genetic analysis, it was proved that this disease is indeed caused by viruses and further evaluation proved that the disease is caused by a novel coronavirus 19. COVID 19 was the name given to the disease by WHO (2020c). The virus is also named SARS-CoV 19. It has very high infectivity potential

and has a human-to-human transmission (WHO, 2020a, 2020b). This virus can be transmitted from an infected person to a healthy person and the most common mode of transmission is by aerosol droplets (Shoaib, Ali, & Naseer, 2021). Initially, attempts were made to contain the virus in Wuhan and prevent its transmission to other parts of the world but due to its infectivity it kept on spreading, and in 5-6 months, it spread to the whole world and was declared a pandemic by WHO on 11th March 2020 (Naseer, Shoaib, Ali, & Bilal, 2021). In the beginning, attempts were made to contain the virus by employing measures that reduced human-to-human contact and decreased exposure to aerosol droplets. These measures included social distancing, covering of face with face masks, frequent handwashing, prevention of gatherings, and lockdowns to contain the spread (Ahmad, Shoaib, & Abdullah, 2021; Shoaib & Abdullah, 2021). These were temporary measures that were employed to buy time, and reduce the spread till an effective treatment is produced (Shoaib, Iqbal, & Tahira, 2021). Several treatments were postulated and tested to treat the disease. Dexamethasone, ascorbic acid, remdesivir, aspirin, oxygen supplementation, azithromycin, zinc, etc., were tested with some proving less or non-effective to others being very effective in treatment. Meanwhile, research to develop a vaccine was started and on December 11, 2020, Food and Drug Administration (FDA) approved the emergency use of the Pfizer vaccine to prevent COVID-19. Similarly, the Moderna vaccine was authorized for emergency use by Food and Drug Administration (FDA) on December 18, 2020 (Naseer et al., 2021; Shoaib, Ali, & Naseer, 2021).

1.2 The Study Context

It has been observed that Coronavirus disease 19 or COVID 19 is caused by a novel coronavirus that is part of a large family of viruses known to cause different animal and human diseases (Naseer et al., 2021). Coronaviruses are implicated as a causal agent in different diseases ranging from mild upper respiratory tract infection to severe systemic illnesses like DIC, and pneumonia (Ahmad et al., 2021; Shoaib & Abdullah, 2020). Previously coronaviruses are known to be causal agents in Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). These viruses infect humans as well as other animals. Infection from one species to another species is postulated to be the cause of Middle East Respiratory Syndrome (camels), similarly, it is postulated that bats were the reservoir of novel coronavirus 19 that led to the pandemic and coronavirus disease 19 (COVID 19). Since the development of a vaccine, health authorities are advocating for the masses to get vaccinated (Shoaib, Ali, & Naseer, 2021). This is advocated in addition to preventive measures to contain the spread of disease (Ahmad et al., 2021). But several hurdles hamper mass vaccination and vaccination rates have been poor especially in developing and underdeveloped countries (Shoaib, Rasool, & Anwar, 2021). It has been attributed to several causes like financial constraints, lack of knowledge and access to the vaccine, fears about vaccine efficacy and potential side effects, and preference for natural immunity against vaccine acquired immunity.

1.3 The objective of the Study

The main objective of the study is to examine the COVID-19 vaccination hesitancy among university students.

2. Review of Literature

Several studies have been conducted and found that control of many infectious diseases is achieved with the help of vaccination and diseases like mumps, rubella, chickenpox, etc., that once used to cause massive outbreaks, now seldom cause any small or mild outbreak (Naseer et al., 2021; Shoaib, Ali, & Naseer, 2021). This is achieved due to massive vaccination against the common childhood infectious diseases. Although vaccination against diseases has always been a very effective tool and it helped eradicate diseases like smallpox, polio, etc., it faced resistance from

many groups. Several reasons lead to vaccine hesitancy among the masses. Some of them are backed by scientific knowledge, but most of the beliefs are due to fear of the unknown, lack of knowledge, propaganda against vaccination, lack of resources, and access and preference for natural immunity against vaccination; just to name a few (Anwar, Shoaib, & Mustafa, 2022; Fontenot et al., 2021; Geddawy et al., 2021; Gursoy, Can, Williams, & Ekinci, 2021). Parents and consumer groups have long advocated that vaccination in children leads to autism and autism-like disorders that have no scientific basis and has been repeatedly proven to be false, but the belief is very hard to be shunned and that leads to reduced vaccination and breakthrough infections. Similar fears of vaccination against COVID-19 are present among masses that side effects of vaccination are very severe and are worse than actual infection (Holeva, Parlapani, Nikopoulou, Nouskas, & Diakogiannis, 2022; N. Naseer, Shoaib, & Naseer, 2022).

