The effect of COVID-19 on the mental healthcare system in low and middle–income countries: identification of gaps and challenges in mental health and drug use disorder treatment services during the COVID-19 pandemic

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Abstract

The COVID-19 pandemic and the resulting economic collapse have negatively affected many people's mental health creating new barriers and obstacles for those already suffering from mental illness and substance use disorders. While a relatively modest amount of literature exploring such consequences in high-income countries exists, for low- and middle-income countries (LMICs) where 83% of the global population lives, the attention has been scarce. This research project attempts to study and identify challenges faced by the participating LMICs in delivering treatment services for substance use disorders in the face of the pandemic, and the adaptive strategies implemented to maintain service continuity. Based on a questionnaire survey and a set of interviews conducted to participating centers from the chosen LMICs, we have found that despite limitations, technological adaptations such as virtual platforms for service delivery were widely implemented; as well as an alarming increase in social stigma against drug use was found. Moreover, the results indicate the need for physical contact for more serious patients, therefore, it is relevant to promote a hybrid system between virtual and in-person treatments. These findings can be used to build upon further research for designing better and more inclusive policies at the regional, national, and international levels, to ensure that effective treatment becomes accessible to all.

Contents

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1 Introduction

The COVID-19 pandemic and the resulting economic collapse have negatively affected many people's mental health creating new barriers and obstacles for those already suffering from mental illness and substance use disorders (Panchal et al., 2021). Globally, there is a long way to come in terms of equality, especially since COVID-19 has undone decades of socio-economic development and progress. However, mental health services are an essential part of the government's responses to the pandemic, and reforming and readapting the services that provide mental health and substance misuse support may be at the core of nations' recovery (BPS, 2021).

Although great attention has been given to high-income countries (HICs) in terms of the detrimental effects of COVID-19 on the population's wellbeing both physically and mentally, for low- and middle-income countries (LMICs), where 83% of the global population lives, the attention has been scarce (Kola et al., 2021). Recent developments and progression led by the fast adaptability of certain nations and organizations as well as the implementation of the COVID-19 vaccine on a global scale have heightened the need to explore and investigate the impact of the pandemic on LMICs accounting for their wide disparities in quality and accessibility of mental health care, their response plans along with the application of World Health Organization (WHO) guidelines and their key strategies required to reform and build back the mental health care system.

There is a growing body of literature that recognizes the imprint of the COVID-19 pandemic on people's psychological wellbeing, on the mental healthcare system, substance misuse services along with their staff globally. However, much uncertainty still exists about its short-term and long-term effects and consequences on impoverished nations and the possible beneficial initiatives that could be employed in the post-pandemic era. According to the World Drug Report (UNODC, 2020), only 12.5% of people struggling with substance use disorder receive treatment. Moreover, this accessibility tends to be lower for the most vulnerable individuals such as minorities, immigrants, prisoners, and people who live in low and middle-income countries. The barriers to seeking and maintaining treatment for a substance use disorder during the pandemic

caused by services closures, scarce resources, reduced staff, and failure to sufficiently adapt to changing contexts create a problematic situation for the patients, their families, and the healthcare system in general, especially as demonstrated in lower-income countries.

The previous World Drug Report published in 2019 (UNODC, 2019) in a pre-pandemic context shed light onto an alarming increase in substance abuse trends in Lower- and Middle-Income Countries (LMICs), implying that it has become imperative to intensify focus on LMICs and include them under the radar to gather more information. As per the contents of the report, improved knowledge and data availability from 2 LMICs - India and Nigeria, had numbers of drug users surpass the previous estimate by fifteen percent, indicating that there was a lot more to uncover if one were to expand research to previously unexplored territories.

Additionally, the third Sustainable Development Goal (SDG) of the United Nations is related to ensuring healthy lives and promoting well-being for all (UNODC, 2020), specifically target 3.5 focuses on strengthening treatment of substance abuse. The appearance of the pandemic and its effects on all aspects of life has setback the agenda by prolonging the timeline set to achieve these goals. Therefore, the analysis of the treatment services provided during the COVID-19 pandemic has a direct effect on achieving this SDG, gaining a better understanding of the current situation, comprehending the main future challenges, and efficiently allocating scarce resources.

Likewise, the global economic crisis, which was magnified with the pandemic and continues to expand, may decrease the funds to substance use disorder treatment services and their prevention programs, particularly in low and middle-income countries. In addition, it is plunging the already existing unemployment rates even further, with the worst effects showing up in highly vulnerable communities. Therefore, it will be relevant to provide evidence of the COVID-19 impact on patients' lives, but also the consequences for their families and the medical staff.

In that sense, this study aims to identify drug use disorder treatment service delivery gaps through data analysis and determine new opportunities for low and middle-income countries to aid in building back better the mental health system post-pandemic. Through quantitative and qualitative data analysis, our investigation looks to describe the positive and negative effects of COVID-19 on substance use disorder treatment services and highlight limitations/challenges it would pose in the future on the mental healthcare system. Our research findings would contribute to designing and implementing evidence-based policies. This, in turn, would help policymakers explore and recognize new opportunities, and at the same time, mitigate and anticipate the negative outcomes derived from the pandemic.

There are great challenges to overcome how we provide care to patients struggling with SUDs (substance use disorders) in a post-COVID era globally with multiple factors at play. Ensuring quality care to vulnerable people with SUDs and mental illness has become a crucial issue and there is a need to approach it on different fronts.

Moreover, this research proves significant considering it can generate dialogues concerning the opportunities that the pandemic presents to reimagine drug treatment services with a special focus on LMICs, based on previous literature and the data generated. We are interested in

looking deeper at the challenges within the mental healthcare system, particularly regarding substance-use-associated mental health disorders, that were exposed by the pandemic.

As depicted in Fig.1, the responders to the first survey conducted by UNODC in June 2020 were mainly from a set of 6 LMICs and so, the focus of this research will solely rely on information coming from these, namely the Philippines, Indonesia, Kenya, Pakistan, Nigeria, and Kazakhstan, which need to be better explored to derive meaningful information on adaptations that facilitated the delivery of treatment services to the afflicted population in the time of the pandemic.

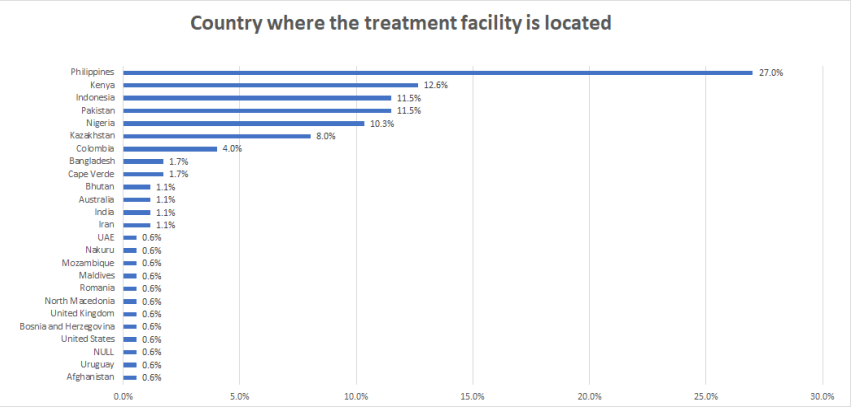


Figure 1: Number of responses from treatment service providers by country, surveyed June 2020

Factors of interest include exploring the ease or lack thereof, accessibility of treatment centers to medications, information on drug consumption, monitoring drug availability, etc. to name a few. These factors can shed some light on the underlying framework of operation of mental healthcare service delivery and highlight limitations that could aid in probing further and deeper the same, which in turn could serve as a potential tool to build strategies and reforms in the coming years.

It correspondingly becomes relevant to analyze not only the limitations and adaptations of the medical centers in these difficult moments but also to propose flexible and innovative solutions to anticipate the potential negative consequences for people with a substance use disorder. The data generated from this study will help create a clearer picture of current trends and limitations in LMICs which can be used by UNODC for their outreach programs. In addition, it will help bring to light the most vulnerable and under-resourced sections that require immediate attention, as was observed during the preliminary data analysis, for the partner organizations to implement a rapid action plan.

