

The Impact of Coronavirus Disease 2019 on People with and without Severe Mental Illness in Tamil Nadu, India

Abstract

Background/Objectives: People living with severe mental illness may be more susceptible to infection and stress, leading to relapses or worsening of their mental health. The experiences of people with severe mental illness during the coronavirus disease 2019 (COVID-19) pandemic have seldom been captured. This study set to describe the experience of people with severe mental illness in Tamil Nadu, India, during the COVID-19 pandemic. **Methods:** Between July and December 2020, 158 age-, gender-, neighborhood-matched case – control pairs from the INTREPID II study completed a survey regarding their experience, worries, and behavioral changes during the pandemic. Their responses were collected by phone during six-monthly check-ins, or in-person at 24-month follow-up appointments. Only the first response for each participant is included in this report. **Results:** None of our participants reported knowingly having been infected with COVID-19 by the time of the survey. There is no evidence that people with psychoses were disproportionately affected by the pandemic. Unemployment and financial hardship were highly prevalent in both cases and controls. Job-related anxiety and stress were the largest source of worry, followed by worries regarding government decisions and access to mobile phones. **Conclusions:** The pandemic placed great strain on participants both with and without severe mental illness. The impact of unemployment and financial hardship as a result of COVID-19 requires urgent attention.

Keywords: *Coronavirus disease 2019, psychosis, rural India*

CORONAVIRUS DISEASE 2019 IN INDIA

To date, India has recorded over 11 million cases of coronavirus disease 2019 (COVID-19).^[1] A nationwide lockdown was imposed in March 2020. People living with severe mental illness could be more susceptible to infection and stress,^[2] leading to relapses or worsening of their mental health. The experiences of people with severe mental illness during the pandemic have seldom been captured, and there is a particular dearth of information on this group's experiences from the outside of Western Europe and North America.^[3]

INTREPID II is a longitudinal cohort study of psychotic disorders (affective and nonaffective) in urban and rural areas in India, Nigeria, and Trinidad. In India, our catchment area consists of four taluks in Tamil Nadu; Chengalpattu, Thirupurur,

Uthiramerur, and Maduranthakam. People aged 18–64 years with ICD-10 psychotic disorders that have not been treated with antipsychotic medication for more than 1 month before case identification are included. A detailed research protocol for INTREPID II has been published elsewhere.^[4] Out of 225 recruited participants, 158 cases and their respective controls completed the COVID-19 survey between July 26 and December 11. These were the total number of participants that we were able to contact during this period. These responses were collected by phone during six-monthly check-ins or in-person at 24-month follow-up appointments. For participants who completed the survey more than once, only the first response for each participant is included in this report. Items in the COVID-19 survey were selected from existing national surveys that were used to capture the general impact of the pandemic on people's livelihood [Appendix 1]. Our sample demographic is described in Table 1.

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CORONAVIRUS DISEASE 2019 EXPERIENCE AND DIAGNOSIS

None of our 158 cases and 158 controls reported knowingly having been infected with COVID-19 by the time of the survey. One case and 12 controls (7.6%) reported someone close to them having been diagnosed or strongly suspected to have COVID-19. Zero cases and 7 controls (4.4%) reported someone close to them having been hospitalized with COVID-19. Zero cases and 5 controls (3.2%) reported that someone close to them died from COVID-19.

IMPACT OF CORONAVIRUS DISEASE 2019

Loss of job (*N* = 311)

Five participants did not respond to the question regarding their employment. Unemployment or the inability to do paid work was commonly experienced (73 [46.5%] cases and 83 [53.9%] controls). Among participants who were employed at baseline (*N* = 139), loss of paid work affected 22 of 41 cases (53.7%), and 62 of 98 controls (63.3%). From conditional regression of 60 discordant pairs (in this case, a discordant pair mean that either case or control had reported losing their job, whilst the other group had not), there is weak evidence that controls experienced an increased risk of losing their job compared to cases (odds ratio [OR] = 1.50, 95% confidence interval [CI] 0.89–2.51).