The COVID-19 vaccination has some common side effects and a few severe side effects, but studies have proved that their incidence is very low and protection from COVID-19 infection provided by vaccination, outweighs the risks that are posed due to vaccine-related side effects (Kim, Kim, Lee, & Andreu-Perez, 2022; Le An, Nguyen, Nguyen, Vo, & Huynh, 2021; Shoaib, Ali, Anwar, & Abdullah, 2022). Lack of knowledge regarding the mechanism of action of vaccination, its components, its effects on the human body, and its long-term effects have allowed people to fill the gap of knowledge with their own beliefs that are mostly false and are not backed by scientific knowledge (Shoaib, Tariq, Shahzadi, & Ali, 2022). A belief that oral polio vaccination causes male infertility has reduced the vaccination rate in tribal areas of Pakistan and that is causing breakthrough infections, due to which polio being eradicated from the rest of the world still presents in tribal areas of Pakistan and Afghanistan. This belief has no scientific basis and research has repeatedly refuted the claims. Such claims about the COVID-19 vaccine interfering with human genes, altering behaviour, and manipulating the choices are also present especially among rural and underserved communities. Such claims are not backed by any scientific knowledge but because of the prevalent belief, this idea is difficult to be shunned and is a leading cause of low vaccination rates in rural communities.

Developing countries have a large proportion of a young population and most families have the nuclear family model (Ahmad, Ahmad, Shoaib, & Shaukat, 2021; Ahmad, Shoaib, & Shaukat, 2021; Shoaib, 2021). Due to this model children follow the advice and commands of their parents and as a result vaccination rates are influenced by the choices and decisions that are taken by elders and their parents. Because of some unproven fears regarding vaccination, they tend to discourage youngsters and pressurize them against vaccination (Wan et al., 2021; Wang et al., 2021). This is also one of the causes of reduced vaccination. Some people prefer natural immunity and believe that the immunity that is provided by natural infection is better and sustained than the one that is provided by vaccination (Huynh, Nguyen, Van Tran, Le An, & Tran, 2022). Although data backing this claim is scarce this is also a cause of reduced vaccination and reluctant behaviour (Wan et al., 2021). COVID-19 vaccines are not 100 percent effective to prevent infection and efficacy varies from one vaccine to another. Due to this breakthrough infections do occur, but these infections are mild as compared to the infections that occur in unimmunized persons (Tan et al., 2022). Because of these breakthrough infections people question the efficacy of vaccination and believe that vaccination is not helpful and argue that it won't help even if they get vaccinated or not. This belief is also one of the reasons that people are not getting vaccinated against COVID-19 (Ahmad et al., 2021; Shoaib, Ali, & Naseer, 2021). Several researches have been conducted using quantitative study design (Mariam, Anwar, Shoaib, & Rasool, 2021; Shoaib, Abdullah, & Ali, 2020; Shoaib, Khan, & Ashraf, 2011; Shoaib, Khan, & Khan, 2011; Shoaib, Latif, & Usmani, 2013; Shoaib,

Munir, Masood, Ali, & Sher, 2012; Shoaib, Saeed, & Cheema, 2012; Shoaib & Shah, 2012; Shoaib, Shaukat, Khan, & Saeed, 2013) and bibliometric analysis (Shoaib, Abdullah, & Ali, 2021; Shoaib, Ahmad, Ali, & Abdullah, 2021; Shoaib, Ali, Anwar, Rasool, et al., 2021; Shoaib, Ali, Anwar, & Shaukat, 2021; Shoaib, Mustafa, & Hussain, 2023; Shoaib, Usmani, & Abdullah, 2023; Shoaib, Usmani, & Ali, 2022). Hence, this study opted quantitative approach to employ SEM model.

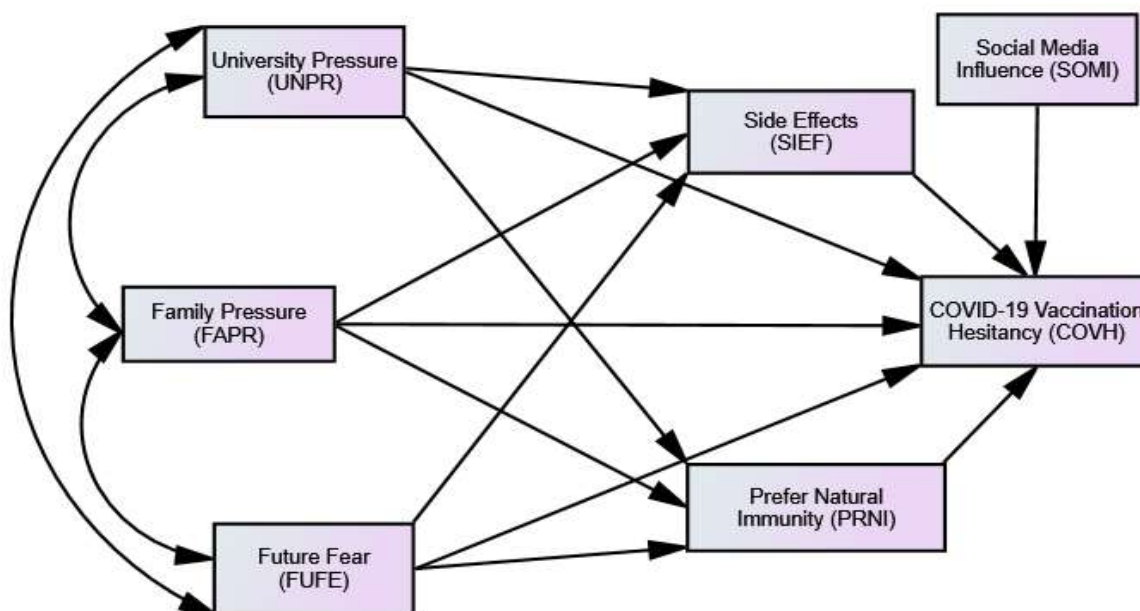


Figure 1: Conceptual Framework

3. The Data and Methods

Study Design: This study has used a quantitative approach i.e., explanatory research. The rationale to use this design has been based on the nature of the topic and the objective of the study. Further, the sample size has been more than 30 and a conceptual framework has been developed to test the model.

