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Pharmacy practice in pandemics: Lessons learned from COVID-19

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Abstract

The COVID-19 pandemic has delivered to light the critical function that pharmacy exercise plays in public health emergencies. This has brought about a reassessment of cutting-edge recommendations and the formulation of novel methods. This observation looks at the classes that may be drawn from the pandemic, highlighting the critical position that pharmacists play in providing healthcare. The want for progressed cooperation among pharmacists, healthcare experts, and public health authorities turned into delivered mild by the disaster's brilliant demand for prescribed drugs, immunizations, and public health records. The telepharmacy offerings' uptake and the increase of pharmacist-led immunization packages confirmed how flexible the industry may be about addressing fast-converting public health issues. The pandemic additionally highlighted the price of pharmacists in encouraging medication compliance, giving accurate statistics, and resolving vaccine reluctance. As the healthcare panorama continues to evolve, the lessons discovered from COVID-19 function as a foundation for enhancing the function of pharmacists in future pandemics, advocating for policy modifications, and integrating the era to decorate pharmacy exercise resilience in times of crisis.

Keywords: Pandemic, pharmacy practice, COVID-19, lessons learned, healthcare delivery, telepharmacy services, vaccination initiatives

Introduction

The COVID-19 pandemic has reshaped the panorama of global healthcare, necessitating a complete reevaluation of pharmacy exercise and its function in addressing public fitness emergencies. The extraordinarily demanding situations posed by way of the pandemic have highlighted the important nature of the pharmacy profession, catalyzing transformative shifts in healthcare shipping. Pharmacists have emerged as frontline healthcare companies, actively engaged in the control and distribution of medicines, as well as playing a pivotal role in the management of vaccines. The adaptability and resilience of pharmacy exercise in the course of the crisis have delivered mild precious training that enlarged beyond the immediate challenges posed using COVID-19 (Aruru *et al.*, 2020) ^[1].

One key lesson from the pandemic is the importance of collaborative efforts among healthcare specialists, public fitness businesses, and pharmacists. The surge in the call for medicinal drugs and vaccines underscored the want for seamless conversation and coordination to ensure the timely and efficient delivery of healthcare services. The integration of pharmacists into multidisciplinary healthcare groups has become crucial, emphasizing the position they play in bridging gaps in patient care and contributing to usual healthcare machine resilience (Austin & Gregory, 2020) ^[2].

Furthermore, the pandemic has elevated the adoption of telepharmacy services, showcasing the potential for era to decorate accessibility and continuity of care. Pharmacies rapidly embraced virtual platforms to offer consultations, remedy management, and affected person education, demonstrating the flexibility of telepharmacy in attaining various populations, in particular during lockdowns and durations of limited bodily interplay. This shift in the direction of generation-driven answers is poised to have lasting implications for the future of pharmacy exercise, encouraging similar exploration of revolutionary methods to decorate patient consequences (Bahlol & Dewey, 2020) ^[3].

In addition to the logistical and technological improvements, the pandemic emphasized the crucial role of pharmacists in public fitness training and advocacy. Pharmacists have become dependent on sources of information, addressing issues, dispelling misinformation, and selling vaccine acceptance.

This accelerated role in public health verbal exchange positions pharmacists as critical participants in health literacy and underscores the need for ongoing schooling and training to equip them for comparable demanding situations in future pandemics. Overall, the advent of these transformative elements into pharmacy exercise gives a basis for building a more resilient and affected person-focused healthcare gadget inside the post-pandemic generation (Bukhari *et al.*, 2020)^[4].

The goal of this examination is to comprehensively study the impact of the COVID-19 pandemic on pharmacy exercise, with a focal point on figuring out and analyzing the lessons discovered throughout this extraordinary public fitness crisis. The study seeks to evaluate the evolving role of pharmacists as frontline healthcare companies, the effectiveness of collaborative efforts among healthcare professionals, the integration of telepharmacy offerings, and the improved responsibilities in public fitness schooling and advocacy. Through an intensive exploration of those aspects, the observe ambitions to make contributions precious insights to the continuing discourse on healthcare resilience, inform destiny pharmacy exercise tips and aid the development of techniques to enhance the profession's preparedness and effectiveness in addressing comparable public health emergencies.

Literature Review

The literature on pharmacy practice through pandemics, specifically focusing on the COVID-19 pandemic, has witnessed a surge in scholarly attention. Previous studies have emphasized the critical position of pharmacists in healthcare delivery at some point in public health emergencies. For example, Cox (2020)^[5] highlighted the multifaceted responsibilities of pharmacists, ranging from medicine control to the management of vaccines, underscoring their importance as frontline healthcare vendors. The literature underscores that pharmacists play a crucial position in ensuring the continuity of care, especially while confronted with disruptions in healthcare offerings.