To our knowledge, there is limited evidence analyzing which are the main gaps in drug abuse disorder treatment service delivery for low and middle-income countries during the pandemic COVID-19, and identifying the predominant challenges for its adaptation, and proposing long-term solutions.

The remainder of the paper is organized as follows. Section 2 discusses the literature review about recent studies of drug abuse disorder treatment service delivery and its adaptation to the

conditions of the COVID-19 pandemic. Section 3 describes the methodology of the research, the data, and the variables used in the empirical analysis. Section 4 reports and discusses the results. Section 5 concludes and further discusses the managerial and policy implications of the results.

2 Literature review

With the emergence of the coronavirus disease (COVID-19), the health system has been threatened and in this line, the availability of drug use disorder treatment service delivery may have reduced even more. Some studies support that idea. There was a significant reduction of drug services in European countries during the first two months of the pandemic in terms of providing treatment and harm reduction interventions (EMCDDA, 2020). Specifically, people with addictive disorders are predominantly affected by the disruption of access to services during this contingency (Marsden, et al., 2020). A survey conducted in 130 countries found that around 60% of mental health services reported disruptions for vulnerable people and only 17% of the countries have additional funding to activities for maintaining mental health and psychosocial support (WHO, 2020). Recent analyses have experts predicting the COVID-19 pandemic to likely cause an upsurge in people who use drugs (PWUDs) mainly due to economic pitfalls, by comparing trends and drawing parallels with the Economic crisis of 2008 (Storti et al., 2021).

According to the World Drug Report published annually by the UNODC (World Drug Report 2020, World Drug Report 2021), analyses of drug use patterns demonstrated an increased trafficking and consumption of drugs in addition to suggesting that these projections were likely to increase. Similarly, data from other organizations like the SAMHSA (Substance Abuse and Mental Health Service Administration), an agency under the U.S. Department of Health and Human Services, have consistently stressed the impact of substance abuse on mental health and vice-versa (National Survey on Drug Use and Health, 2014 and 2015, SAMHSA).

The reasons for these interruptions in the services could be associated with the fact that providers have been forced to close or restrict the access to guarantee lockdown and social distancing measures and simultaneously, there is a decrease in the staff available to work due to the virus. Dunlop, et al., 2020, studied a case of Opiate treatment, analyzing some particular issues and demonstrating the limitations to have access to the medications, as it implies to wait in small waiting areas with queues for prolonged periods of time which cannot be possible with the social distancing restrictions, the impossibility of daily supervised dosing for some specific medicines and the problems in the withdrawal services consequently of additional demand and reduced supply. The COVID-19 pandemic has impacted this group of patients by raising their vulnerability to infection manifold, enhanced mainly by existing comorbidities due to drug use. Pulmonary damage due to smoking/vaping and HIV or Hepatitis B transmission due to syringe use both increase risk of mortality whereas, socio-economic factors including overcrowding in shelters and homelessness facilitate easier viral spread in this population, making it critical to design public health and safety regulations for the protection of all, especially of minority and low-income communities. As published by a Cambridge study, one of the first systematic reviews undertaken to compile data on pandemic-associated adaptations made in mental health settings

(Raphael et al., 2021) mental health facilities adopted a range of precautionary measures to protect patient health as well as maintain staff well-being. The authors strongly emphasized the need for communication and presentation of clear information from mental health organizations to develop better groundwork that would help control contagion spread both locally and globally.

But even if there is evidence of many shortcomings in the drug use disorder treatment service delivery during the pandemic, there is also evidence of successful cases of healthcare facilities that have been adapting to the new conditions. Peavy, et al (2020) point out some strategies implemented in clinics in Washington to maintain access to Methadone among people with a high risk for HIV in an Opioid treatment program. The authors remark how treatment services have quickly generated and implemented policies that balance the safety of patients and the protection of the staff without interrupting the access to medicines. Specifically, the medical centers decided to create five different categories of methadone patients according to their profile and for each one established a specific method to provide medications.

Recently, the Journal of Substance Abuse Treatment published multiple commentaries by experts highlighting the pros and cons of treatment service delivery adaptations at both regional and national levels in the U.S during the pandemic. Across these studies, (Wenzel and Fishman, 2021; Liece and Monley, 2021; Hughto et al., 2021) a recurring theme was the advent of innovative ideas and practices across different regional centers to deliver treatments in a manner acknowledged and appreciated by both provider and patient. Similar studies undertaken in Europe and Australia (EMCDDA trend spotter briefing May 2020; Dunlop et al. 2020) to evaluate the efficacy of adaptations reflected on the necessity of services to modify the way they cater to the needs of the affected PWUD population in this challenging period. However, these studies reflect a thorough and extensive evaluation of data coming from high-income countries (HICs). There remains a lack of evidence-based data from lower and middle-income countries (LMICs). Additionally, the previous World Drug Report published in 2019 (World Drug Report 2019) in a pre-pandemic context shed light onto an alarming increase in substance abuse trends in LMICs, suggesting that it has become imperative to intensify focus on LMICs and include them under the radar to gather more information.

Now that few countries have begun to ease lockdown measures, international as well as national organizations like the World Health Organization (WHO) (WHO News release, 2021), World Economic Forum (WEF) (WEF Ad hoc report, 2020) and Mental Health Innovation Network (MHIN) (Briefing paper, MHIN, 2020) called for governments to increase fund allocation for mental health services, the lack of which was exposed by the pandemic. These sources have elucidated the point that rigid regulations in the face of lockdown can be made more fluid for better access to treatment.

For instance, Sale, Polyakov, & Eaton (2020) evaluate the long term impacts of COVID-19 highlighting that this situation should be considered as an opportunity to change radically mental health policies and provide services with concrete tasks such as ensuring the mental health of the staff, introducing new technologies of service delivery, prioritizing the vaccination of the patients and putting the investment in mental health as urgency in the economic plan for recovering.

Other authors have begun to explore different potential solutions to mental healthcare access in a post-pandemic context. For instance, a review by Lopez-Pelayo et al. published in 2020 (López-Pelayo et al., 2020), presents a concise and organized summary of solutions and the authors have condensed the same in the form of seven different pillars – a couple of which they consider as being temporary in the face of the pandemic while the rest could potentially serve as building blocks to permanent reforms in the mental healthcare system and policy-making. Additionally, the success of adaptations like switching to digitalized platforms to deliver treatment has prompted experts to explore the possibility of a permanent integration of the same in a post-COVID world. This is reflected in a commentary by Sara Warfield et al. (Warfield et al., 2021) where they elucidate the positive implications of televised medicine and digital interventions in remote and rural areas and how these tools can be implemented into routine practice and carried forward into the future.

In the same vein, a questionnaire made to addiction medicine specialists in 77 countries explore the impact of the pandemic in substance use drug treatments and harm reduction services, finding that disadvantaged populations are at greater risk of illness as it is more probable they experience interrupted or substandard service provision (Radfar, et al., 2021). Therefore, authors propose macro-level solutions from policymakers at a national and organizational level, as well as micro-level strategies from social services and health systems, mobilizing resources to medical treatments, healthcare facilities, and provision of medical equipment.

Another interesting finding from research on HICs was the impact of ingenious solutions and their micro-management, with individual centers adopting measures to reduce treatment barriers by setting up "face-to-face" telephone booths, "coordinated pharmacy" models to name a few (Rolando and Subica, 2021). Such measures underscore the significance of need-based innovations that can be applied and explored in a similar fashion to LMICs which by themselves are under-resourced and would need a solid framework to develop on.