Study Area and Population: The study area for this research has consisted of two public sector universities i.e., the University of Gujrat, Gujrat, and the Government College University Faisalabad, Faisalabad, Pakistan. The students of the BS (4 Years) program constitute the population of the study. It is worth mentioning here that the students are male and female, from the 1st, 3rd, 5th, and 7th semesters. The COVID-19 vaccination has been notified compulsory for all students to enter the university and classrooms. Hence, students from all the semesters i.e., Fall-2021 have constituted the population of the study.

Sampling Procedures: A sampling frame has been collected from all the departments offering the BS (4 Years) program on campus. A proportionate random sampling technique has been used to draw a representative sample from two public sector universities mentioned above in the province of Punjab, Pakistan. A total of 4178 students participated from the universities. However, the questionnaire has been distributed among 8560 students. The response rate has been calculated as $4178/8560 \times 100 = 48.8$ percent. The said response rate has been low as the classes have been started late and students have fear of contagiousness. Hence, they are attending classes late, on leave, and also keeping social distancing in the university.

Technique and Tool of Data Collection: A face-to-face cross-sectional survey has been conducted to conduct this study. A structured questionnaire consisting of the different sections has been developed. An attitudinal scale has been used to measure the response of the students.

Pre-testing: A pilot testing of 30 (15 from each university) randomly selected university students has been done to check the reliability of the tool of data collection. The value of Alpha has been measured as followings;

Table 1

Reliability Test

Sr. No.	Variables	Code	Items	Alpha Value
i	University Pressure	UNPR	5	.762
ii	Family Pressure	FAPR	6	.741
iii	Future Fear	FUFE	5	.709
iv	Side Effects	SIEF	4	.710
v	Prefer Natural Immunity	PRNI	5	.719
vi	Social Media Influence	SOMI	5	.724
vii	COVID-19 Vaccination Hesitancy	COVH	6	.837
	Overall		36	.928

Data Analysis: After the collection of primary data from the universities students, the process of data editing, screening, and computerizing has been done. The data have been normally distributed and a parametric statistical test has been employed. Data analysis has consisted of descriptive statistics of the variables, correlation, and Structural Equational Modelling (SEM) technique to measure the effects of the model. In the proposed model as mentioned in Figure 1 conceptual framework, there are three variables used as an independent variable i.e., university pressure, family pressure, and future fear. Similarly, two path variables have been used named side effects and prefer natural immunity. Likewise, social media influence has been used as an intervening variable and COVID-19 vaccination hesitancy among university students as the dependent variable.

4. Results and Discussion

The primary data analysis points out that 58 percent of the student's gender is male and 42 percent of the student's gender has been female enrolled in BS (4 Years) program at University of Gujrat, Gujrat and Government College University Faisalabad, Faisalabad, Pakistan. All these students are studying in different departments and faculties. Similarly, their residential area has also been reported as 66 percent from rural residential backgrounds and 34 percent of them have a familial residential background as urban.

Table 2

Descriptive Statistics (n = 4178)

Variables	Range	Mini.	Maxi.	Mean	Std. Devi.	Vari.
University Pressure (UNPR)	12	8	20	15.04	2.332	5.440
Family Pressure (FAPR)	14	10	24	20.83	3.114	9.700
Future Fear (FUFE)	15	5	20	15.91	3.684	13.573
Side Effects (SIEF)	9	7	16	14.23	1.828	3.343
Prefer Natural Immunity (PRNI)	12	8	20	17.51	2.372	5.627
Social Media Influence (SOMI)	13	7	20	17.65	2.287	5.229

COVID-19 Vaccination Hesitancy (COVH)	9	11	20	17.75	2.231	4.977
---------------------------------------	---	----	----	-------	-------	-------

Table 2 points out the descriptive statistics of the variables. It is stated that the data has been collected using an attitudinal scale of (dis)agreement. Thus, descriptive statistics have been calculated based on the indexing of the score of all the statements of the variables. The university pressure in terms of COVID-19 vaccination among students has a range value of 12 mentioning 8 minimum and 20 maximum values. Similarly, the table also indicates the 15.04 mean value, 2.332 standard deviations, and 5.440 variances of the variable i.e., university pressure. It is worth mentioning here that the family pressure variable range value has been calculated as 14 along with 10 minimum and 24 maximum scores of the indexing against the statements. However, the mean value of the family pressure variable is 20.83, 3.114 standard deviation, and 9.700 variances. The analysis also asserts the descriptive statistics of the variable named future fear among university students i.e., 15 range, 5 minimum, 20 maximum, 15.91 mean value, 3.684 standard deviations, and 13.573 variances. Further, it is pertinent to mention here that the descriptive statistics of the variables including side effects prefer natural immunity, social media influence, and COVID-19 vaccination hesitancy among university students have also been provided in Table 2.