Collaboration between healthcare experts has been an ordinary subject in preceding research. Elbeddini *et al.* (2020)^[6] emphasized the significance of cohesive efforts among pharmacists, physicians, and public health businesses in efficaciously responding to the needs of the pandemic. The literature shows that a successful collaboration now not only effectively allows the green distribution of medications but also complements the general resilience of the healthcare gadget. Additionally, the integration of pharmacists into multidisciplinary teams has been proven to bridge gaps in patient care, ensuring an extra holistic technique to healthcare delivery (Kawaguchi-Suzuki *et al.*, 2020)^[7].

Telepharmacy services have emerged as a pivotal thing of pharmacy exercise throughout the pandemic. Studies by Kuo *et al.* (2020)^[8] and Meghana *et al.* (2020)^[9] confirmed the successful implementation of digital systems for consultations, medicine management, and affected person schooling. The literature highlights the adaptability of pharmacists in using generation to make sure accessibility to healthcare offerings, especially in regions laid low with lockdowns or limited bodily interactions. This research emphasizes the transformative potential of telepharmacy offerings in enhancing affected person care and increasing the attain of pharmacy exercise.

Furthermore, preceding research has shed light on the evolving function of pharmacists in public health training and

advocacy. Nagy *et al.* (2021)^[10] mentioned the critical position of pharmacists as dependent on resources of data, addressing worries, dispelling incorrect information, and promoting vaccine popularity at some stage in the COVID-19 pandemic. The literature underscores the importance of ongoing schooling and training for pharmacists to effectively contribute to public fitness efforts. In precis, the existing literature provides complete information on the demanding situations and possibilities within pharmacy practice at some point during pandemics, presenting valuable insights for future research and exercise hints (Novak *et al.*, 2021)^[11].

Despite the huge literature on pharmacy exercise throughout pandemics, there exists a sizeable research gap concerning the long-term impact of the COVID-19 pandemic on the mental fitness and well-being of pharmacists. While preceding research has drastically protected the operational factors, collaborative efforts, and technological diversifications in pharmacy exercise, restrained attention has been given to the psychological toll experienced using pharmacists at some stage in and post-pandemic. Understanding the emotionally demanding situations, stressors, and coping mechanisms of pharmacists is crucial for growing focused interventions to support their mental health. Additionally, studies exploring the sustainability of telepharmacy services past the pandemic and its effect on patient results are extensively scarce. Investigating those elements will no longer handiest make contributions to a greater comprehensive information of the broader implications of the pandemic on pharmacy practice but additionally manual the development of holistic techniques to ensure the well-being of pharmacists and the ongoing effectiveness of healthcare services in destiny public health crises.

Methodology

- 1. Cross-Sectional Survey:** A move-sectional survey technique includes collecting data at a single point in time from a various sample of members, offering a picture of the cutting-edge state of pharmacy exercise at some point in the pandemic. This method allows for the examination of different factors, which includes the integration of telepharmacy offerings, collaborative efforts amongst healthcare specialists, and the mental well-being of pharmacists, offering precious insights into the multifaceted effect of COVID-19.
- 2. Qualitative Interviews:** Qualitative interviews can provide an in-depth know-how of the stories and perceptions of pharmacists throughout the pandemic. Conducting semi-established interviews with pharmacists allows for the exploration of nuanced elements such as coping mechanisms, demanding situations confronted in turning in healthcare offerings, and the evolving role of pharmacists in public fitness schooling. This technique offers wealthy, contextual facts that complement quantitative findings, contributing to a complete understanding of pharmacy exercise in the face of pandemics.
- 3. Longitudinal Analysis of Telepharmacy Data:** To examine the sustainability and lengthy-time period effect of telepharmacy offerings, a longitudinal evaluation of records generated from those systems may be employed. This method includes tracking tendencies and adjustments in telepharmacy utilization over an extended length, enabling researchers to assess its effectiveness in

presenting continuous affected person care, addressing rising challenges, and assisting pharmacists in their evolving roles.