In light of the aforementioned, it is clear there are a great number of challenges to overcome this economic, social, and health worldwide crisis. Ensuring quality care to vulnerable people with drug use disorder and mental illness has become a crucial issue and there is a need to approach it on different fronts. For instance, Guan, Kirwan, Beder, Levy, & Law (2021) point out three key challenges to take into account during the adaptation process of the drug disorder treatments: maintain essential services with the appropriate measures to reduce risk of contagion, minimize mental health impact prioritizing the most vulnerable patients and encourage resilience and wellness of the whole personnel.

With this in mind, it becomes apparent that the pandemic will have a long-term impact, and consequently that as a global community we must recognize the main future challenges to create anticipated strategies and take advantage of the positive outcomes that this difficult situation leaves.

3 Empirical Analysis

3.1 Methodology

The empirical strategy of this research is the mixed-method approach, analyzing quantitative and qualitative data and combining the findings in a unique systematic review. Our methodology consists of analyzing the data collected from the UNODC questionnaire, which was conducted in June 2020 for treatment service providers. With this information, a quantitative and qualitative analysis was developed, consisting of questionnaire responses to find tendencies, patterns, and insights about the impact of COVID-19 in drug treatment services.

The next step was to conduct a second questionnaire (see Appendix 1) for the same treatment service providers who previously responded to the 2020 survey, to capture how these service providers continue to evolve their care to fit the dynamically changing circumstances of pandemic life. The second questionnaire was distributed to all the providers from the six chosen countries (Philippines, Indonesia, Kenya, Pakistan, Nigeria, and Kazakhstan) with a new set of questions to extract more relevant information that would help in building the analyses and solidifying our hypotheses.

With the second questionnaire, we aim to understand if there has been a change in providing services and type of interventions after more than one year of the COVID-19 pandemic. Furthermore, to analyze the current health care context in which the treatment service provider is operating and recognize the current situation to access drug treatment service and compare the results with the previous questionnaire. This second questionnaire also enabled us to identify key limitations as well as the implemented strategies providers used to overcome them.

Additionally, it is relevant to know the main effects and consequences (positives and negatives) of COVID in drug treatment services from a professional, expert perspective. For this reason, we conducted virtual interviews (see Appendix 2) with healthcare professionals working in the treatment service providers responding to the second questionnaire administered to incorporate and gain insight into the human experience. A narrative analysis was utilized to analyze the content of the interviews focusing on the stories and experiences shared by the healthcare professionals to elicit deeper awareness about the topic in question.

The final stage was to consolidate all the available data to discover significant relations and provide meaningful results. The summary of the methodology is described in Appendix 3.

Ethical considerations were followed and respected throughout the research process. Respondents participated on a voluntary basis in which full informed consent was obtained prior to the interviews. Participants were fully informed that they have the right to withdraw from participating in the study at any time. The principle of informed consent involves researchers providing sufficient information to allow individuals to participate in the study fully informed of all implications. Anonymity of individuals and organizations participating in the research has been ensured and no vulnerable individual was approached or involved in the present study.

3.2 Data

The initial dataset had 174 observations of the treatment services providers who answered the first questionnaire conducted by UNODC. Six countries (Philippines, Indonesia, Kenya, Pakistan, Nigeria, and Kazakhstan) represented 80% of the answers, so we decided to conduct the second questionnaire to them.

According to the results of the second questionnaire, we gathered 23 responses from 5 countries. Indonesia represents 30% of the answers, followed by the Philippines with 26% and Pakistan with 22% (figure 1). The African countries, Kenya and Nigeria gave the lowest quantity of responses.

Finally, it was possible to conduct five expert interviews (one from Indonesia, one from the Philippines, one from Kenya, and two from Pakistan) with the different clinicians or officers in charge of the treatment centers.

4 Results

4.1 Quantitative Analysis

As per the second survey conducted in September, 2021

All the treatment centers showed a decrease in outpatient treatment services, compared to the situation before the COVID-19 pandemic. By countries, the centers in Nigeria reduced all types of services, while in Kenya, Pakistan, and Indonesia there was an increase in the provision of outreach services.

In terms of the interventions after one year of the pandemic, it was found that outreach interventions, employment support, and recreational services are the interventions with the highest decrease (about 45%) after one year of pandemic, while screening and brief interventions and detoxification/withdrawal management reflect the least change (there was only a decrease in Pakistan).

Other important results are described as follows: 77% of the centers agree there is a flexible lockdown in their countries, while all the participating centers in Nigeria confirm that there is no lockdown there. 68% of the centers assert that more than 70% of their staff members are vaccinated- there is one center in Indonesia, one in Pakistan, and one in Kenya that declares that only between 10% to 30% of their staff members are vaccinated. In Indonesia, about 71% of the centers affirm that less than 30% of their patients are vaccinated. In the Philippines, the majority of the centers (70%) are not sure how many of their patients are fully vaccinated. In Kenya's centers, less than 50% of their patients are fully vaccinated. Moreover, in the Philippines, Kenya,

and Nigeria the main reason for low vaccination rates is the limited access to vaccines, while in Indonesia and Pakistan the principal factor is related to social beliefs.

The results also show that the main limitations in accessing drug treatment services are associated with sociocultural factors, limited staff, and reduced capacity (see figure 2).

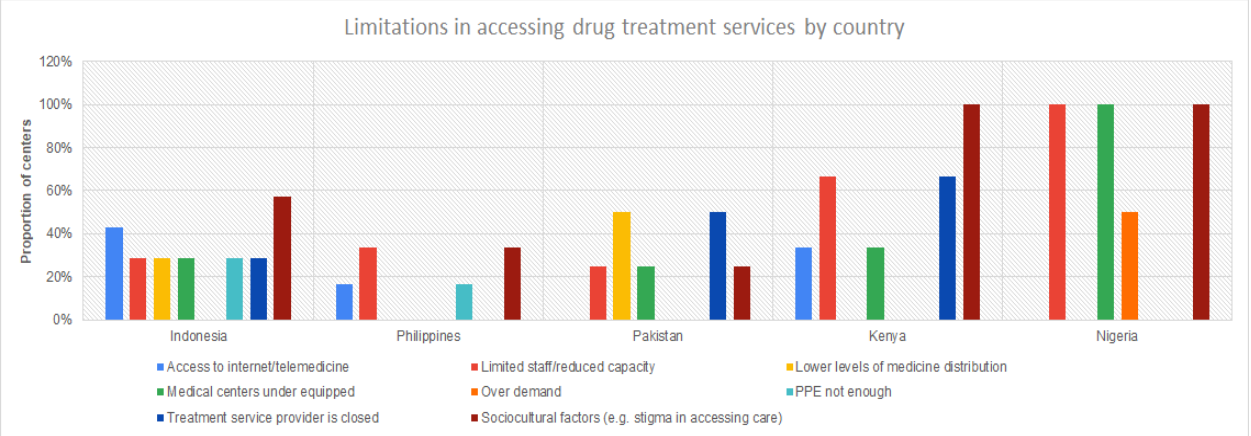


Figure 2. Limitations in accessing drug treatment services by country (except Kazakhstan)

The average rate of availability and access to drug treatment centers varies a lot among the responders, on a scale of 1 to 10 with 1 being least and 10 being most accessible, with a difference of more than six points between the maximum (the Philippines with 8.3 points) and the minimum (Nigeria with 2.5 points) rate of availability as depicted in Figure 3.

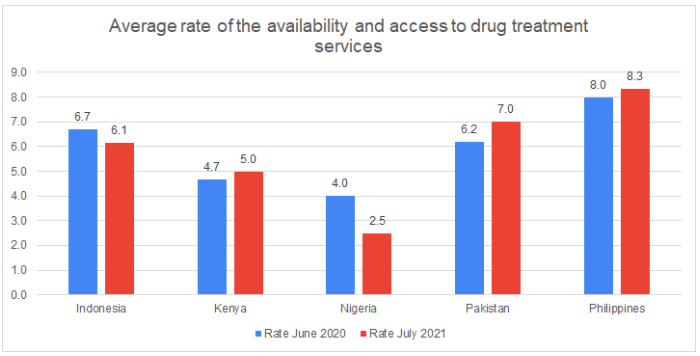


Figure 3. The average rate of availability and access to drug treatment by the country (except Kazakhstan)

In general, all the participating centers gave a similar score in the first and the second questionnaire, which suggests the average situation of accessing drug treatment services has been quite constant during this year of the pandemic. The data additionally demonstrate that in Pakistan and the Philippines there is a slight increase in the availability of the services. However, in Nigerian centers, there is a significant decrease in the score which suggests that the situation is critical in terms of the current access to available drug treatment services.