Table 3

Correlation Statistical Test (n=4178)

Variables	UNPR	FAPR	FUFE	SIEF	PRNI	SOMI	COVH
UNPR	1	.295**	.120**	.161**	.265**	.268**	.252**
FAPR		1	.306**	.308**	.511**	.597**	.450**
FUFE			1	.066**	.486**	.240**	.280**
SIEF				1	.211**	.236**	.419**
PRNI					1	.560**	.454**
SOMI						1	.440**
COVH							1

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3 indicates the Pearson correlation statistical test. As the data have been normally distributed and the parametric statistical test has been employed to check the correlation of the variables before moving towards Structural Equation Modelling (SEM) technique. Data in the table presents that the variable university pressure has a weak positive correlation with family pressure ($r=.295$), future fear ($r=.120$), side effects ($r=.161$), prefer natural immunity ($r=.265$), social media influence ($r=.268$), and COVID-19 vaccination hesitancy ($r=.252$) among university students. In the same fashion, family pressure has also a weak positive correlation with future fear ($r=.306$) and side effects ($r=.308$) of COVID-19 vaccination hesitancy. On the other hand, this variable has a significant moderate correlation with prefer natural immunity ($r=.511$), social media influence ($r=.597$), and COVID-19 vaccination hesitancy ($r=.450$) among university students. It is worth mentioning here that there is a weak and moderate positive correlation between the remaining variables i.e. future fear, side effects, preferring for natural immunity, social media influence, and COVID-19 vaccination hesitancy among university students as mentioned in the table. It is worth stating that the study findings are aligned with the study finding of Kotta, Kalcza-Janosi, Szabo, and Marschalko (2022), Ouyang, Ma, and Wu (2022), Shoaib, Mustafa, and Hussain (2022), and Tarus, Ölmez Yalazı, Öz, and Demirci (2022).

Table 4

Regression Weights, Covariances, and Variances (n = 4178)

Variables			Standardized Regression Weights	Estimate	S.E.	C.R.	P
FUFE	--->	SIEF	.033	.017	.008	2.156	.031
UNPR	--->	PRNI	.113	.115	.013	8.922	***
FAPR	--->	PRNI	.368	.280	.010	27.945	***
FAPR	--->	SIEF	.295	.173	.009	18.417	***
UNPR	--->	SIEF	.078	.061	.012	5.052	***
FUFE	--->	PRNI	.360	.232	.008	28.410	***
PRNI	--->	COVH	.189	.169	.015	11.419	***
UNPR	--->	COVH	.071	.065	.012	5.201	***
FUFE	--->	COVH	.093	.053	.009	6.247	***
FAPR	--->	COVH	.137	.093	.011	8.645	***
SOMI	--->	COVH	.162	.150	.012	12.531	***
SIEF	--->	COVH	.303	.351	.016	22.250	***
Covariances							
UNPR	<-->	FAPR		2.146	.117	18.312	***
FUFE	<-->	FAPR		3.512	.186	18.920	***
FUFE	<-->	UNPR		1.031	.134	7.701	***
Variances							
FUFE				13.570	.297	45.700	***
UNPR				5.439	.119	45.700	***
FAPR				9.698	.212	45.700	***
e3				5.227	.114	45.700	***
e1				3.005	.066	45.700	***
e2				3.415	.075	45.700	***
e4				3.132	.069	45.700	***
Chi-square = 2536.915, p-value = .000, df = 6, GFI = .944, AGFI = .925, CFI = .913, RMSEA = .056							

Table 4 points out the direct effects of the model. It indicates that the future fear has been directly affecting side effects, prefers natural immunity, and COVID-19 vaccination hesitancy among university students. Similarly, university pressure has also been affecting prefer natural immunity, side effects, and COVID-19 vaccination hesitancy. Likewise, family pressure has also been found to have favourable effects on preferred natural immunity, side effects, and COVID-19 vaccination hesitancy among students. Additionally, preferring natural immunity has a favourable contributor to COVID-19 vaccination hesitancy among university students as mentioned in the statistical analysis in the table. It is important to mention here that social media influence and side effects have been affecting COVID-19 vaccination hesitancy positively among students at the tertiary level. The results are aligned with the findings of Wiysonge et al. (2022), Rodger and Blackshaw (2022), Shoaib, Anwar, and Rasool (2022), and Boto-García and Francisco Baños Pino (2022). Table 5 indicates the indirect effects of the model. It is stated that university pressure, future fear, and family pressure have an indirect effecting COVID-19 vaccination hesitancy among students at the university through the mediation of preferring natural immunity. It is asserted that family

members are inserting pressure to avoid vaccination based on fear of infection. Likewise, the university administration has also instructed the students on COVID-19 vaccination as per rules implemented by the government. Furthermore, students have been reluctant to COVID-19 vaccination. Consequently, family pressure, university administration pressure, and future fear have indirectly contributed to COVID-19 vaccination hesitancy among university students. The analysis reveals that family pressure, university pressure, and future fear have also indirectly effecting COVID-19 vaccination hesitancy among university students through the moderating role of side effects of the vaccination. It has been argued that students have faced pressurizing environments from the university and family side. It results in creating fear of the side effects of the vaccination. Moreover, the university issued notifications to ensure the COVID-19 vaccination enters the classroom. This news has inserted more pressure on university students. Consequently, COVID-19 vaccination hesitancy has been observed among university students. the results of this study are conform to the results of Zhang, Lin, Chen, Tung, and Zhu (2021), Yörük and Güler (2021), Anwar, Shoaib, and Javed (2013), Yoda and Katsuyama (2021), Yahia et al. (2021), Shoaib, Ali, and Akbar (2021), and Serbezova et al. (2021).

