

Acceptability of COVID-19 Vaccines among Patients on Maintenance Hemodialysis: An Assessment from a Healthcare Center in Karachi

Fatima Kanwal^{1*}, Misbah Fatima¹ and Muhammad Wasay Siddiqui¹

¹National Institute of Kidney and Urological Diseases (NIKUD) Research Hospital, Karachi, Pakistan

ABSTRACT

Dialysis patients are among the high-risk group to contract COVID-19 necessitating vaccination to decrease mortality and morbidity. We aimed to evaluate the COVID-19 vaccination status of dialysis patients in our institute (NIKUD). Regular hemodialysis patients (n=38) from Sept'21 to Jan'22 were included after taking written consent. The majority (78%) of patients were fully vaccinated and none was partially vaccinated. Sinopharm (36.6%) was the most frequent vaccine received, followed by Moderna (26%). Among vaccinated patients' families, the complete vaccination rate was (68%) for the COVID-19 vaccine as compared (0%) for the complete vaccination of family members in the unvaccinated group. Non-belief in the vaccine (75%) along with no known case of COVID-19 disease to self or family (100%) were the most common possible reasons for not getting vaccinated. Perceived risk of COVID-19 to themselves as non-dangerous was a concerning belief in the majority (44%) (17) dialysis patients. Approximately 25% of patients did not receive any COVID-19 vaccine including inadequate vaccination among their families. Evidence-Based counseling and education are advised to alleviate any concerns regarding COVID-19 vaccines.

Keywords: COVID-19, COVID-19 vaccination, patient, dialysis.

INTRODUCTION

Almost two years into the COVID-19 pandemic, the development of vaccines and mass vaccination seems to be the only available approach to effectively curb this pandemic. Promising effects of COVID-19 vaccination are already showing and dubiety is dissipating rapidly [1]. Initially, lack of data and emergency use authorization regarding vaccine efficacy in special groups (including pregnant, lactating mothers and immunocompromised patients) were excluded from vaccination. Also, to avoid COVID-19 exposure in the early pandemic drop in regular childhood vaccination was observed in other countries including the UK [2]. However, over time with research and rapidly evolving guidelines, vaccines are showing promising results and now it's highly recommended to get COVID-19 vaccination, especially for immunocompromised patients including those on maintenance dialysis [3].

Vaccine hesitancy is a real phenomenon and a huge barrier worldwide. Falsified information that disseminates unchecked, fuels vaccine hesitancy. Myths associated with vaccines have played a huge part in the delayed eradication of vaccine-preventable diseases in the past which also includes COVID-19 now in Pakistan [4-6].

Government and private hospitals and other stakeholders have taken many steps to raise the awareness of our population of the necessity of COVID-19 vaccination.

*Corresponding author: Fatima Kanwal, National Institute of Kidney and Urological Diseases (NIKUD) Research Hospital, Karachi, Pakistan; Email: fatima_19@live.com
Received: February 09, 2022; Revised: April 27, 2022 Accepted: June 02, 2022
DOI: <https://doi.org/10.37184/lnjpc.2707-3521.4.20>

Ensuring proper SOPs, vaccination drives and awareness campaigns *via* different mediums, and smart lockdowns and restrictions in traveling / other social encounters for unvaccinated are to name a few [7, 8]. So, the only question remaining is to see the trickle-down effect and assess the actual COVID-19 vaccination status of our patients and address their any what's and whys.

METHODOLOGY

NIKUD Research Hospital is a not-for-profit, OPD-based health care and 10 bedded dialysis center in Karachi. From September 2021 to January 2022, patients enrolled for regular maintenance dialysis were interviewed *via* a questionnaire to evaluate their vaccination status and acceptability of the COVID-19 vaccine. The interview was conducted after taking personal consent to participate in the survey.

RESULTS AND DISCUSSION

Every 1 in 4 Pakistani potentially suffers from CKD which eventually leads to an increased burden on the already strained health care of our country [9]. When we evaluated the situation in our center, a total of 38 responses were elicited (100% response rate). Ages ranging 20-74 years with the male majority approximately 76% (29). The duration of dialysis ranged from 6 months to 7 years. Hypertension in 33 patients and diabetes in 17 patients were among the major comorbidities. Four patients had other comorbid conditions including polycystic kidney disease and recurrent nephrolithiasis. Of all, only 7% (3) patients reportedly had a history of COVID-19 since the start of the pandemic which was mild, based on a lack of supplementary oxygen requirement and successful

Table 1: Attributes of COVID-19 vaccinated and unvaccinated dialysis patients.