In the participating countries in this study, sociocultural factors are one of the main limitations to accessing drug treatment services, specifically in Kenya and Nigeria. Additionally, limited staff

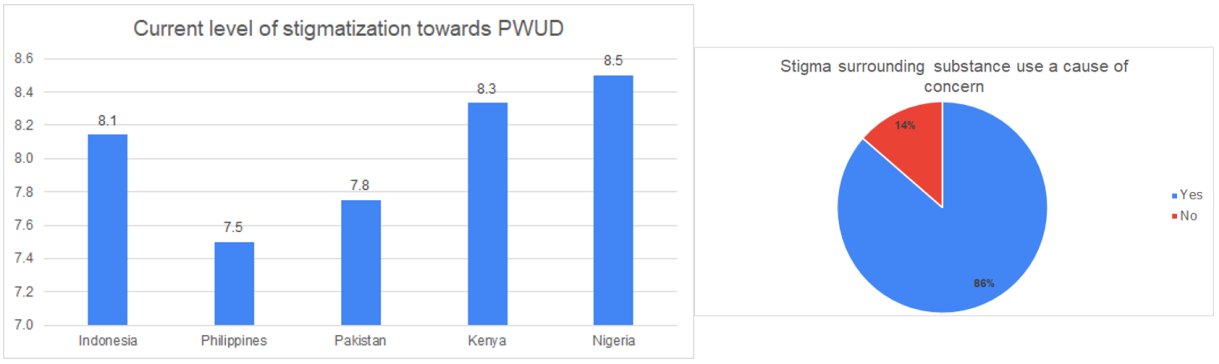
and reduced capacity of services are important challenges that have made it difficult to provide treatment in the face of COVID-19 associated restrictions.

The most frequent strategy implemented by the participating centers to overcome the pandemic was the support of patient contact with family members through alternative services such as videoconferences or calls. Also, the results show that staff training is a relevant issue for the treatment centers to adapt their services to this unexpected situation.

No center in Kenya implemented telemedicine, however, all of them affirmed to use new platforms to schedule the appointments. Taking home medical doses and mobile units was not frequently applied.

Of the new adaptations implemented, staff training and the use of new platforms to schedule appointments will probably prevail in the long term, but virtual services and telemedicine seem not to be feasible in the drug treatment service context. One reason for it should be the high cost to implement it but this hypothesis is not confirmed yet. Another hypothesis could be related to the idea of the need for physical contact to manage the patients. This reflects the importance of the presence of services during the recovery from addiction.

There is considerable concern on the part of all participating centers about the stigma around substance use and substance use disorders, and also the score about the current level of stigmatization towards PWUD is quite high, especially in the African countries, 8.3 and 8.5 for Kenya and Nigeria respectively, on a scale of 1 to 10 with 1 being low and 10 being highly stigmatized (see figure 4).



A. B.

Figure 4 (A). Current level of stigmatization towards PWUD as rated by participants from the participating countries (except Kazakhstan), (B) Proportion of all 'yes' vs. 'no' responses on being asked whether current stigma would be a cause of concern in near future

In most of the countries, there was a decrease in patient attendance caused by the pandemic, but also in Nigeria and Kenya, an important proportion of the responders (50% from Nigeria and 66.6% from Kenya) mentioned an increase in patient attendance, which reflects an important

contrast in the results and could be attributed to easing of regulations and restrictions in these two countries.

Most of the participating centers do not measure the change in consumption of substances and neither calculate indicators that help them to estimate the current access to treatment centers. The responders did however state that potential ways they could measure changes in consumption in the future would be by qualitative testing during random drug test monitoring, research, several seminars by professionals, multidrug testing kits, exchanges with Police Officers and National Narcotics Board and therapeutic interviews.

Finally, Nigeria and Kenya have a healthcare system in which citizens need to pay out of their pocket for medical treatments, while in the other countries there are more possibilities to access drug use disorder treatment.

4.2 Qualitative Analysis

PAKISTAN

Two expert interviews were conducted with a psychologist and psychiatrist who work in treatment centers in Pakistan, both of them giving very similar points of view about the impact of COVID-19 in their drug treatment centers. They mentioned that at the beginning of the pandemic the situation was very difficult, not only because they did not know how to react and how to maintain the services and the contact and relationship with their clients, but also because many clients claimed COVID-19 did not exist and they did not believe in it until any of the members of their families or they themselves got it.

"[...] And not only we are facing this, but the whole country is facing (it), even what I tell you is that they were saying that COVID does not exist until many members of the families of the patients got COVID-19." (Clinical Psychologist in Drug Rehabilitation Centre - inpatient setting, Pakistan)

Additionally, the COVID-19 testing was quite expensive, they had to enforce measures for their patients like wearing masks, social distancing, and hand washing, and they were forced to train all their staff and learn by experience how to manage this unexpected crisis. Nevertheless, after more than one year of the pandemic, responders were hopeful and commented on how things were improving with more than 20% of the population of Pakistan being vaccinated (at the time of the interview) with more accessibility to the vaccines.

One of the principal findings was the rapid adaptation to the context and how technology can be easily applied in their daily operations. They underlined how technology is an excellent alternative to have video conferences with patients' families, schedule appointments, write messages of assistance through WhatsApp, offer virtual sessions, among others. However, both experts agree that patients with advanced addiction or with other conditions such as depression or mental health problems must be treated through physical sessions as virtual sessions are not as effective. Specifically, they allude to the necessity of establishing personal contact with their patients during their treatment, listening to them carefully, reading their body language, and understanding their

verbal and non-verbal communication. Therefore, clinicians can get more information from them and offer better management of their problems in person.

According to the patients' feedback, human contact is essential during a rehabilitation program and the physical interaction with their clinicians plays a fundamental role in the success of the plan. For that reason, the experts agree a "hybrid system" would be the perfect balance between offering some online services such as training, general interviews, programming appointments, but also other presence services like dispensing of medicines and specific rehabilitation sessions.

In that way, they consider that the hybrid system is going to last in the long term as fewer resources are needed and it is possible to make the treatment accessible to more people, but at the same time some things cannot be done in virtual sessions, so the human relationship cannot be replaced by the use of the technology.

"[...] What I see the hybrid system is really going to last because what I would say less resources are needed and we are accessible to a lot of people and for most of the time it's really easier for clients also [...] there are things which cannot be done in the virtual training or with a virtual interview" (Psychiatrist in Community Outreach Rehabilitation Service, Pakistan)

Moreover, the professionals point out the high level of stigma about people with SUDs in their country, and how COVID-19 has helped in understanding that mental health should be a priority, how it should be integrated with the primary health care system, and how the collaboration between the government, the local authorities, and the different drug treatment centers can help to overcome this period of crisis.

KENYA

The survey was conducted with an expert managing the operations of multiple drug treatment rehabilitation centers in Kenya. The participant mentioned the centers having to struggle for procurement of PPEs, masks, etc. at the beginning of the lockdown. The Kenyan association called National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA) set guidelines to assist centers in the management of sanitation and prevention measures. In addition, the staff members of drug treatment centers were recognized as essential service providers to allow for their mobility during the curfew which otherwise would have disrupted service continuity. Staff were following rotating shifts, and patients for admission had to undergo COVID-19 testing. Some centers were also transformed into isolation centers for people consuming substances who had tested positive for the virus.

According to the interview respondent, there have been some allegations about corruption and mismanagement of funds destined to drug treatment centers, which made it difficult to access basic amenities and services such as delays in obtaining PPEs and masks; accentuating an already grave situation. Centers had to scale down their staff and operations to a minimum to be able to function.

