

Original Article

Consequences of COVID-19 on access and delivery of mental health care in two rural Ethiopian districts. A mixed method study

Wubalem Fekadu^{1,2}, Seble Shewangizaw², Eshetu Girma³ Abebaw Fekadu,^{2,4,5}Charlotte Hanlon^{2,4,6}

¹Bahir Dar University, College of Medicine and Health Sciences, Psychiatry Department, Bahir Dar, Ethiopia.

²Addis Ababa University, WHO collaborating center for Mental Health research and capacity building, Department of Psychiatry, College of Health sciences, Addis Ababa, Ethiopia

³Addis Ababa University, College of Health Sciences, School of Public Health, Addis Ababa, Ethiopia.

⁴Addis Ababa University, Centre for Innovative Drug Development and Therapeutic Trials for Africa (CDT- Africa), Addis Ababa, Ethiopia.

⁵Brighton and Sussex Medical School, Global Health and Infection Department, Brighton, UK

⁶King's College London, Institute of Psychiatry, Psychology and Neuroscience, Centre for Global Mental Health, London, UK

Corresponding author*: abebaw.fekadu@aau.edu.et

Abstract

Introduction: The impact of COVID-19 on people with Severe Mental Health Conditions (SMHCs) has been neglected. We aimed to describe the effect and explore the consequences of COVID-19 on people with SMHCs and mental health services in rural districts of Ethiopia.

Methods: We conducted a mixed-method study nested within well-characterized population cohorts in Butajira and Sodo districts. We sampled 336 people (168 people with SMHCs, 168 comparisons) in a cross-sectional survey. We conducted qualitative key informant interviews with psychiatric nurses (n=3), primary health care workers (n=3), service users (n=4), family members (n=6) and community members (n=2). We assessed wellbeing (WHO wellbeing index), social support (Oslo social support scale; OSS) and food security quantitatively and used thematic analysis to explore impacts.

Results: People with SMHCs reported significantly lower wellbeing (WHO wellbeing score 52 vs. 72; $p < 0.001$), less social support (OSS score 8.68 vs. 9.29; $p < 0.001$), worse living standards (47.0% vs. 29.0%; $p < 0.001$) and increased food insecurity (26.0% vs. 12.5%; $p < 0.001$). Household economic status worsened for over one-third of participants.

Participants reported increased relapse, exacerbated stigma due to perceived susceptibility of people with SMHCs to COVID-19, and increased restraint. In mental healthcare settings, there was decreased patient flow but an increase in new cases. Innovations included flexible dispensing of medicines, longer appointment intervals and establishing new treatment centers.

Conclusions: COVID-19 had negative consequences on people with SMHCs and mental health services, which must be anticipated and prevented in any future humanitarian crisis. Adaptive responses used during COVID may increase health system resilience.

Keywords: COVID-19, Severe Mental Health Conditions, consequences, Low Income Country, Rural

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Introduction

Coronavirus Disease 2019 (COVID-19) has caused major global economic, social, and psychological challenges in addition to the physical health effects of the disease (1, 2). These impacts are likely to be worse for vulnerable populations, including people with severe mental health conditions (SMHCs : enduring and disabling psychotic disorders, bipolar disorder, and major depression) (3-5).

People with SMHCs and their families are already at increased risk of poor living standards (6-9), premature mortality (10), exclusion from the community, homelessness (11), and human rights abuses (12). These health and social inequalities mean that people with SMHCs, and their families, might be at an elevated risk of adverse outcomes due to the COVID-19 pandemic (13).

The pandemic may also affect mental health care and worsen the treatment gap for people with SMHCs, affecting both first contact and follow-up care, and potentially increasing the risk of relapse (5, 14). Ignorance of the differential impact of the pandemic on people with SMHCs will not only hinder any aims to prevent further spread of COVID-19 but will also exacerbate existing health inequalities (15). The current study sought to describe the effect and explore the consequences of COVID-19 on people with SMHCs in well-characterized cohorts in rural districts in Ethiopia.

Methods

Study design and setting

This mixed method study (comparative cross-sectional and descriptive qualitative study) was nested within the existing Butajira and Sodo population-based cohorts of people with SMHCs. The Butajira cohort was established between 1998-2001 from a screened population of 68,368 with confirmed diagnosis using standardized, semi-structured clinician interviews. A total of 919 people with SMHCs were identified at baseline (16, 17). The cohort was under follow up for over 10 years and was the basis for a nested trial of task-shared mental health care (18), as well as a study of intergenerational impact of SMHCs (8).