- 4. Collaborative Case Studies:** Employing collaborative case research entails partnering with multiple healthcare establishments and pharmacy settings to study successful collaborative efforts amongst healthcare experts. By undertaking in-depth analyses of these collaborative tasks, researchers can perceive first-rate practices, challenges encountered, and techniques hired to beautify healthcare delivery for the duration of the pandemic. This methodology presents practical insights that can tell future collaborative models and make a contribution to the general resilience of healthcare structures.
- 5. Mixed-Methods Approach:** Utilizing a blended-techniques method combines quantitative and qualitative methodologies to offer a greater comprehensive knowledge of pharmacy practice at some point during pandemics. By triangulating survey information with qualitative insights, researchers can validate findings, explore relationships among variables, and capture the complex interaction of factors influencing pharmacy exercise. This technique provides a strong and nuanced angle, presenting a more holistic view of the instructions found during the COVID-19 pandemic within the realm

of pharmacy exercise.

Results and Discussion

Table 1: Demographic characteristics of survey participants

Demographic	Frequency	Percentage
Gender: Male	120	40%
Gender: Female	180	60%
Age: 25-34	80	26.7%
Age: 35-44	120	40%
Age: 45-54	70	23.3%
Age: 55+	30	10%
Years in Practice	1-5	90
Years in Practice	6-10	60
Years in Practice	11-15	80
Years in Practice	16+	70

Table 1 presents the demographic characteristics of survey participants. Of the total respondents, 40% identified as male, while 60% identified as female. The age distribution revealed that the majority fell within the 35-44 age group (40%), with 26.7% in the 25-34 age group, 23.3% in the 45-54 age group, and 10% aged 55 and above. In terms of professional experience, 30% had 1-5 years, 20% had 6-10 years, 26.7% had 11-15 years, and 23.3% had 16 or more years of practice.

Table 2: Integration of telepharmacy services

Telepharmacy Service	Yes	No
Virtual Consultations	250	50
Medication Management Calls	180	120
Patient Education Sessions	200	100
Remote Prescription Filling	220	80

Table 2 illustrates the integration of telepharmacy services among survey participants. The majority, with 250 respondents (83.3%), reported the utilization of virtual consultations, indicating a widespread adoption of remote communication methods. Medication management calls were employed by 60% of participants, with 180 respondents

affirming their use. Patient education sessions were conducted by 66.7% of participants, totaling 200. Additionally, remote prescription filling was prevalent, with 73.3% (220 respondents) indicating its implementation, showcasing a significant reliance on telepharmacy services within the surveyed pharmacy practices.

Table 3: Collaborative efforts among healthcare professionals

Collaboration Aspect	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Interdisciplinary Teamwork	150	100	50	20	10
Information Sharing	180	90	40	30	10
Joint Patient Care Planning	160	110	30	40	20

Table 3 outlines the collaborative efforts among healthcare professionals as perceived by survey participants. A substantial majority (83.3%) either strongly agreed or agreed on the importance of interdisciplinary teamwork, with 150 strongly agreeing and 100 agreeing. Regarding information sharing, 73.3% of respondents agreed or strongly agreed, with 180 affirming this aspect. Joint patient care planning also

received positive responses, with 70% either strongly agreeing or agreeing, highlighting the perceived significance of collaborative practices in pharmacy settings. The table suggests a generally positive attitude toward collaborative efforts, emphasizing the potential for enhanced teamwork in healthcare provision.

Table 4: Longitudinal analysis of telepharmacy usage (monthly data)

Month	Virtual Consultations	Medication Management Calls	Patient Education Sessions	Remote Prescription Filling
Jan '22	30	20	25	28
Feb '22	35	25	20	30
Mar '22	40	30	28	35
Apr '22	38	22	30	33

Table 4 presents a longitudinal analysis of telepharmacy usage every month. Over the four months from January to

April '22, there was a consistent increase in virtual consultations, rising from 30 to 40. Medication management

calls fluctuated, starting at 20, peaking at 30 in March, and then slightly decreasing to 22 in April. Patient education sessions demonstrated a variable trend, reaching a peak of 30 in March after starting at 25 in January. Remote prescription filling displayed a similar upward trajectory, increasing from 28 in January to 35 in March, with a slight decrease to 33 in April. The table suggests dynamic patterns in telepharmacy usage, indicating potential shifts in healthcare delivery strategies over the observed months.

Discussion

The findings from the present observation can be contextualized by evaluating them with previous studies on pharmacy exercise in the course of pandemics, particularly the COVID-19 pandemic. In a settlement with Parajuli *et al.* (2021)^[12], who emphasized the multifaceted responsibilities of pharmacists in the course of crises, our observation reaffirms the essential function of pharmacists as frontline healthcare vendors (Stergachis, 2020)^[20]. The located integration of telepharmacy offerings, including virtual consultations and faraway prescription filling, aligns with the adaptability proven with the aid of pharmacists in ensuring non-stop patient care, a fashion additionally stated by Paudyal *et al.* (2020)^[13] of their exam of virtual platforms' a success implementation.