Table 5

Indirect Effects of the Model (n = 4178)

Indirect Path	Unstandardized Estimate	Lower	Upper	P-Value	Standardized Estimate
FAPR --> PRNI --> COVH	0.047	0.039	0.055	0.001	0.070***
FAPR --> SIEF --> COVH	0.061	0.054	0.069	0.001	0.089***
UNPR --> PRNI --> COVH	0.019	0.016	0.024	0.001	0.021***
UNPR --> SIEF --> COVH	0.021	0.014	0.029	0.001	0.023***
FUFE --> PRNI --> COVH	0.039	0.032	0.047	0.001	0.068***
FUFE --> SIEF --> COVH	0.006	0.010	0.002	0.017	0.010*
Significance of Estimates: *** p < 0.001, ** p < 0.010, * p < 0.050, † p < 0.100					

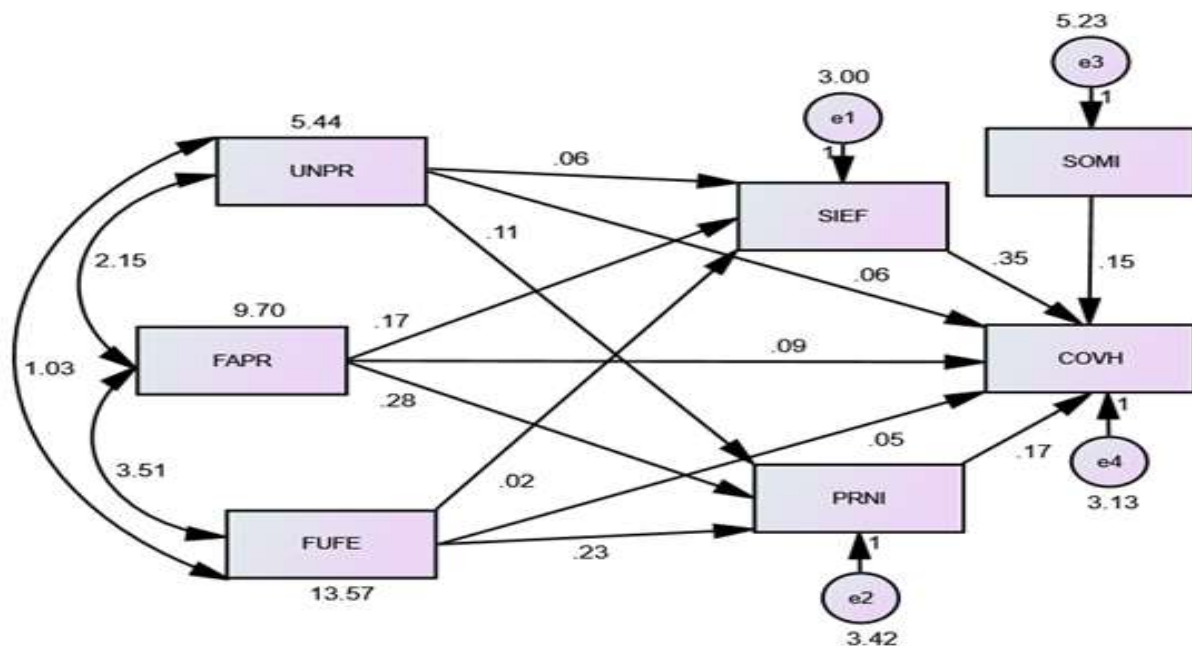


Figure2: Model Fit Diagram

5. Conclusion

This research article concludes that COVID-19 vaccination hesitancy has been found among university students. It has been observed that control of many infectious diseases is achieved with the help of vaccination and diseases like mumps, rubella, chickenpox, etc., that once used to cause massive outbreaks, now seldom cause any small or mild outbreak. Similarly, COVID-19 vaccination has been declared compulsory for students enter in classrooms. The study findings conclude that students have to face pressure from university and family for COVID-19 vaccination. Furthermore, side effects and prefer natural immunity have also been added to COVID-19 vaccination hesitancy among university students. Resultantly, social media also spread fake news regarding the side effects of vaccination in the future among students. Summing up the argument, COVID-19 vaccination hesitancy among university students has been based on multiple interlinked factors i.e., university pressure, family pressure, future fear, side effects, prefer natural immunity, and social media influence.

Limitations of the Study: The study has been limited to the quantitative study design and data has been collected from only two university students.