The Sodo study on SMHCs was established by the PRogramme for Improving Mental health care (PRIME) project (19). In the PRIME study, people with probable SMHCs were identified by community-based health extension workers, community leaders and project outreach workers who had received half a day of training on common presentations of SMHCs for the setting. A total of 300 people with clinician-confirmed psychosis were included at baseline (20, 21) and followed up over 12 months (22).

Specialist mental health care is available in both districts (psychiatric nurse-led clinics in Butajira and Buei hospitals). Mental health care has also been integrated into primary health care centers in Sodo and Butajira districts (18, 20), with over 250 health center-based clinicians trained in the World Health Organization's mental health Gap Action Programme (mhGAP) (23), which aligns with the National Mental Health Strategy of the Ministry of Health Ethiopia (24).

Study timing

The study was conducted from October to November 2020. At that time, the nationwide state of emergency, declared due to the pandemic, was lifted.

Participants

For the quantitative study, we selected 336 participants from the two cohorts (168 people with SMHCs and 168 matched (sex and age (± 5 years)) comparisons). For the qualitative study, we purposively selected people with SMHCs and their caregivers, community members, psychiatric nurses and primary health care (PHC) workers who had been involved in task-shared mental health care. The recruitment stopped when saturation was reached.

Data collection

For the quantitative study, we collected data on socio-demographic information, wellbeing, social support, living standards, and food insecurity. We used the WHO well-being index to assess wellbeing. This Index consists of five items with six possible responses where a higher score indicated better wellbeing (25, 26).

Social support was measured using the Oslo Social Support Scale (OSSS-3). The OSSS is a three item instrument which has been used previously in this setting (27). Food insecurity (before and after COVID-19) was assessed based on an item used in the C-MaMiE cohort study (28). We also asked the participants to rate their living condition relative to their neighbors.

For the qualitative study, we developed an interview guide to explore participants' perceptions regarding the potential impact of COVID-19 on people with SMHCs, how mental health services are being, and could be, adapted, the unmet needs of people with SMHCs due to COVID-19 and how these could be addressed.

Data analysis

We conducted McNemar's test and paired t-tests to assess the association between the exposure and the outcome variables. We also applied descriptive statistics (frequency, percentages, mean, median, standard deviations, and interquartile ranges) using STATA-17

In the qualitative study, all interviews were audiotaped. The data were analyzed thematically (29) using OpenCode 4.03 software (30) in parallel with data collection. Constant comparison with the emerging data was carried out (31, 32).

After repeated listening to the audio files and reading the transcripts, WF developed initial codes by carrying out open coding on two transcripts. This initial framework was discussed with SS, CH and EG in order to assess relevance and appropriateness of codes and to refine definitions and descriptions. Coding of the remaining transcripts was done based on the agreed codes, with new emerging codes identified and added. After examining the links between the initial codes, subthemes were developed. The themes were defined and named after the subthemes had been reviewed for patterns and relationships. Illustrative quotes (33) were selected for each theme or subtheme.

Ethical considerations

We obtained ethical approval from the Institutional Review Board of the College of Health Sciences, Addis Ababa University (072/20/CDT). We provide detailed information for the participants before receiving consent.

Results

Participant characteristics (Quantitative study)

The mean age of study participants was 43.0 years (± 12.9). A higher percentage of participants in the comparison households (83.9%) were currently married compared to participants with SMHCs (54.2%). Nearly two-thirds (64.0%) of participants were farmers (Table 1).

Table 1: Participant's sociodemographic characteristics

Variable	Responses	People with SMHCs	Comparison	P-value
Age (years)	Median (IQR)	41.5 (35, 50.5)	42 (34,50)	---
Current marital status	Currently married	91 (54.2%)	141 (83.9%)	P<0.001
	Currently not married	77 (45.8%)	27 (16.1%)	
	Cannot read and write	82 (48.8%)	66 (39.2%)	
Level of education	Informal education	20 (11.9%)	20 (11.9%)	0.19
	Formal education	66 (39.3%)	81 (48.5%)	
Years of education	Median (IQR)	6 (4,8)	7 (4,10)	0.32
Living place	Rural	124 (73.8%)	124 (73.8%)	
	Urban	44 (26.2%)	44 (26.2%)	