Major cut in household income (*N* = 293)

Twenty-three participants refused to answer the question regarding their household income. Most people in our sample experienced a major cut in household income (75 cases [51.4%] and 105 controls [71.4%]). From 56 discordant pairs, there is evidence that controls experienced an increased risk of experiencing a major cut in household income compared to cases (OR = 3.00, 95% CI 1.64–5.49).

Unable to pay bills (*N* = 316)

Twenty cases (12.7%) and 32 controls (20.3%) reported the inability to pay bills. From 36 discordant pairs, there is weak evidence that controls were more likely to be unable to pay bills than cases (OR = 2.00, 95% CI 1.00–4.00).

Unable to access sufficient food (*N* = 316)

Forty-seven cases (29.8%) and 37 controls (23.4%) reported the inability to access sufficient food. From 50 discordant pairs, there is no evidence that controls were more likely to be unable access sufficient food than cases (OR = 0.67, 95% CI 0.38–1.17).

Access to health care and care avoidance due to coronavirus disease 2019 (*N* = 316)

One hundred and eight cases (31.7%) and 47 controls (29.8%) reported being unable to access health-care services during the COVID-19 pandemic. Fourteen cases (8.9%) and 19 controls (12.0%) avoided

Table 1: Sample characteristics

	Case, <i>n</i> (%)	Control, <i>n</i> (%)	Total, <i>n</i> (%)
Total	158	158	316
Gender			
Male	60 (38.0)	58 (36.7)	118 (37.30)
Female	98 (62.0)	100 (63.3)	198 (62.7)
Age, mean (SD)	43.4 (11.3)	43.7 (11.2)	
Ethnicity			
Tamil	158 (100)	157 (99.4)	315 (99.7)
Telugu	0	1 (0.63)	1 (0.3)
Relationship status			
Single	46 (29.1)	14 (8.86)	60 (19.0)
Married	70 (44.3)	121 (76.6)	191 (60.4)
Divorced	17 (10.8)	3 (1.90)	20 (6.33)
Widowed	25 (15.8)	20 (12.7)	45 (14.2)
Employment status			
Employed	42 (26.8)	100 (63.3)	142 (45.1)
Housework	50 (31.9)	55 (34.8)	105 (33.3)
Long-term unemployed	65 (41.4)	3 (1.90)	68 (21.6)
School ever			
No	29 (18.5)	28 (17.7)	57 (18.1)
Yes	128 (81.5)	130 (82.3)	258 (81.9)
Currently live with			
Alone	18 (11.4)	3 (1.90)	21 (6.65)
Alone, with children	15 (9.49)	20 (12.7)	35 (11.1)
Spouse/partner	8 (5.06)	14 (8.86)	22 (6.96)
Spouse/partner and children	57 (36.1)	104 (65.8)	161 (51.0)
Parents	48 (30.4)	14 (8.86)	62 (19.6)
Other	12 (7.59)	3 (1.90)	15 (4.75)
Diagnosis			
Nonaffective psychosis	152 (96.2)	NA	NA
Affective psychosis	6 (3.8)	NA	NA
Years of untreated psychosis			
<2	44 (27.9)	NA	NA
2 or above	114 (72.2)	NA	NA
Positive and negative symptoms scale, mean (SD)			
Positive symptoms	18.9 (5.6)	NA	NA
Negative symptoms	18.8 (6.8)	NA	NA
General psychopathology	34.8 (6.1)	NA	NA

SD: Standard deviation, NA: Not available

approaching health facilities because of fear of COVID-19 infection.

WORRY AND ANXIETY RELATED TO CORONAVIRUS DISEASE 2019

Overall difficulties with mood (*N* = 316)

Over half of the participants in our sample reported worsening difficulties with mood, worry, or anxiety since the COVID-19 pandemic started. Eighty-seven cases (55.1%) and 93 controls (58.9%) reported such difficulties since the beginning of the pandemic. From 26 discordant pairs, there is weak evidence that controls had

more difficulties with mood than cases (OR 1.60, 95% CI 0.73–3.53).

Causes of significant stress and worries

Participants were asked to rate on a 5-point Likert scale (0–4) the extent of stress or worry they felt regarding issues related to the COVID-19 pandemic. Responses were subsequently grouped, with 0–1 classified as “Little or No Worry,” and 2–4 as “Moderate to Significant Worry.”