Another point of concern that was raised revolved around the reluctance of health insurance providers to provide for costs associated with substance use disorders and mental health. Most

often, patients were paying out of their own pockets to obtain services and medications. The National Hospital and Insurance Fund provides coverage for just about 7.5% (15 of 200) of the total rehabilitation centers in the country.

"They are privately run and people pay out of pocket. Most insurance companies do not even agree to pay for this. [...] (Chairman of Rehabilitation Centers, Kenya)

In line with new implementations, the participant talked highly of innovations in technology, especially the use of virtual platforms to connect and collaborate with providers across the country. They emphasized the need for experts to train families and communities via teleservices so that treatment could be eased and made accessible for a larger proportion of patients. Family therapy sessions were launched to train family members in dealing with the challenges around drug use disorders.

As a personal aspiration, the participant hoped to train individuals and develop skills to enhance already existing tools to connect better and provide for maximum service delivery.

INDONESIA

The survey was conducted with an expert working as an addiction counselor at a rehabilitation unit in the city of Jakarta. As per the participant's response, there were no working Standard Operating Procedures (SOPs) in place in the initial months of the pandemic. After a collaborative effort between the government, the Narcotics Control Board, and other associated health departments, a list of COVID-19 precaution guidelines was put into place for the admission of patients in rehabilitation centers. However, the center was forced to refuse incoming patients until the formulation and implementation of SOPs, for which took 6 months. For patients to come and seek counseling sessions, the center had mandated testing for COVID-19 and they continue to ask for a negative test result to date.

It was also following maximum prevention measures by referring patients that had tested positive to nearby hospitals and for those who tested negative, by suggesting to self-isolate for two weeks after which active counseling sessions had taken place. Staff too were directed to follow all rules and guidelines including wearing masks at all times.

When asked about the status of mental healthcare in the country, the participant responded by saying that the mental health infrastructure is not very well integrated within the national healthcare system as they felt that mental health care called for a different set of policies due to its nature.

As for the new strategies implemented during the lockdown, virtual services were most preferred, of which, group counseling via online platforms was most popular. The center had adopted a hybrid model of delivering services, however, due to national guidelines in-person and face-to-face sessions had to be put secondary after virtual platform service deliveries. For most patients, laptops had been provided to preside over sessions and they were mostly assisted by staff. To ensure continuous service, staff followed a flexible timetable and rotating shifts.

A major challenge during virtual sessions was poor network connectivity which often did not allow for proper behavioral assessment of the patient, proving a deterrent for long-term application of telemedicine. Additionally, this feeling was echoed by a large number of patients as they felt a need to connect in person to learn better from the therapeutic sessions. They often communicated directly with the counselor to bring up the issue. As a consequence, the idea of telemedicine being continued in the future as the long-term adaptation was not supported.

" Skills like how to manage their emotion(s). If we do it in virtual, it's difficult or it's a (more) challenge because we need more energy, we need more focussing. We need everything to do (to doing) the technique in the virtual. [...] they prefer to have that human contact." (Addiction Counsellor - Inpatient and Outreach services, Indonesia)

As discussed, a positive aspect learned from the pandemic was the increase of hygiene measures like frequent handwashing and the use of masks. However, the lockdown also brought about heavy restrictions in outreach programs which could have increased substance use, as reported. An increase in unemployment as a direct result of the financial crisis led to more consumption and drug-use-associated deaths, which, as finally stated by the participant, would have to be resolved by reverting delivery of services to the way they operated before the start of the pandemic.

THE PHILIPPINES

As per the survey conducted with a doctor, their drug treatment and rehabilitation center implemented a thorough protocol for admissions of patients at the beginning of the pandemic, which included measures such as appointment-based entry, submission of health declaration forms, basic hygiene practices, and screening. In addition, the government-appointed Infection Prevention and Control Committee was tasked with regular monitoring of infection and assessment of health protocols, and the committee continues to function to this date. It facilitated isolation dorms for positively tested patients as well as quarantine rooms for new patients while prioritizing vaccination of staff and patients residing in the facility. The center follows a 12-month program wherein patients are admitted for rehabilitation for a minimum of 6 months followed by 6 months of follow-up after leaving the facility.

While measures to control infection with COVID-19 were stringent and well-organized, they also restricted face-to-face sessions between service providers and patients. Switching to telemedicine seemed to be a challenge due to poor internet connectivity for patients as well as community quarantine imposed constraints on follow-up and outreach programs. According to the feedback received, the complete rehabilitation program was strongly preferred over the use of virtual services for the management of patients as it also allowed for testing of drug consumption. To make up for the shutdown of in-person sessions, patients were contacted and counseling was provided over the phone, however, this transition was not positively viewed as per the response.

"[...] we are encountering some problems because of the internet connectivity of our patients, they usually can't provide those internet connectivity. [...] I think it was clear that patients

preferred the face to face and outreach appointment rather than telemedicine and phone for an appointment given." (Associate Specialist Inpatient Rehabilitation and Outreach services, Philippines)

Since September of 2020, the facility has been taking in patients actively following screening protocols and guidelines, while at the same time having vaccinated the staff fully to ensure the continuation of services. In addition, the staff is trained in coordination with the regional Department of Health which also oversees and monitors the functions of the center. According to the participant, the local government engaged actively in providing amenities for patients as well as supporting maximum health-related costs easing the overall burden.

In closing comments, the participant mentioned that although the health department manages and coordinates the operation of centers quite well, they wish for complete self-sufficiency in terms of having their COVID-19 testing laboratory, additional staff, and management personnel.

5 Discussion

Throughout this pandemic the concerns of mental well-being continue to grow, it has become imperative to strengthen the mental healthcare system, including the drug use disorder treatment so that treatment is available and accessible for all, in line with the Sustainable Development Goal 3 (SDG 3). As study trends have depicted, LMICs struggled to maintain treatment services and service continuity whereas higher-income countries were quick to adopt new and innovative solutions to tackle this challenge. Being under-resourced, substance use disorder treatment centers in LMICs face an additional burden that consequently impacts vulnerable populations.

INDONESIA

As per the responses to the surveys, a large portion of service providers in Indonesia are affiliated with public bodies or not-for-profit organizations. The Indonesian government allocates about 1% of its total health budget to the mental health sector. At the time of the survey (June 2020), Indonesia had introduced social restrictions; however, a strict lockdown was not in place. Despite the government not imposing an absolute curb in mobility, many treatment centers reported a drop in outreach activities and community-based support services to afflicted patients (data not shown). Both services seem to have increased in the current year by about 5% and 30% increase in outreach and therapeutic community services respectively, as per responders who participated in the second survey conducted in September 2021.

About 70% responded having switched to online services such as telemedicine indicating that the digital adaptation was swift and working well which doesn't seem to have changed much in the course of one year, the period in which both surveys were carried out.

Interestingly, 45% of the responders reported an increase in the consumption of both alcohol and cannabis at the beginning of the pandemic, which could have been a consequence of higher availability of drugs due to drug trafficking in the region as the country also happens to be the

largest drug destination in the Asian continent. Data for other substances did not yield much information about the consumption patterns. Monitoring access to different medications for symptomatic treatment as well as withdrawal management is critical to prevent substance use-associated health complications. This would also help with multi-level coordination of different stakeholders within the mental health infrastructure which could be lacking as indicated by the responses, most of which were uninformed of the status of availability of prescription medicine.

KAZAKHSTAN

In Kazakhstan, neuropsychiatric disorders are estimated to contribute to 12.4% of the global burden of disease (WHO, 2008). As per the data, substance use disorder treatment centers are largely affiliated with the government, with 50% of treatment centers offering primary mental healthcare services. The centers reported an overwhelming increase in the use of online platforms for the delivery of treatment services indicating successful integration of the same with routine practices. The government was quick to impose strict lockdown measures and introduce regulations to control the spread of the contagion. This, in turn, could have resulted in the deployment of treatment center staff to help in COVID-19 management, as all centers reported their staff have received professional training to help with the outbreak.