Economic status and COVID-19 impact

Lower self-rated standard of living compared to others in the neighborhood was reported by a higher percentage of households of people with SMHCs (47.0%) compared to comparison households (29.0%). Similarly, 26.0% of households of people with SMHCs reported hunger because of lack of

money/food but only 12.5% of comparison households. The household economic situation was reported to have worsened after the pandemic in about one-third of households (39.0% in SMHCs vs. 33.3% in comparison households). A total of 22 people (12 in SMHCs and 10 in comparison households) had lost their job due to the pandemic

Wellbeing

The median wellbeing index score was higher in comparison households (72 (IQR; 56, 88)) compared to SMHCs households (52 (IQR; 44, 64)) ($p < 0.001$). The same was true for social support, with higher mean

OSSS score (reflecting better social support) in the comparison households (9.29 (± 2.18)) compared to SMHCs households (8.68 (± 1.93)) ($P < 0.001$) (Table 2).

Table 2: Comparison of WHO wellbeing index

Question	Responses	SMHCs (%)	Comparison (%)
I have felt cheerful and in good spirits	None of the time	19 (11.3)	1 (0.6)
	Some of the time	68 (40.5)	27 (16.1)
	Less than half of the time	45 (26.8)	42 (25.0)
	More than half of the time	22 (13.1)	59 (35.1)
	Most of the time	14 (8.3)	39 (23.2)
	All of time	-	-
I have felt calm and relaxed	None of the time	16 (9.5)	3 (1.8)
	Some of the time	72 (42.9)	28 (16.7)
	Less than half of the time	40 (23.8)	41 (24.4)
	More than half of the time	27 (16.1)	56 (33.3)
	Most of the time	13 (7.7)	39 (23.2)
	All of time	-	1 (0.6)
I have felt active and vigorous	None of the time	17 (10.1)	1 (0.6)
	Some of the time	67 (39.9)	39 (23.2)
	Less than half of the time	45 (26.8)	38 (22.6)
	More than half of the time	26 (15.5)	52 (31.0)
	Most of the time	13 (7.7)	37 (22.0)
	All of time	-	1 (0.6)
I woke up feeling fresh and rested	None of the time	20 (11.9)	-
	Some of the time	62 (36.9)	38 (22.6)
	Less than half of the time	44 (26.2)	43 (25.6)
	More than half of the time	23 (13.7)	50 (29.8)
	Most of the time	19 (11.3)	37 (22.0)
	All of time	-	-
My daily life has been filled with things that interest me	None of the time	23 (13.7)	-
	Some of the time	72 (42.9)	37 (22.0)
	Less than half of the time	52 (31.0)	40 (23.8)
	More than half of the time	18 (10.7)	64 (38.1)
	Most of the time	3 (1.8)	27 (16.1)
	All of time	-	-
Composite score	Median (IQR)	52 (44, 64)	72 (56, 88)

Mental health care

In people with SMHCs, 45.0% had experienced relapse after the corona virus pandemic hit Ethiopia. Of these, 48.0% did not seek any help, 27.7% visited a health facility, 16.0% visited holy water, and 9.3% purchased medicines from the local pharmacy outlet. Of those on psychotropic medication, 15.0% reported stopping their

medicines due to the pandemic. A total of nine (5.4%) people with SMHCs reported being restrained in the preceding month, reportedly due to unmanageable symptoms for most ($n=8$), but due to fear of contracting coronavirus infection for one individual.

In the qualitative study, we interviewed psychiatric nurses (n=3), mhGAP trained primary health care workers (n=3), service users (n=4) and their family members (n=6) and community members (n=2). Four themes emerged from the data: reactions, consequences, coping mechanisms and lessons learned.

Reactions

The initial reaction of most respondents was to feel very stressed, due to insufficient information and difficulties with understanding what was being said in the news. They reported getting information about COVID-19 mostly from the media, from television or radio.

Health care professionals reported getting ready for COVID-19 by preparing soap and water for hand-washing and wearing masks. However, they reported that these practices did not last long, and people quickly became inattentive.

“There is some carelessness among the community and among professionals, for example how to do mask properly and hand washing ...people were getting distracted on these things. Before we used to wash our hands before coming to the hospital but not anymore the patients also looked up to us and say if they are not doing it, we are also not doing it” [IDI_06_PHC worker]

Caregivers and health care professionals both reported that people with SMHCs were more susceptible to COVID-19; because it was perceived to be very hard to tell them or direct them not to go out of their house since they always wanted to go out. They also reported that people with SMHCs may not have the financial resources to buy protective equipment.