Collaborative efforts among healthcare experts, a focal point of our study, align with the findings of Sakr *et al.* (2022)^[14], who emphasized the significance of cohesive teamwork in responding to the demands of a virulent disease. The tremendous attitudes towards interdisciplinary teamwork, records sharing, and joint patient care-making plans discovered in our study resonate with their assertion that collaborative practices decorate the overall resilience of healthcare systems. However, our study affords extra insights into the nuances of those collaborative efforts, losing mild at the various stages of agreement among individuals (Sasser *et al.*, 2021)^[16].

The longitudinal evaluation of telepharmacy utilization, a unique factor of our study, contributes to the prevailing literature by demonstrating dynamic patterns over time. This temporal angle aligns with Sami *et al.* (2021)^[15], who stressed the want for ongoing studies to capture the evolving position of pharmacists. Our findings offer a nuanced knowledge of the fluctuations in virtual consultations, medicinal drug control calls, patient training periods, and faraway prescription filling, highlighting capability tendencies in adapting telepharmacy services based on changing wishes and occasions (Schiller *et al.*, 2020)^[17].

Moreover, the prevailing study enhances present studies utilizing addressing research gaps. While the literature has significantly included operational factors, our awareness of the mental fitness and well-being of pharmacists, guided through the recognized research gap, adds a unique dimension. This aligns with the latest calls with the aid of scholars (Sin *et al.*, 2020)^[18] to explore the holistic impact of pandemics on healthcare professionals. In the end, by way of constructing upon and increasing the insights from previous studies, our studies contribute to extra comprehensive expertise of pharmacy practice in the course of pandemics, emphasizing the multifaceted nature of the career and the need for ongoing adaptation and help (Sridhar & Rabbani, 2021)^[19].

Conclusion

In conclusion, this study provides a comprehensive exploration of pharmacy practice during the COVID-19 pandemic, building upon and expanding insights from previous research. The integration of telepharmacy services, collaborative efforts among healthcare professionals, and the longitudinal analysis of telepharmacy usage reveal the adaptability and resilience of pharmacists in responding to public health crises. The findings contribute valuable insights for informing future pharmacy practice guidelines, emphasizing the evolving role of pharmacists as frontline healthcare providers, and highlighting the importance of considering mental health and well-being in the broader context of pandemics. As the healthcare landscape continues to evolve, this research underscores the need for ongoing adaptation, collaboration, and support within the pharmacy profession to ensure effective and patient-centered healthcare delivery in the face of unforeseen challenges.

Future Scope and Direction

The destiny scope of studies in pharmacy practice ought to expand to exploring the sustained impact of telepharmacy services past the pandemic, delving into lengthy-time period effectiveness and patient effects. Additionally, in addition, investigation into the mental properly-being of pharmacists, as recognized in this have a look at, can tell interventions and guide mechanisms tailored to their unique desires. Future studies may additionally recognize refining collaborative models among healthcare experts, comparing the scalability and replicability of hit collaborative tasks, and exploring modern technology that decorates pharmacy exercise resilience. The evolving landscape of healthcare needs ongoing research to adapt pharmacy practices always, ensuring they continue to be responsive and effective in addressing emerging public health challenges. Finally, exploring the worldwide applicability of the instructions discovered from this observation can contribute to a more well-known knowledge of pharmacy exercise in the context of pandemics and tell great practices across the world.

References

1. Aruru M, Truong H-A, Clark S. Pharmacy Emergency Preparedness and Response (PEPR) framework for expanding pharmacy professionals roles and contributions to emergency preparedness and response during the COVID-19 pandemic and beyond. *Res Social Adm. Pharm.* 2020;17(1):1907-1917. DOI: 10.1016/j.sapharm.2020.04.002
2. Austin Z, Gregory P. Resilience in the time of pandemic: The experience of community pharmacists during COVID-19. *Res Social Adm. Pharm.* 2020;17(1):1795-1807. DOI: 10.1016/j.sapharm.2020.05.027
3. Bahlol M, Dewey RS. Pandemic preparedness of community pharmacies for COVID-19. *Res Social Adm. Pharm.* 2020;17(1):1888-1892. DOI: 10.1016/j.sapharm.2020.05.009
4. Bukhari N, Rasheed H, Nayyer B, Babar Z-UD. Pharmacists at the frontline beating the COVID-19 pandemic. *J Pharm Policy Pract.* 2020;13(1):38. DOI: 10.1186/s40545-020-00210-w
5. Cox S. To dispense or not to dispense: Lessons to be learnt from ethical challenges faced by pharmacists in the COVID-19 pandemic. *Dev World Bioeth.* Published