Worries related to contracting or infecting others with coronavirus disease 2019 (*N* = 316)

Three cases (1.9%) and 20 controls (12.7%) reported moderate to significant worry about becoming seriously ill from COVID-19. Two cases (1.3%) and 25 controls (15.8%) reported moderate to significant worry about infecting others with COVID-19. One case and 18 controls (11.4%) reported moderate to significant worry about people they know contracting COVID-19.

Other sources of worries

The most common source of significant worry among both cases and controls is the possibility of unemployment. Sixty-two cases (39.5%) and 78 controls (50.0%) reported moderate to significant worry of losing their jobs. From 70 discordant pairs, there is weak evidence that controls worried about unemployment more than cases (OR = 1.59, 95% CI 0.98–2.58).

The second most common source of significant worry for cases related to the levels of government action, with 19 cases (12.0%) and 22 controls (13.9%) reporting concern about the government response. From 21 discordant pairs, there is no evidence that controls worried more about government action than cases (OR = 1.33, 95% CI 0.56–3.16).

The third most common source of significant worry for cases and second most common source for controls were other work-related worries even if they felt that their jobs were safe at present. Sixty cases (10.2%) and 28 controls (17.7%) reported moderate to significant work-related worries. From 36 discordant pairs, there is weak evidence that controls are more likely to report work-related worries than cases (OR = 2.00, 95% CI 1.00–4.00).

The third most common source of significant worry for controls related to mobile phone access. Fourteen cases (8.9%) and 24 controls (15.2%) reported moderate to significant worry of losing mobile phone access. From 24 discordant pairs, there is weak evidence that controls worried more about mobile access than cases (OR = 2.43, 95% CI 1.01–5.86).

Less than 5% of participants in our sample reported moderate to significant worry about shortage of essential

supplies, lack of internet access, personal safety or security, education or exams, marriage or romantic relationships, separation from family members due to regulations, and being socially isolated.

Social connectedness

Overall, COVID-19 did not affect the social connectedness of participants in our sample with their romantic partner, family, friends, neighbors, people in the same village, town or city, and country. The only exception regarded social connectedness to the people in their workplace or schools (*N* = 269), with 66 cases (47.8%) and 59 controls (45.0%) reporting feeling less connected to them since the pandemic.

Limitation and summary

A limitation of this study is that the questionnaire used for the data collection is not validated for the Chennai context; however, it was developed in consultation with researchers based there. A second limitation corresponds to the low number of discordant pairs in some of our analysis, such that the CI for our estimated effect was wide and should be interpreted conservatively.

In general, participants in our sample were not directly affected by COVID-19 infection at the time the survey was completed, although they were greatly impacted by the measures taken to control the pandemic.

From our data, there is no evidence that people with psychoses were disproportionately affected by the pandemic; in fact, people without psychosis were more likely to report negative impacts of COVID-19 across many measures. This might be because people with severe mental illness were more sheltered or had less to lose when the pandemic hit (being less likely to be employed and actively engaged with the community outside of their household). Alternatively, it could be explained by people without psychosis being more aware of the severity of the situation and of events unfolding around them, due to increased social participation and access to news updates.

It was clear from our data, however, that the pandemic placed great strain on participants both with and without severe mental illness. Unemployment and financial hardship were highly prevalent in our sample, with a quarter of our participants experiencing difficulties accessing sufficient food and accessing health-care services. Most respondents are daily-waged workers with jobs that require travel outside of their villages and do not own their own vehicles. They rely on their mobile phone access to communicate with their contractors regarding work opportunities. Downsizing of local businesses means that work opportunities are further limited. The imposed lockdown rules such as closure of nonessential industries and pauses of public transportation services

are therefore likely to have contributed to these adverse experiences. The lockdown policies compound with the fear of infection of COVID-19 appeared to have led to the observed high unemployment rates, reduction of income, and prevalent worries of such consequences. The impact of unemployment and financial hardship as a result of COVID-19 require urgent attention.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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APPENDIX 1: COVID-19 EXPOSURE AND IMPACT QUESTIONNAIRE