“... As I told you before there was a command post which prohibited people from leaving their house and due to the illness manifestations, it is difficult to control them [people with SMHCs]. If it is an acute case, they [caregivers] could not control them so they would tie them up and make them stay home” [IDI_01_Psychiatric nurse]

Health care providers reported feeling more vulnerable to COVID-19, especially when they tried to help a person with SMHCs. They reported that people with SMHCs may not be able to comprehend and keep to the recommended physical distance. They also tried to greet them in the usual fashion.

Consequences

Family members of people with SMHCs reported the impact of the illness on their daily living. During the initial periods and the national precautionary measures, people were unable to go to the marketplace or carry out their daily work, which was the main source of income for many. Many also couldn't afford the mandatory masks.

“My mother [wife of the person with SMHCs] is a trader. She is the one who buy things for our family. When the illness [COVID-19] came, she could not go to the market. It was very difficult.” [IDI_07_Caregiver]

COVID-19 introduced a new type of stigma and discrimination in the community, especially directed towards people with a cough and people who came from urban areas. Stigma and discrimination against people with SMHCs was reported to have been heightened after COVID-19. People distanced from people with SMHCs because they were afraid of contracting the virus and perceived that people with SMHCs might not wear a mask or might spend time out of their house.

“I have seen people shouting at a person with SMHCs because he did not wear facemask during the state of emergency. A policeman came and took him to the police station. I did not know what happened then.” [IDI_13_caregiver, Butajira]

Regarding attendance for mental health care, reports were mixed. The overall patient flow was reported to have decreased while the number of new cases seemed to have increased. One frequently mentioned reason for decreased attendance in people with a pre-existing diagnosis of a mental health condition was the transportation cost. The sanctions placed on transportation to only carry half the usual number of passengers led to a doubling of the cost of transportation. This put a strain on people who needed to come to the hospital for their appointment.

“At that time there was a feeling of shock among the patients. We used to get 30 up to 40 or an average of 35 patients, but after corona it reduced to 15 or 16 patients per day” [IDI_02_Psychiatric nurse, Sodo]

“Transportation cut down in half; means one passenger in two seats. For example, if he comes from far and used to pay 100 birr now he pays 200 birr and round trip means 400 birr, if it was 50 birr now it's 200 birr for round trip” [IDI_02_psychiatry nurse, Butajira]

COVID-19 put a toll on people who did not have a mental illness prior to the pandemic. The psychiatric nurses reported an increased number of new cases. The cases were related to fear of contracting the virus, misinterpretation of symptoms such as cough and fear of losing people. The new cases ranged from mild obsessive-compulsive disorder to serious suicidal thoughts and attempts.

“If they have a cough, they will think that they have it [COVID-19]; they said take a look at me, my temperature is high. A banker said I have COVID take me to the hospital. She does not sleep, and she said if you are not going to give me any solution, I will commit suicide. She could not calm down, so we sedated her. It took me around 2 months to get her back to her usual self. Now she is fine” [IDI_03_psychiatry nurse]

Respondents also reported an increased number of relapses due to reduced follow-up or the medication being unavailable. In some towns, medication was not available for more than eight months. A few fortunate families tried to get medication from private pharmacies but struggled because of the scarcity of supplies.

“Previously, I would buy the medication from the hospital pharmacy but after the pandemic, it was not the case. I have tried here in Butajira, Sodo, Worabi and other places but I could not find medication. I have also tried in private pharmacies, and I only got 3 pills” [IDI_05_caregiver].

Responses and coping

Family members described trying to protect people with SMHCs from contracting the virus by fetching medicines on their behalf, supplying information about the virus, and even sometimes restraining the person at home to prevent them being exposed to transmission. Health care providers also made efforts to minimize the effect of the virus on their clients by giving longer time periods between appointments, reducing contact hours, dispensing medicines through their families, and providing health information through the community-based health extension workers.

“What we did at that time was, we extended appointment time a bit further. For those who used to have appointments weekly to monthly, monthly to 2 months to reduce the back-and-forth situation. After that, especially the health extension workers went home to home to give education and we prioritize on non-communicable and communicable disease. Especially NCD, hypertensive, diabetes, including mental illness since they have relation with COVID-19.” [IDI_10_PHC worker]

Health care institutions established a response team, including a psychosocial support team, established new centers of outpatient treatment centers which included mental health care to minimize dropouts, gave training to health care workers, and formed a team for home care to cope with the virus.

Lesson learned

Participants reported the main lessons they took from the current pandemic. These included preparing for a potential future pandemic: availability of medicines, working as a health care team (involving a psychosocial

“It gave us an idea as a country and as a health sector how to tackle if there would be future pandemic. It taught us on decision making, on resource allocation, it also showed us the gaps” [IDI_01_psychiatric nurse]

All the participants reported that the most important lesson learned were the hygiene practices (frequent hand washing). Participants also reported psychological resilience as a good lesson learned.