As per the survey of June 2020, Kazakhstan was the highest rated in terms of availability and access to treatment centers, with a score of 8.3 on a scale of 1 to 10 in the year 2020. It is one of the few countries in Central Asia which benefits directly from initiatives such as the Central Asian Drug Action Programme (CADAP) and the Mental Health Gap Action Program (mhGAP) that function within the frameworks of the EMCDDA and WHO respectively. However, a large number of responses regarding access to medications during the pandemic remained uncertain with all centers reporting that they had no information about access to the drug buprenorphine. As for the consumption trends, centers reported a decrease in cannabis and opiates which could have been a direct result of unavailability and decreased trafficking due to lockdown measures.

KENYA

At the beginning of the COVID-19 pandemic in Kenya, the Division of Mental Health at the Ministry of Health (MoH) prepared a guide for psychological support and resources. Despite these guidelines, the country still faces major challenges in terms of mental health care support and accessibility as the psychologist to population ratio is 1:4,600,000 (Jaguga & Kwobah, 2020). Following this, healthcare workers are equipped with basic psychological support training via virtual platforms, and the MoH has partnered with a local mobile service provider to provide accurate information on COVID-19 to the general public via a 24-hour call center. It is clear that in Kenya, the delivery of mental health services through telemedicine during the current pandemic could potentially overcome the challenges of the limited access to infrastructures as the

country has globally the highest share of internet usage from mobile phones as compared to desktops with 91% penetration of mobile subscriptions (Jaguga & Kwobah, 2020).

Kenya was the only country to report centers not being affiliated to public or government organizations, rather affiliations belonged mostly to private bodies and NGOs. Residential drug treatment services, both hospital, and non-hospital seemed to be quite common followed by specialized outpatient treatment services. The majority reported a lockdown, having no access to PPE and COVID-19 testing overall, and a decrease in almost all treatment interventions except for telemedicine. According to WHO reports, the allocation of funds to mental healthcare in Kenya is highly disproportionate to general healthcare, only about 0.01% of the total health budget. In addition, centers rated the access to treatment services a mere 3.7 out of 10, the lowest amongst all assessed, pointing towards the gravity of the situation in the region. The rating has slightly increased to 5 as per the survey in 2021, however, considering that few respondents participated in the second survey as opposed to the first, the urgency remains unchanged. The average consumption of alcohol, cannabis, opiates, and opioids was reported to have increased during the pandemic. Few centers reported a significant decrease in access to treatment medications whereas a large proportion remained uncertain.

NIGERIA

In Nigeria, the fear of contagion has led hospitals and clinics to drastically limit their access, prioritizing emergency services only contributing to increasing the level of inequalities and inadequacies in the countries particularly the rural areas where ab initio healthcare provisions are precarious (Baiyewu, Elugbadebo & Oshodi, 2020).

Online services such as telemedicine have emerged as an alternative approach and standard operating guidelines have been issued in Europe and USA. (European Monitoring Centre for Drugs and Drug Addiction, 2020b & Substance Abuse and Mental Health Services Administration, 2020) to aid in the continuity in treatment and health service delivery for PWUD during the COVID-19 pandemic (Nelson, Dumbili & Odeigah, 2021). The outcome of a nationwide study conducted in 2017 showed that cannabis (14.4%) is the most commonly used illicit drug in Nigeria followed by opioids (4.7%) and codeine-based cough syrup (2.4%) (United Nations Office on Drugs and Crime, 2018). After a study among PWUDs in northern Nigeria who experienced a loss of control in their addiction, it appeared that many faced challenges when dealing with change, not being able to recognize the right steps to take for treatment and/or rehabilitation (Abiola et al., 2015). A study involving women who use drugs (WWUD) shows that the financial cost, stigma and taboos, fear of police arrest, and lack of partner support are barriers to the utilization of services, whether the lack of awareness and/or insufficient information regarding drug treatment facilities can be considered obstacles to accessibility to the adequate services (Baiyewu, Elugbadebo & Oshodi, 2020).

More than 75% of the centers from Nigeria reported being affiliated to government or public organizations, and the majority offered primary and mental healthcare services. With a lockdown imposed, centers reported scarcity of PPE which could have had a direct impact on patient

attendance and delivery of services by staff. Availability and access to treatment services were rated a modest 6.4. Alcohol and cannabis consumption seemed to have increased whereas the data for others remained ambiguous. Access to medications, similar to the other questions, was inconclusive.

PAKISTAN

In 2013, around 6.7 million people were regular users of drugs such as cannabis, heroin, and opium, and 63% of them were considered to have a drug use disorder (UNODC, 2013). In addition to these alarming numbers, center services of rehabilitation are not considered sufficient and some treatment facilities are inadequate, including patients having to stay in small spaces, without sunlight, fresh air, and lack of cleanliness to name a few (Aslam,2020). However, despite the inadequacy of resources, some centers still show room for improvement.

With the COVID-19 pandemic, this situation is getting worse, the available treatment services are severely affected, some of them have been bound to close, reduce their services or discharge the patients prematurely. Moreover, general hygiene and social distancing are difficult within the centers, and indoor patients are at high risk of infection.

Therefore, there are many challenges for public and private drug treatment and rehabilitation facilities and at the government level who should find the resources to guarantee the availability of treatment services, but also setting minimum criteria to operate with optimal conditions for the patients in line with evidence-based and human rights principles.

THE PHILIPPINES

Online communities played a crucial part in the Philippines' public health during the COVID-19 pandemic as people from various sectors had the capacity to collaborate and promote the common good, specifically in the area of public health (Codero, 2021). Research shows that during the early phase of the pandemic, one-fourth of participants reported moderate-to-severe anxiety and one-sixth reported moderate-to-severe depression and psychological impact (Tee et al., 2020).

Philippine centers, as indicated, were run by both public and private organizations being the only country to offer all types of treatment services- mostly consisting of community-based therapy, although improvements within this social model need to be addressed. The majority of the respondents (27 out of 47) agreed on the issue of non-availability of COVID-19 testing which could easily have hindered patients' access to basic services in order to control the infection spread. Interestingly, the Philippines was the only country to report a decrease in alcohol consumption which could have been due to stringent measures of closure of shops and markets. Data for consumption of other substances as well as access to medications remained undefined to draw conclusive evidence.

6 Conclusions

While an initial disruption or discontinuity in services as a result of lockdown is expected, the pandemic has accelerated and uncovered challenges, the identification of which under normal circumstances would have consumed more time and resources. Results suggest that there are some notable positive effects derived from the COVID-19 pandemic such as the rise in the use of technology, the increasing awareness of mental health issues, the learning of new skills, the generation of more research, among others (see Appendix 4 with the complete list of positive and negative effects). Certain trends that were commonly observed in participating centers across all countries include insufficient data for monitoring substance consumption or change of patterns as well as inadequate information on access to medications.

An important finding in the survey conducted was the unequivocal increase in stigmatization towards PWUDs. This could have a direct impact at a community level for patients in the near future, as they can be at a higher risk of being ostracized by society, which in turn could increase cases of mental health disorders, relapse, and vulnerability to other social and health challenges. Societal stigma also poses a hurdle for mental healthcare professionals and staff by expanding the already existing gap between community involvement and medical interventions for patients within the spectrum of substance use disorders. Thus, a quick action plan to train staff and actively engage members of the community is essential to raise awareness and tackle this challenge.

Kenya and Nigeria, being the least affected countries based on the answers provided by participating treatment centers, have now begun to move back to full normalcy. This indicates that policies to recuperate from post- COVID-19 crises that include both relapse and unemployment for PWUDs should be prioritized in these two countries, for which work is ongoing in these regions. Some measures that need higher consideration involve improving the infrastructure of ease-of-access platforms such as virtual services to better deal with an increase in patient cases, maximizing treatment for all. In addition, governments need to plan the efficient provision of housing and other basic services for the most vulnerable populations that find themselves without any form of employment as a consequence of the global economic collapse; and this, in turn, could reduce the risk of developing mental health disorders as a result of homelessness.