Date

Place of interview

- O 1 At the premises of the treatment provider where the case was identified
 - O 2 At the premises of another treatment provider
 - O 3 At the interviewee’s home
 - O 4 At the premises of the research site (SCARF/Uni of Ibadan/Uni of West Indies)
 - O 5 Other (if other, please specify)
- If this instrument was not completed, please indicate the reason:
- O 1 Passive or active refusal
 - O 2 Participant too symptomatic to respond
 - O 3 Participant tired/busy/insufficient time
 - O 4 Limited understanding of instrument
 - O 5 Participant travelling for unknown time
 - O 6 Participant dropped out/permanently moved residence
 - O 7 Other (if other, please specify)

O0 No	O1 Yes, diagnosed and recovered	O2 Yes, diagnosed and still unwell	O3 Not formally diagnosed but suspected
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1. Have you had Covid-19 (coronavirus)?

If no, skip to q2

1a. If you have had coronavirus or think you have had coronavirus, please indicate which of the following symptoms you have experienced:

- A cough
 - A fever (i.e. a temperature >38 degrees of Celsius and/or feeling cold and shivering)
 - Shortness of breath and/or difficulty breathing
 - None of the above
-

1b. If you have had coronavirus or think you have had coronavirus, were you able to access health care services?

- O0 No
 - O1 Yes
-

1c. If yes, what type of health services did you access?

- O1 Public health services
 - O2 Private health services
 - O3 CAPS services
-

1d. Have you been hospitalised due to COVID-19 (coronavirus)?

- O0 No
 - O1 Yes
-

2. Have you experienced any of the following due to the COVID-19 pandemic?

Lost your job/been unable to do paid work	O0 No	O1 Yes	98 N/A
Your spouse/partner lost their job or was unable to do paid work	O0 No	O1 Yes	98 N/A
Major cut in household income (e.g. due to you or your partner being temporarily laid off from work/put on leave/not receiving sufficient work)	O0 No	O1 Yes	98 N/A
Unable to pay bills	O0 No	O1 Yes	98 N/A
Evicted/lost accommodation	O0 No	O1 Yes	98 N/A
Unable to access sufficient food	O0 No	O1 Yes	98 N/A
Unable to access required medication	O0 No	O1 Yes	98 N/A
Someone close to you had COVID-19 (e.g. close family member or friend), either diagnosed or strongly suspected	O0 No	O1 Yes	98 N/A
Someone close to you (e.g. close family member or friend) is in hospital with COVID-19	O0 No	O1 Yes	98 N/A
Someone close to you (e.g. close family member or friend) died from COVID-19	O0 No	O1 Yes	98 N/A
School closure	O0 No	O1 Yes	98 N/A
Childcare limitations for children	O0 No	O1 Yes	98 N/A

N/A: Not applicable

3. If needed, were you able to access health care services during the Covid-19 pandemic for any condition, either COVID-related or not COVID-related?

O0 No	O1 Yes
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4. Have you avoided approaching health facilities because of fear of becoming infected while in care?

O0 No	O1 Yes
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5. Have any difficulties with your mood, worry or anxiety become worse at times since the Covid-19 pandemic started?

O0 No	O1 Yes	O2 Not sure
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6. Since the COVID-19 pandemic, have any of these been causing you significant stress or worry (e.g. they have been constantly on your mind or have been keeping you awake at night)?

	Not worried at all	A little worried	Moderately worried	Very worried	Significantly worried
Becoming seriously ill from Covid-19	O1	O2	O3	O4	O5
Catching Covid-19 due to need to self-isolate/possibility of infecting others (even if you aren't worried about becoming seriously ill yourself)	O1	O2	O3	O4	O5
People you know contracting Covid-19	O1	O2	O3	O4	O5
Getting medication/accessing healthcare for yourself	O1	O2	O3	O4	O5
People you know getting medication/accessing healthcare	O1	O2	O3	O4	O5
Work (even if you feel your job is safe)	O1	O2	O3	O4	O5
Losing your job/unemployment	O1	O2	O3	O4	O5
Finances	O1	O2	O3	O4	O5
Shortage of essential supplies (e.g. food/water) for yourself or people you know	O1	O2	O3	O4	O5
Internet access	O1	O2	O3	O4	O5
Mobile/phone access	O1	O2	O3	O4	O5
Your own safety/security	O1	O2	O3	O4	O5
Education or exams	O1	O2	O3	O4	O5
Marriage or other romantic relationships	O1	O2	O3	O4	O5
Friends or family living in your household (other worries besides contracting COVID-19)	O1	O2	O3	O4	O5
Friends or family living outside your household (other worries besides contracting COVID-19)	O1	O2	O3	O4	O5
Separation from family members (e.g. due to travel restrictions, hospitalisation, care home restrictions)	O1	O2	O3	O4	O5
Level of government action	O1	O2	O3	O4	O5
Future plans	O1	O2	O3	O4	O5
Being socially isolated	O1	O2	O3	O4	O5
Other (specify below)	O1	O2	O3	O4	O5