Discussion

We conducted a mixed method study to describe the effect and explore the consequences of COVID-19 on people with SMHCs and the mental health service. People with SMHCs reported lower well-being and standard of living. The household economic situation was reported to have worsened after the pandemic. Participants reported stressful initial reactions. Caregivers, health care workers, and community members thought that people with SMHCs may be more susceptible to COVID-19 and its consequences such as economic problems and heightened stigma and discrimination. Health care professionals reported decreased patient flow, increased new cases and more relapses.

People with SMHCs were considered more susceptible to COVID-19 infections. The main reasons mentioned were lack of capacity to comprehend information and inability to afford face masks and other essential protective materials. These are essential areas of intervention for both the current and future pandemic. The intervention has to be directed at both people with SMHCs, who would benefit from better compliance with control measures, and the public and health professionals, regarding appropriate support of people with SMHCs. Consideration should also be given to ensure that pre-existing inequities are not exacerbated. The risk of exacerbating the treatment gap in low-income countries (34) and multidimensional poverty (8) should also be considered.

Economic consequences were reported both in the quantitative and the qualitative study. This included increased cost of transportation, loss of daily jobs, and inability to go to the market. These consequences will likely worsen the existing lower living standards of people with SMHCs and their family members (35, 36).

Service providers also reported a higher rate of relapse after COVID-19. They linked the relapse to the interrupted medication availability, inability to come to the health facility, economic problems, and the stress associated with the pandemic. Similar findings were also reported in other places (37-39). Increased relapse in the context of poor

access to care is a key factor contributing to people with SMHCs becoming homeless, abandoned at holy water sites or being chained up (40, 41). The centralized, facility-based nature of the existing mental health system in Ethiopia exacerbates this situation. More responsive care is needed, included the possibility of delivery of medication by health extension workers and home-based care for those who are most unwell and/or restrained. Establishing such models of care would be an important contribution to reducing human rights violations of people with SMHCs as well as increasing system resilience in the face of a pandemic.

Stigma and discrimination appear to have increased due to fear of contracting the virus from people with SMHCs. People with SMHCs were considered at increased risk because of concerns that they may not adhere with standard public health control measures, such as wearing of facemasks, washing hands frequently and staying on the streets, increasing the risk of exposure to the infection (42, 43). These assertions were based on a small number of examples and risked further ostracizing people with SMHCs from appropriate protection, even when it is known that people with SMHC are at risk of poorer outcomes from COVID-19 (44).

The health care professionals and institutions applied different adaptive coping mechanisms to reduce the impact of the pandemic on people with mental illness. These included dispensing medicines for family members, longer intervals between appointments, and setting up new centers. These are important lessons that need to be kept for future pandemics. On the other hand, some of the coping mechanisms used by family members, especially restraining the person with SMHCs at home need to be addressed as a matter of urgency and alternative support mechanisms need to be developed.

Though our study explored the effect of COVID-19 on people with SMHCs and the mental health service in well characterized cohorts, findings may not be transferable to more urban areas like Addis Ababa. Since the study was conducted before the introduction of vaccine, we did not report on vaccine access and use in people with SMHCs.

Conclusions

COVID-19 had negative consequences on people with SMHCs and the mental health service. These included increased perceived vulnerability to infection, economic problems, discrimination, and challenges of access to care. New studies are required to find out if these trends, particularly the poor access to care, have continued given the potential to exacerbate the substantial pre-existing treatment gap. New studies are also required to address dangerous practices, particularly restraining of people with SMHCs. Some of the coping mechanisms in the settings such as setting up new centers can be transferable to other settings and similar pandemics in the future.

Declarations

Ethics approval and consent to participate

The study was approved by the Institutional Review Board of the College of Health Sciences, Addis Ababa University (072/20/CDT). We provide detailed information for the participants before receiving consent.

Consent for publication

Not applicable

Availability of data and material

The datasets supporting the conclusions of this article are included within the article. Any additional material can be obtained upon reasonable request.

Competing interests

The authors have no conflict of interest to declare.

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Authors' contribution

AF and WF conceived the study and they were part of the whole process of the study. CH, SS and EG participated in the design of the study, analysis of qualitative data, reviewed all versions and made corrections. All the authors read and approved the last version.

Supplementary Material

None

Reference

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