References

- Abdullah, F., & Shoaib, M. (2021). Psychosocial impacts of COVID-19 pandemic: a cross-sectional study of Mirpur, Pakistan. *International Review of Sociology*, 31(3), 1-17.
- Ahmad, A., Shoaib, M., & Abdullah, F. (2021). COVID-19 black swan and personal protective equipment (PPE) in Pakistan. *Health Education*, 122(4), 365-373.
- Ahmad, J., Ahmad, A., Shoaib, M., & Shaukat, B. (2021). Public Library Online Information Resources to Library Patrons during COVID-19 Pandemic: A Case of Higher Education Institutions. *Library Philosophy and Practice*, 1-14.
- Ahmad, J., Shoaib, M., & Shaukat, B. (2021). Academic Library Resources and Services at Higher Education Institutions during COVID-19 Pandemic: A Case of Students' Satisfaction. *Library Philosophy and Practice*, 1-17.
- Anwar, B., Shoaib, M., & Javed, S. (2013). Women's autonomy and their role in decision making at household level: a case of rural Sialkot, Pakistan. *World Applied Sciences Journal*, 23(1), 129-136.
- Anwar, B., Shoaib, M., & Mustafa, R.-e.-. (2022). Factors Influencing Students' Willingness to Use Academic Library after COVID-19 Lockdown. *International Information & Library Review*, 35(2), 136-142.
- Boto-García, D., & Francisco Baños Pino, J. (2022). Propelled: evidence on the impact of vaccination against COVID-19 on travel propensity. *Current Issues in Tourism*, 1-20. doi:10.1080/13683500.2022.2039099
- Fontenot, H. B., Mattheus, D., Lim, E., Michel, A., Ryan, N., Davis, K. F., & Zimet, G. (2021). Assessing licensed nurses COVID-19 vaccine attitudes and intentions: a cross-sectional survey in the state of Hawaii. *Human Vaccines & Immunotherapeutics*, 17(11), 3933-3940. doi:10.1080/21645515.2021.1947097
- Geddawy, A., Alajmi, M., Alaskar, A. M., Alwadani, S. T., Alanezi, A. F., Alhomaidhi, A. A., & Al-Ghamdi, S. (2021). Undergraduate health sciences students' response regarding COVID-19 pandemic in Saudi Arabia: an observational study. *Postgraduate Medicine*, 1-10. doi:10.1080/00325481.2021.2017184
- Gursoy, D., Can, A. S., Williams, N., & Ekinci, Y. (2021). Evolving impacts of COVID-19 vaccination intentions on travel intentions. *The Service Industries Journal*, 41(11-12), 719-733. doi:10.1080/02642069.2021.1938555

- Holeva, V., Parlapani, E., Nikopoulou, V. A., Nouskas, I., & Diakogiannis, I. (2022). COVID-19 vaccine hesitancy in a sample of Greek adults. *Psychology, health & medicine*, 27(1), 113-119. doi:10.1080/13548506.2021.1948579
- Huynh, G., Nguyen, H. T. N., Van Tran, K., Le An, P., & Tran, T. D. (2022). Determinants of COVID-19 vaccine hesitancy among parents in Ho Chi Minh City, Vietnam. *Postgraduate Medicine*, 1-6. doi:10.1080/00325481.2022.2044142
- Kim, N., Kim, J.-N., Lee, H., & Andreu-Perez, L. (2022). An Oscillatory Path to Vaccination: The Roles of Normative and Epistemic Factors in Explaining Vaccination Hesitancy in COVID-19. *Health Communication*, 1-11. doi:10.1080/10410236.2022.2054228
- Kotta, I., Kalcza-Janosi, K., Szabo, K., & Marschalko, E. E. (2022). Development and Validation of the Multidimensional COVID-19 Vaccine Hesitancy Scale. *Human Vaccines & Immunotherapeutics*, 18(1), 1-10. doi:10.1080/21645515.2021.2007708
- Le An, P., Nguyen, H. T. N., Nguyen, D. D., Vo, L. Y., & Huynh, G. (2021). The intention to get a COVID-19 vaccine among the students of health science in Vietnam. *Human Vaccines & Immunotherapeutics*, 17(12), 4823-4828. doi:10.1080/21645515.2021.1981726
- Mariam, S., Anwar, B., Shoaib, M., & Rasool, S. (2021). Literacy and Numeracy Drive: An Evaluation of Class Three English Textbook of Punjab. *Journal of Critical Reviews*, 8(2), 938-946.
- Naseer, A., Shoaib, M., Ali, N., & Bilal, M. (2021). Trend of Research Visualization of COVID-19 Complications in PubMed Database Using Scientometric Analysis from 2020 to March 20, 2021. *Library Philosophy and Practice*, 5731, 1-17.
- Naseer, N., Shoaib, M., & Naseer, A. (2022). Prevention is Better than Cure: An Evaluation of Preventive Measures Against COVID-19 Among Students at Tertiary Level. *Pakistan Journal of Social Research*, 4(3), 1179-1192.
- Ouyang, H., Ma, X., & Wu, X. (2022). The prevalence and determinants of COVID-19 vaccine hesitancy in the age of infodemic. *Human Vaccines & Immunotherapeutics*, 18(1), 2013694. doi:10.1080/21645515.2021.2013694
- Rodger, D., & Blackshaw, B. P. (2022). COVID-19 Vaccination Should not be Mandatory for Health and Social Care Workers. *The New Bioethics*, 28(1), 27-39. doi:10.1080/20502877.2022.2025651
- Serbezova, A., Mangelov, M., Zaykova, K., Nikolova, S., Zhelyazkova, D., & Balgarinova, N. (2021). Knowledge and attitude toward COVID-19 vaccines amongst medical, dental and pharmacy students. A cross-sectional study from Bulgaria. *Biotechnology & Biotechnological Equipment*, 35(1), 2046-2054. doi:10.1080/13102818.2022.2041097
- Shoaib, M. (2021). *Sociological Analysis of Teachers Perspectives on Students Academic Performance in Higher Education in the Punjab*. (PhD Thesis). International Islamic University Islamabad, Central Library.
- Shoaib, M., & Abdullah, F. (2020). Risk Reduction of COVID-19 Pandemic in Pakistan. *Social Work in Public Health*, 35(7), 557-568. doi:10.1080/19371918.2020.1806172
- Shoaib, M., & Abdullah, F. (2021). COVID-19 backlash: psycho-social impacts of outbreak in Pakistan. *Health Education*, 121(3), 265-274.
- Shoaib, M., Abdullah, F., & Ali, N. (2020). Library Resources and Research Environment in Higher Education Institutions: Students' Satisfaction. *Library Philosophy and Practice*, 1-18.