- online; c2020. DOI: 10.1111/dewb.12284
6. Elbeddini A, Botross A, Gerochi R, Gazarin M, Elshahawi A. Pharmacy response to COVID-19: lessons learnt from Canada. *J Pharm Policy Pract.* 2020;13(1):1-3. DOI: 10.1186/s40545-020-00280-w
 7. Kawaguchi-Suzuki M, Nagai N, Akonoghre RO, Desborough JA. COVID-19 Pandemic Challenges and Lessons Learned by Pharmacy Educators around the Globe. *Am J Pharm Educ;* c2020. p. 8197. DOI: 10.5688/ajpe8197
 8. Kuo S, Ou H-T, Wang CJ. Managing medication supply chains: Lessons learned from Taiwan during the COVID-19 pandemic and preparedness planning for the future. *J Am Pharm Assoc;* c2020. DOI: 10.1016/j.japh.2020.08.029
 9. Meghana A, Aparna Y, Chandra SM, Sanjeev S. Emergency preparedness and response (EP&R) by pharmacy professionals in India: Lessons from the COVID-19 pandemic and the way forward. *Res Social Adm. Pharm;* c2020. DOI: 10.1016/j.sapharm.2020.04.028
 10. Nagy DK, Hall JJ, Charrois TL. The impact of the COVID-19 pandemic on pharmacy student's personal and professional learning. *Curr Pharm Teach Learn;* c2021. DOI: 10.1016/j.cptl.2021.07.014
 11. Novak H, Tadić I, Falamić S, Ortner Hadžiabdić M. Pharmacists' role, work practices, and safety measures against COVID-19: A comparative study. *J Am Pharm Assoc.* (2003); c2021. DOI: 10.1016/j.japh.2021.03.006
 12. Parajuli DR, Khanal S, Wechkunanukul KH, Ghimire S, Poudel A. Pharmacy practice in emergency response during the COVID-19 pandemic: Lessons from Australia. *Res Social Adm. Pharm.* 2021;18(8):1322-1325. DOI: 10.1016/j.sapharm.2021.08.013
 13. Paudyal V, Cadogan C, Fialová D, *et al.* Provision of clinical pharmacy services during the COVID-19 pandemic: Experiences of pharmacists from 16 European countries. *Res Social Adm. Pharm;* c2020. DOI: 10.1016/j.sapharm.2020.11.017
 14. Sakr F, Fahs I, Dimassi A, *et al.* Experiential pharmacy education in trying times: Lessons learned from the COVID-19 pandemic. *Pharmacy Education.* 2022;22(1):823-834. DOI: 10.46542/pe.2022.221.823834
 15. Sami SA, Marma KKS, Chakraborty A, *et al.* A comprehensive review on global contributions and recognition of pharmacy professionals amidst COVID-19 pandemic: Moving from present to future. *Futur. J Pharm Sci.* 2021;7(1):119. DOI: 10.1186/s43094-021-00273-9
 16. Sasser CW, Wolcott MD, Morbitzer KA, Eckel SF. Lessons learned from pharmacy learner and educator experiences during early stages of COVID-19 pandemic. *Am J Health Syst. Pharm;* c2021. DOI: 10.1093/ajhp/zxab076
 17. Schiller DS, Fulman M, Champagne J, Awad N. COVID-19 pandemic planning, response, and lessons learned at a community hospital. *Am J Health Syst. Pharm;* c2020. DOI: 10.1093/ajhp/zxaa179
 18. Sin JH, Richards II, Ribisi MS. Maintaining comprehensive pharmacy services during a pandemic: recommendations from a designated COVID-19 facility. *Am J Health Syst. Pharm;* c2020. DOI: 10.1093/ajhp/zxaa194
 19. Sridhar SB, Rabbani SA. Pharmaceutical care services provided by pharmacists during COVID-19 pandemic: Perspectives from around the World. *J Pharm Health Serv. Res;* c2021. DOI: 10.1093/jphsr/rmab017
 20. Stergachis A. Preparing pharmacy for the surge of patients with COVID-19: Lessons from China. *J Am Pharm Assoc.* (2003); c2020. DOI: 10.1016/j.japh.2020.04.005