7. How does your amount of sleep compare to before the COVID-19 pandemic?

A lot less	A little less	About the same	A little more	A lot more
O1	O2	O3	O4	O5

8. Since the start of the COVID-19 pandemic, have you experienced difficulties sleeping?

Not at all	A little difficulty	Moderate difficulty	Significant difficulty	Severe difficulty
O1	O2	O3	O4	O5

9. Have you done the following more, or less, or about the same as you would do during a typical week before the COVID-19 pandemic?

	Less than usual	About the same	More than usual	N/A
Eating unhealthy foods	O1	O2	O3	O4
Getting enough sleep	O1	O2	O3	O4
Exercise outdoors or at home (e.g. walking running, cycling, yoga, weights)	O1	O2	O3	O4
Eating healthy/nutritious foods	O1	O2	O3	O4
Watching TV	O1	O2	O3	O4
Speaking with friends or family remotely (e.g. by voice and/or video, text, WhatsApp, email)	O1	O2	O3	O4
Playing video or computer games	O1	O2	O3	O4
Talking to people if something's worrying me	O1	O2	O3	O4
Praying	O1	O2	O3	O4
Other leisure activities (e.g. arts and crafts, board/card games)	O1	O2	O3	O4
Smoking cigarettes/vaping	O1	O2	O3	O4
Using cannabis or other recreational drugs	O1	O2	O3	O4
Drinking alcohol	O1	O2	O3	O4
Getting involved with community activities or volunteering	O1	O2	O3	O4
Household chores (e.g. tidying, cleaning, gardening)	O1	O2	O3	O4
Doing nothing in particular or procrastinating	O1	O2	O3	O4

If you do not usually do an activity, please select N/A. N/A: Not applicable

10. In terms of your social world, to what degree has the COVID-19 pandemic influenced how socially connected you feel with

	Much less connected	A little less connected	About the same	A little more connected	Much more connected	N/A
Your romantic partner (e.g. husband, wife, boyfriend, girlfriend)	O1	O2	O3	O4	O5	O6
Your family	O1	O2	O3	O4	O5	O6
Your friends	O1	O2	O3	O4	O5	O6
The people in your workplace or school (including co-workers, customers, clients, and students)	O1	O2	O3	O4	O5	O6
Your neighbours	O1	O2	O3	O4	O5	O6
Your village/town/city	O1	O2	O3	O4	O5	O6
Your country	O1	O2	O3	O4	O5	O6

N/A: Not applicable

11. How often do you feel lonely?

O1 Often/ always	O2 Some of the time	O3 Occasionally	O4 Hardly ever	O5 Never
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12. Has this changed since the COVID-19 pandemic?

O1 No problem with this	O2 Worse since outbreak	O3 No change	O4 Better since outbreak
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13. Compared to before the COVID-19 pandemic, have you been in contact with people outside of your home

O1 A lot less	O2 A little less	O3 About the same	O4 A little more	O5 A lot more
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14. Has the quality of the relationships between you and members of your family/friends that you are not living with changed?

O1 A lot worse	O2 A little worse	O3 About the same	O4 A little better	O5 A lot better
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15. How stressful have these changes in family/friend relationships been for you?

O1 Not at all	O2 Slightly	O3 Moderately	O4 Very	O5 Extremely
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16. If you are a carer, has the COVID-19 pandemic affected your caring responsibilities and relationships with the person you care for?

O1 No problem with this	O2 Worse since outbreak	O3 No change	O4 Better since outbreak
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