- Shoaib, M., Abdullah, F., & Ali, N. (2021). A Research Visualization of Academic Learning Skills among Students in Higher Education Institutions: A Bibliometric Evidence from 1981 to 2020. *Library Philosophy and Practice*, 5579, 1-34.
- Shoaib, M., Ahmad, A., Ali, N., & Abdullah, F. (2021). Trend of Research Visualization of Learning, Classroom, and Class Participation in Higher Education Institutions: A Bibliometric Analysis from 2001 to 2020. *Library Philosophy and Practice*, 5743, 1-26.
- Shoaib, M., Ali, N., Anwar, B., & Abdullah, F. (2022). Library services and facilities in higher education institutions during coronavirus disease (COVID-19) in Pakistan. *Journal of Information Science*, 1-14.
- Shoaib, M., Ali, N., Anwar, B., Rasool, S., Mustafa, R.-e., & Zici, S. (2021). Research Visualization on Teaching, Language, Learning of English and Higher Education Institutions from 2011 to 2020: A Bibliometric Evidences *Library Philosophy and Practice*, 5677, 1-27.
- Shoaib, M., Ali, N., Anwar, B., & Shaukat, B. (2021). Plotting the Literature on Learning Outcomes and Academic Performance in Higher Education from 2001 to 2020: A Scientometric Analysis. *Library Philosophy and Practice*, 5919, 1-24.
- Shoaib, M., Ali, N., & Naseer, A. (2021). Plotting the Literature on Precautionary Measures of COVID-19: A Scientometric Analysis of Web of Science. *Library Philosophy and Practice*, 5899, 1-20.
- Shoaib, M., Ali, R., & Akbar, A. (2021). Library Services and Facilities in Higher Education Institutions in Pakistan: Satisfaction of Patrons. *Library Philosophy and Practice*, 1-19.
- Shoaib, M., Anwar, B., & Rasool, S. (2022). Factors Affecting EFL Teaching Skills at Higher Education Institutions in Pakistan: An Analysis of Teachers' Perspective. *Pakistan Journal of Language Studies*, 15(1), 1-15.
- Shoaib, M., Iqbal, S., & Tahira, G. (2021). Digitalization of Academic Libraries in Higher Education Institutions during COVID-19 Pandemic. *Library Philosophy and Practice*, 1-15.
- Shoaib, M., Khan, S., & Ashraf, A. (2011). Occupational Risk Factors Associated with Reproductive Health of Working Women: A Case Study of University of Gujrat. *Academic Research International*, 1(2), 292.
- Shoaib, M., Khan, S., & Khan, M. H. (2011). Family support and health status of elderly people: A case study of district gujrat, Pakistan. *Middle-East Journal of Scientific Research*, 10(4), 519-525.
- Shoaib, M., Latif, B., & Usmani, F. (2013). Economic contribution changes the decision-making of working women; A case of Bhimben District-AJK. *Middle-East Journal of Scientific Research*, 16(5), 602-606.
- Shoaib, M., Munir, A., Masood, M., Ali, Q., & Sher, F. (2012). Education as a Source of Child Health Care Practices: A Case of Mothers in Tehsil Kharian, Gujrat-Pakistan. *World Applied Sciences Journal*, 19(5), 754-761.
- Shoaib, M., Mustafa, R.-E.-, & Hussain, K. G. (2022). Revisiting Classroom Environment and Academic Performance of the Students in Higher Education Institutions. *Pakistan Journal of Social Research*, 4(3), 969-986.
- Shoaib, M., Mustafa, R.-E.-, & Hussain, K. G. (2023). Citing the Empirical Shreds of Electronic Evidence on Pedagogical Skills Employing Bibliometric Analysis from 2001- 2020. *Pakistan Journal of Social Research*, 5(2), 1050-1062.