Moreover, data about insurance providers clearly indicates that governments have to build a solid budget to allocate towards the mental health system, allowing free coverage for all vulnerable communities. Paying out of their own pockets can be a huge deterrent for patients not to pursue any form of therapy or counseling. Increased funds and government support could help in reducing severe consequences associated with substance use and substance use disorders by encouraging and promoting patients to seek the medical help they need.

Following a critical appraisal of the research process, it is imperative to acknowledge the study's limitations and interpretation of their impact. This study has a strong regional focus as the references made about low and middle-income countries are bound to the states participating in the completion of the surveys administered before and after the pandemic period of 2020, and to

those participating in the expert's interviews. In addition to this, it is relevant to consider that the research is population-specific, aiming to gather data from mental health and substance misuse treatment services only. Moreover, the facilities and services included in the data may not comprise the countries' overall figures and trends, however, they provide useful statistics and specifics relevant to the hypotheses and purpose of the research. Different from other research methodologies, social sciences rely on participants who are capable of attributing meaning to their environment. "Face-to-face interaction is the fullest condition of participating in the mind of another human being, and . . . you must participate in the mind of another human being (in sociological terms, "take the role of the other") to acquire social knowledge" (Bryman, p. 339 2012).

The differences in the outcome of a qualitative analysis differentiate based on the subjectivity, personal experiences, and biases of the interviewees which, although may appear to limit the external validity, provides generalization to the theories rather than to the population. Mental health professionals working in inpatient and rehabilitation settings provided different feedback in regards to the implementation of new adapted services compared to the ones working in outpatient and community services where clients were not cared for in a hospital facility. The participant sample, even if small-scale, reflects one of the initial hypotheses of this research, and future studies should aim to replicate results on a larger scale to strengthen the external reliability.

7 Policy Recommendations

Based on the literature review, as well as the results obtained from the quantitative and qualitative analysis carried out in this research, a series of recommendations are described below, which may be of great interest to UNODC, to other organs, and stakeholders focused on the prevention and management of drug use disorder treatment service.

- Technology transfer

Even if an increased technology transfer is taking place worldwide in response to pandemic COVID-19, in the mental health context, it is necessary to build robust systems and networks that connect the new inventions and actions made by some centers, especially from high-income countries to low and middle-income countries, to manage this unexpected situation.

Specifically, some tech-transfer initiatives between mental health and addiction centers could be associated with sharing their research findings, explaining new techniques to train clinical staff, exchanging strategies implemented to continue providing drug treatment services, and demonstrating innovations made in accessing medications and treatment to replicate them in other centers.

There is a need to promote the broad distribution of good practices and health solutions implemented in some drug treatment centers and encourage them and their staff to transfer skills, knowledge, and the plans of action adopted to guarantee the availability of addiction treatments.

- Employment opportunities

Numerous programs aimed at improving the quality of life for PWUDs have found their way into routine practice at individual treatment centers, with trained staff providing services that include support services for employment generation. However chronic unemployment poses a huge obstacle for substance users, especially individuals with high-intensity drug use. The focus on viable income support for drug users has been of a large secondary nature, with limited scientific data available for the same. On top of it, the economic pitfalls brought along by the pandemic have countries across the globe struggling to provide financial assistance to people who have lost their jobs. Needless to say, this impact has amplified in vulnerable populations.

Indicators suggest that there is an absolute need to create income generation opportunities through the provision of alternative income sources and low-threshold programs. As employment and health go hand in hand, incentivizing and promoting viable job opportunities can have a direct effect on illicit drug use and quality of life.

- Online infrastructure

The pandemic has demonstrated the crucial role of digital connectivity and, in that sense, the need for actions oriented to create an optimal digital infrastructure to ensure the continuity of access to drug treatments in times of crisis.

Although physical contact and presence are indeed essential to treat the most severe cases of mental health conditions and drug addictions, it is also possible to have different virtual treatments to handle certain milder situations which could be delivered through online techniques. It is necessary to promote investments in technology, guarantee internet access for all patients, as well as the possibility of accessing treatments through devices such as mobiles, computers, or tablets. Furthermore, establishing a safe practice in which consent, confidentiality, data security, and risk and safety procedures are ensured for clients and professionals remains a fundamental aspect for good practice and treatment success.

- Housing and Government support

Homelessness is both a cause and consequence of substance abuse, with social isolation magnifying the risk of developing mental health disorders. Many addiction recovery programs provide short-term housing solutions, however, a permanent resolution is needed to reduce the increasing incidence of homelessness- both in developed and developing countries. In addition, the social stigma that appears to be on the rise can lead to discrimination against and eviction of this marginalized population. Active government support in the form of housing funds and

subsidies, and community integration is urgently needed to help people in need, and thus prevent as best as possible the growing displacement of PWUDs.

- Insurance coverage

The unexpected arrival of the pandemic has increased awareness about the importance of taking care of people's mental health. However, it has been shown that these types of conditions are not always covered by health insurance and that, especially in low and middle-income countries, coverage is very limited. Therefore, it is necessary to propose actions aimed at obtaining funds to finance access to treatments and support for both physical and mental health.

The health insurance plans should be required to cover mental health and substance use disorder services, which means that insurance firms might make provision of the costs of treatment of mental illness understanding the essential health benefit of that.

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Appendix

Appendix 1. Second questionnaire

Part 1. General Information

1. Contact details for survey correspondence. Please use the same email provided in the previous questionnaire.

Email address *
Name of respondent
Job/Role
Contact number for the treatment facility (eg +1 234 678 789)
Full name and address of the treatment facility
Date of completion of the questionnaire
Website address of the treatment facility
Country where the treatment facility is located

2. Currently, after more than one year of the COVID-19 pandemic, in what settings are you providing services? Select all those that apply:

- Inpatient treatment
- Outpatient treatment
- Residential Treatment
- Therapeutic community
- Outreach services
- Drop-In services
- Self-help groups
- Online counseling services
- Other, please specify:

3. Currently, after more than one year of the COVID-19 pandemic, what types of interventions are you providing? Select all those that apply

- Outreach interventions
- Screening and brief interventions
- Basic health services including first aid, wound management
- Housing/shelter support
- Detoxification/ withdrawal management
- Psychosocial interventions
- Medication-assisted treatment
- Recovery management
- Other specialized health care services/referral for comorbid conditions
- Family support
- Self-help groups
- Educational/vocational training
- Employment/income generation support
- Life skills training
- Recreational services
- Spiritual support
- Other, please specify:

Part 2. Context

4. What was the lockdown situation for the country in March and April of 2020?

- Strict lockdown (National and localized lockdown)
- Flexible lockdown (still some social restrictions but the possibility of moving freely) (National and localized recommendations)
- No lockdown

5. What is the current lockdown situation in the country?

- Strict lockdown (National and localized lockdown)
- Flexible lockdown (still some social restrictions but the possibility of moving freely) (National and localized recommendations)
- No lockdown

6. What is the current vaccination status of the staff of this treatment service provider?

- Less than 10% vaccinated
- 10%-30%
- 30-50%
- 50-70%
- More than 70% vaccinated
- Not sure

7. What is the current vaccination status of the patients of this treatment service provider?

- Less than 10% vaccinated
- 10%-30%
- 30-50%
- 50-70%
- More than 70% vaccinated
- Not sure

8. If the rate of the previous question is less than 30%, why do you consider the vaccination rates as low?

- Limited access to vaccines
- Social beliefs
- Lack of information about how to access vaccines
- Other, please specify:

9. What is the current availability of Personal Protective Equipment (PPE) for response to coronavirus disease?

- Better than one year ago (during the pandemic crises)
- Same as one year ago (during the pandemic crises)
- Worst than one year ago (during the pandemic crises)

Part 3. Availability and access to treatment services

10. Rate the current availability and adequate access to substance use treatment services after one year of COVID-19, on a scale from 1 to 10, where 1 stands for least available and accessible, and 10 for greatest available and accessible services.