Attributes of Patients and their Families	Vaccinated (n=30) n (%)	Unvaccinated (n=8) n (%)
Education of patients		
Primary	8 (26)	3 (37)
Secondary/Intermediate	7(23)	2(25)
Graduation	15 (50)	3(37)
Comorbid		
Hypertension	28 (93)	5 (62)
Diabetes	14 (47)	3 (37)
Others	1 (3)	2 (25)
COVID-19 disease in family members		
Yes	6 (20)	0 (0)
No	24 (80)	8 (100)
COVID-19 vaccination of family members		
Fully Vaccinated	26 (86)	0 (0)
Partially vaccinated	3(10)	5 (62)
Not vaccinated	1 (3)	3 (37)
Other vaccination including extended program of immunization in family		
Fully vaccinated	30 (100)	7(87%)
Not Vaccinated	0 (0)	1(12)
Reasons for Receiving / Not Receiving COVID-19 Vaccine		
Reasons for receiving the vaccine		
1. Protection from COVID-19	21 (70)	-
2. Mandated by doctor/hospital	5 (16)	-
3. Non-medical reasons	12 (40)	-
Reasons for not receiving the vaccine		
1. Not convinced/ possible bad outcome	-	6(75)
2. Foreign National Identity Card	-	1 (12)
3. Logistics	-	1 (12)
Perceived Benefit/Risk of COVID-19 Vaccination		
Perceived benefit of COVID-19 vaccination		
1. Decreased risk of COVID-19 and disease severity.	15 (50)	-
2. No benefit	15(50)	-
Perceived risk of COVID-19 vaccination		
1. Not needed/ lack of trust	-	6 (75)
2. Side effects of the vaccine may be harmful.	-	2 (25)

home management. Fully vaccinated patients were 79% (30) and 21% (8) never received COVID vaccinations. Perceived risk of COVID-19 to themselves was considered non-dangerous by 44 % (17) of patients. Other attributes can be seen in Table 1.

A higher proportion of graduates among the vaccinated group (50%) reflect the possible association of education level with COVID-19 vaccine acceptance as shown in another study as well [10]. Among vaccinated patients' families, vaccination status was almost 100% for childhood vaccines and 96% for COVID-19 vaccination. Some of the non-medical reasons for getting vaccinated reported by 40% (12) participants included fear of bank account/mobile sim block by the Government and travel restrictions. Sinopharm was the most frequent vaccine received by patients followed by Moderna and others (Fig. 1).

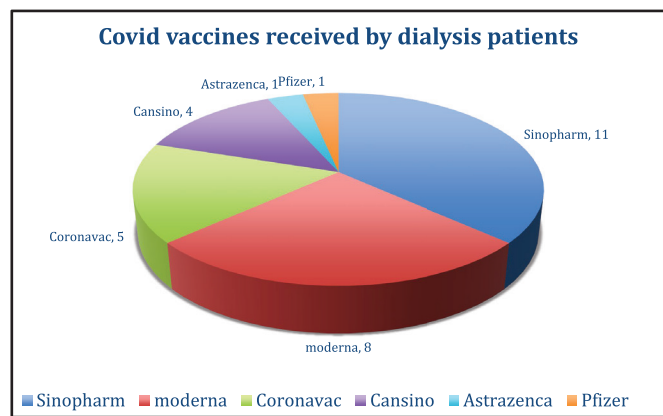


Fig. (1): Types of Covid vaccines received by dialysis patients at NIKUD Research Center.

Among the unvaccinated group, beliefs in myths regarding COVID-19 vaccination outcomes, fear of the unknown, and lack of trust in vaccines are among the reasons for not getting vaccinated against COVID-19. Fact that the majority of patients in the unvaccinated group had not witnessed COVID themselves or in their close family members, potentially supplemented their belief. A rapid national survey of the US population shows similar results where more than a fifth of the participants (22%) reported COVID-19 vaccine hesitancy [11]. Vaccine hesitancy in other high-risk populations like health care workers (22.51%) [12], and breast cancer patients 34% [10] is somewhat similar to our findings (21%).