- Shoaib, M., Rasool, D., & Anwar, D. (2021). Evaluating Research Support Facilities to University Students during COVID-19. *Library Philosophy and Practice*, 4953(1), 1-18.
- Shoaib, M., Saeed, Y., & Cheema, S. N. (2012). Education and Women's Empowerment at Household Level: A Case Study of Women in Rural Chiniot, Pakistan. *Academic Research International*, 2(1), 519-526.
- Shoaib, M., & Shah, M. R. (2012). Perceptions towards terrorist activities in Pakistan: A case study of Madrassa background students. *World Applied Sciences Journal*, 19(9), 1284-1288.
- Shoaib, M., Shaukat, B., Khan, M. N. A., & Saeed, M. (2013). Family Environment and the Concept of Tolerance among Family Members: A Case of Faisalabad-Pakistan. *World Applied Sciences Journal*, 23(1), 123-128.
- Shoaib, M., Tariq, M., Shahzadi, S., & Ali, M. (2022). Role of Academic Libraries in Online Academic Activities during COVID-19 Outbreak at Tertiary Level: A Library is a Thought in Cold Storage. *Library Philosophy and Practice*, 1-19.
- Shoaib, M., Usmani, F., & Abdullah, F. (2023). Plotting The Literature On Social Work Education From 1971-2020: A Scientometric Analysis. *Pakistan Journal of Social Research*, 5(2), 1347-1360.
- Shoaib, M., Usmani, F., & Ali, N. (2022). Citing the Empirical Shreds on Social Welfare and Methods of Social Work Employing Bibliometric Analysis From 1971 to 2020. *Pakistan Journal of Social Research*, 4(3), 1113-1133.
- Tan, L. F., Huak, C. Y., Siow, I., Tan, A. J., Venugopalan, P. M., Premkumar, A., . . . Tan, Benjamin Y. Q. (2022). The road to achieving herd immunity: factors associated with Singapore residents' uptake and hesitancy of the COVID-19 vaccination. *Expert Review of Vaccines*, 21(4), 561-567. doi:10.1080/14760584.2022.2021883
- Tarus, H. A., Ölmez Yalazı, R., Öz, T., & Demirci, N. (2022). Effects of Covid-19 fear on the attitudes toward Covid-19 vaccination in reproductive women. *Health Care for Women International*, 43(4), 398-412. doi:10.1080/07399332.2021.2004148
- Wan, X., Huang, H., Shang, J., Xie, Z., Jia, R., Lu, G., & Chen, C. (2021). Willingness and influential factors of parents of 3-6-year-old children to vaccinate their children with the COVID-19 vaccine in China. *Human Vaccines & Immunotherapeutics*, 17(11), 3969-3974. doi:10.1080/21645515.2021.1955606
- Wang, Z., She, R., Chen, X., Li, L., Li, L., Huang, Z., & Lau, J. T. F. (2021). Parental acceptability of COVID-19 vaccination for children under the age of 18 years among Chinese doctors and nurses: a cross-sectional online survey. *Human Vaccines & Immunotherapeutics*, 17(10), 3322-3332. doi:10.1080/21645515.2021.1917232
- WHO. (2020a). *World Health Organization Coronavirus disease 2019 (COVID-19): situation report*, 88. Retrieved from Geneva, Switzerland:
- WHO. (2020b). *World Health Organization Coronavirus disease (COVID-19), Situation Report – 207*. Retrieved from Geneva, Switzerland:
- WHO. (2020c). *World Health Organization Coronavirus Disease (COVID-19)*. Retrieved from Geneva, Switzerland:
- Wiysonge, C. S., Alobwede, S. M., de Marie C Katoto, P., Kidzeru, E. B., Lumngwena, E. N., Cooper, S., . . . Shey, M. S. (2022). COVID-19 vaccine acceptance and hesitancy among healthcare workers in South Africa. *Expert Review of Vaccines*, 21(4), 549-559. doi:10.1080/14760584.2022.2023355
- Yahia, A. I. O., Alshahrani, A. M., Alsulmi, W. G. H., Alqarni, M. M. M., Abdulrahim, T. K. A., Heba, W. F. H., . . . Buhran, A. A. A. (2021). Determinants of COVID-19 vaccine

- acceptance and hesitancy: a cross-sectional study in Saudi Arabia. *Human Vaccines & Immunotherapeutics*, 17(11), 4015-4020. doi:10.1080/21645515.2021.1950506
- Yoda, T., & Katsuyama, H. (2021). Parents' hesitation about getting their children vaccinated against COVID-19 in Japan. *Human Vaccines & Immunotherapeutics*, 17(12), 4993-4998. doi:10.1080/21645515.2021.1981087
- Yörük, S., & Güler, D. (2021). Factors associated with pediatric vaccine hesitancy of parents: a cross-sectional study in Turkey. *Human Vaccines & Immunotherapeutics*, 17(11), 4505-4511. doi:10.1080/21645515.2021.1953348
- Zhang, M.-X., Lin, X.-Q., Chen, Y., Tung, T.-H., & Zhu, J.-S. (2021). Determinants of parental hesitancy to vaccinate their children against COVID-19 in China. *Expert Review of Vaccines*, 20(10), 1339-1349. doi:10.1080/14760584.2021.1967147.