11. What are the current limitations in accessing drug treatment services? Select all those that apply

- Access to internet/telemedicine
- Limited staff/reduced capacity
- Lower levels of medicine distribution
- Medical centers under-equipped
- Over demand
- PPE not enough
- Treatment service provider is closed
- Sociocultural factors (e.g. stigma in accessing care)
- Other, please specify:

12. Which of the following strategies/adaptations have you implemented during the COVID-19 pandemic?

- Telemedicine
- Supporting patient contact with family members through videoconferences
- Virtual services (e.g. built a virtual triage system, have a virtual appointment with a specialist)
- Staff training
- New platforms to schedule appointments
- Takeaway drug doses (doses provided by the dosing point for later consumption)
- Mobile units
- Other, please specify:

13. If adaptations were made in 2020 and early 2021, are they still used at present?

Yes/No

- Telemedicine
- Supporting patient contact with family members through videoconferences
- Virtual services (e.g. built a virtual triage system, have a virtual appointment with a specialist)
- Staff training
- New platforms to schedule appointments
- Takeaway drug doses (doses provided by the dosing point for later consumption)

14. Do you believe the aforementioned changes will become permanent?

Permanent/only during COVID-19 pandemic

- Telemedicine
- Supporting patient contact with family members through videoconferences

- Virtual services (triage)
- Staff training
- New platforms to schedule appointments
- Takeaway drug doses

15. Did you perceive a change inpatient service attendance?

→ Yes
→ No

16. a. Do you offer methadone treatment services?

→ Yes
→ No

b. If your answer was 'yes', has attendance in methadone clinics been affected during COVID?

→ Yes
→ No

Part 4. Additional information for further research

17. Have you measured the change in consumption of substances (including but not limited to EtOH, Alcohol, Cannabis, Opiates, Amphetamine type stimulants, Cocaine, Sedative, and hypnotics) substance use during the COVID-19 pandemic?

- Yes
- No

If your answer to the previous question was "yes", how have these changes been measured (surveys, data analysis, etc)? If your answer to the previous question was "no", how do you determine if there has been a change in consumption of psychoactive substance use?

18. Do you calculate indicators that help to estimate the current access to medications for the treatment of drug use disorders?

- Yes
- No

If your answer to the previous question was "yes", what are the indicators that were used to estimate the current access to medications for the treatment of drug use disorders? If your answer to the previous question was "no", how do you determine the current access to medications for the treatment of drug use disorders?

19. Which of the following best describes the healthcare model in the country you are based?

- Health care is provided to all and financed by the government through tax payments.
- Use an insurance system — the insurers are called "sickness funds" — usually financed jointly by employers and employees through payroll deduction.
- Use private-sector providers, but payment comes from a government-run insurance program that every citizen pays into.

- Countries that have not developed a healthcare system where citizens need to pay out of their pockets for medical treatments.

20. How many patients have access to medical/health insurance covering substance use treatment services? On a scale from 1 to 10, where 1 stands for nobody has access, and 10 for everyone has access.

21. Have you perceived any changes in patients' employment status?

- Severe decline
- Slight decline
- No change
- Slight improvement
- Drastic improvement

22. a. On a scale of 1-10, how would you rate the current level of stigmatization towards PWUD? 1 being the least and 10 being the worst.

b. Is stigma surrounding substance use a cause of concern for your patient populations in a post-pandemic context?

- Yes
- No
- Don't know

23. Does your facility provide harm-reduction services?

- Yes
- No

If your answer to the previous question was "yes", can you please specify exactly what services are included.

24. What fraction of patients present with co-morbidities (HIV, hepatitis C, etc.)?

- Greater than 75%
- Between 50% - 75%
- Between 25% - 50%
- Less than 25%
- Less than 5%

25. What fraction of patients present mental health comorbidities (depression, bipolar, schizophrenia, etc?)

- Greater than 75%
- Between 50% - 75%
- Between 25% - 50%
- Less than 25%
- Less than 5%

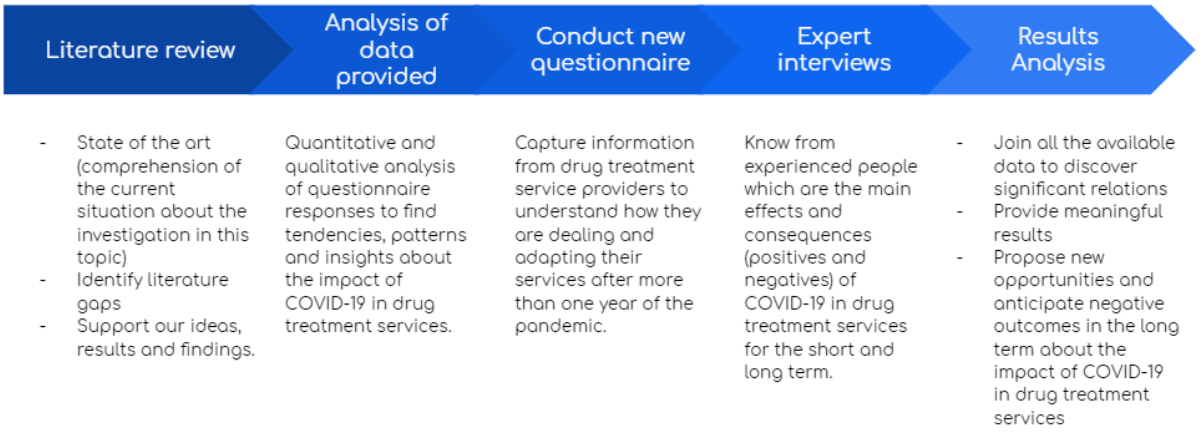
How are these patients managed?

- Collaborative care service
- Shared care service
- Consultation-liaison services

Appendix 2. Expert Interviews/ Heads of treatment service providers

1. What is the mode of operation during COVID-19, protocol followed once a patient registers/enters the facility, and what is the follow-up procedure? (mhGAP protocol set by WHO?)
2. How well integrated is mental healthcare with other systems? (criminal, enforcement agencies, pharmacological, primary health care, policymakers (WHO, Ministries of Health) donors, academy)
3. In short, phrases describe ideas of best practices (procedures you consider have been effective) that you have adopted during this year of the COVID-19 pandemic.
4. What are the pitfalls of new adaptations (challenges to telemedicine, limitations of non-prescription doses, etc.) - from the perspective of both provider and patient.
5. Level of satisfaction of staff to new treatment adaptations? What do they think of telemedicine? Is it easier to work digitally than to provide outreach services?
6. Have they collected patients' feedback at all during this year? Can you provide any type of anonymized feedback report from your patients?
7. What is their perception of the changes put in place from a patient perspective? Both the ones implemented (i.e. telemedicine) and the one removed (i.e drop-in sessions, outreach).
8. How did COVID 19 change the healthcare system in your country? Are there any positives you can take from the pandemic crisis as a healthcare professional?
9. After a year into the pandemic, what are your expectations/aspirations going into the future (short and long term), from the mental healthcare system/infrastructure as a provider?

Appendix 3. Research methodology



Appendix 4. List of positive and negative effects derived from pandemic COVID-19

Positive effects:

- Sense of cooperation/collaboration, extend help, better equipped to offer support
- Use of technology, optimize resources, digital platforms
- Learn new skills, more research, and knowledge
- Increased awareness of mental health issues
- Treatments more widely and accessible
- More proactive role in assisting those struggling with emotional and mental health issues
- Additional investment in health
- Creation of jobs for social and health care
- Increase availability of data
- Reform mental health policies
- Hybrid system between virtual and in presence services
- Enhance and expand awareness of social funds

Negative effects
- Exacerbate economic and social inequality
- More difficult to restart
- Increase in drug use and drug use disorders or mental problems, higher demand (more people to take care of)
- Emotional-repair strategies (substance use)
- Difficulties in the rehabilitation sessions that need physical contact