This study delivers insight into the hesitancy for the COVID-19 vaccine among hemodialysis patients. It is concerning that majority of the unvaccinated people believed that there is no need for a vaccine and their perceived risk of COVID-19 to themselves as a non-dangerous disease can lead to the potential downfall of their health as well as risk to their family members and *vice-versa*. The pertinent need to encourage the COVID-19 vaccination among dialysis patients and their family members was recognized. Frequent counseling with reliable and evidence-based Health-related education among dialysis patients and their family members is suggested to address and alleviate any concerns associated with the COVID-19 vaccination.

LIMITATIONS

The limitation of this research was a very small sample, therefore large-scale studies on the subject are needed to attain in-depth insight into the contributing factors to overcome the COVID-19 vaccine hesitancy.

CONSENT FOR PUBLICATION

Informed written consent was obtained from all study participants.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGEMENTS

Declared none.

AUTHORS CONTRIBUTION

FK: Conception and design, interpretation, critical revision, final approval.

MF: Data acquisition and analysis, interpretation, drafting, final approval.

MWS: Data acquisition and analysis, interpretation, drafting, final approval.

REFERENCES

- UpToDate. COVID-19: Vaccines to prevent SARS-CoV-2 infection 2021 [Available from: https://www.uptodate.com/contents/COVID-19-vaccines-to-prevent-sars-cov-2-infection?sectionName=IMMUNOGENICITY,%20EFFICACY,%20AND%20SAFETY%20OF%20SELECT%20VACCINES&search=COVID-19%20vaccines%20efficacy&topicRef=127454&anchor=H4048778065&source=see_link#H4048778065].
- Wise J. Child vaccination rates drop in England as MMR uptake falls for the fourth year. *BMJ* 2018; 362: k3967.
- Francis A, Baigent C, Ikizler TA, Cockwell P, Jha V. The urgent need to vaccinate dialysis patients against severe acute respiratory syndrome coronavirus 2: a call to action. *Kidney Int* 2021; 99(4): 791-3.
- Machingaidze S, Wiysonge CS. Understanding COVID-19 vaccine hesitancy. *Nature Med* 2021; 27(8): 1338-9.
- Kashif M, Fatima I, Ahmed AM, Ali SA, Memon RS, Afzal M, *et al.* Perception, willingness, barriers, and hesitancy towards COVID-19 vaccine in Pakistan: comparison between healthcare workers and general population. *Cureus* 2021; 13(10): e19106.
- Ahmad S, Babar MS, Ahmadi A, Essar MY, Khawaja UA, Lucero-Prisno DE. Polio amidst COVID-19 in Pakistan: what are the efforts being made and challenges at hand? *Am J Trop Med Hyg* 2020; 104(2): 446-8.
- Organization WHO. COVID-19 in Pakistan: WHO fighting tirelessly against the odds 2020 [Available from: <https://www.who.int/news-room/feature-stories/detail/COVID-19-in-pakistan-who-fighting-tirelessly-against-the-odds>].
- Akhtar H, Afridi M, Akhtar S, Ahmad H, Ali S, Khalid S, *et al.* Pakistan's response to COVID-19: overcoming national and international hypes to fight the pandemic. *JMIR Public Health Surveill* 2021; 7(5): e28517.
- Imran S, Sheikh A, Saeed Z, Khan SA, Malik AO, Patel J, *et al.* Burden of chronic kidney disease in an urban city of Pakistan, a cross-sectional study. *J Pak Med Assoc* 2015; 65(4): 366-69.
- Villarreal-Garza C, Vaca-Cartagena BF, Becerril-Gaitan A, Ferrigno AS, Mesa-Chavez F, Platas A, *et al.* Attitudes and factors associated with COVID-19 vaccine hesitancy among patients with breast cancer. *JAMA Oncol* 2021; 7(8): 1242-4.
- Khubchandani J, Sharma S, Price JH, Wiblishauser MJ, Sharma M, Webb FJ. COVID-19 vaccination hesitancy in the United States: a rapid national assessment. *J Community Health* 2021; 46(2): 270-7.
- Biswas N, Mustapha T, Khubchandani J, Price JH. The nature and extent of COVID-19 vaccination hesitancy in healthcare workers. *J Community Health* 2021; 46(6): 1244-51.