

Suicidality in the context of COVID-19 Pandemic: Risk Assessment and Management

Introduction

The ongoing COVID-19 pandemic worldwide has been increasingly associated with suicides. Instances of suicide in context of the pandemic have been reported among individuals who have tested positive for COVID-19 infection, those who have suffered severe financial set-backs and those experiencing alcohol withdrawal syndrome. The COVID-19 pandemic has led to significantly increased levels of stress at community, family and individual level with a consequent increased vulnerability to suicide. Adding to the same are various policy measures formulated to address and limit the spread of COVID-19 in India. These measures leading to isolation and stigma due to illness, limited access to basic necessities and financial stress, as well as a rapid dissemination of information (including mis-information) via internet based platforms, have led to increased levels of anxiety, fear and psychological stress across the entire country. This distress may stem from the uncertainty of their own as well as their family's health, well being and these could increase the suicide risk. People with pre-existing psychological problems, psychiatric disorders (depression, anxiety and specially alcohol dependence) may be more vulnerable to suicide risk.

The following are guidance that can be used by medical professionals (and other frontline personnel) for recognizing those at risk for suicide, assessing the risk and providing management.

Who needs to be assessed?

The behaviours described below should possibly warn health professionals that they may represent “Warning Signs” that individuals in the context of COVID-19 may be contemplating suicide and will require assessment.

Emotional

- ❖ Acute stress

(Q. Are you *feeling overwhelmed* with your *current* situation as a result of the pandemic (home isolation or quarantine/ hospital quarantine) / Are you *experiencing persistent severe distress* due the impact of the pandemic on your life or Have you developed *any unexpected problems* that are linked to the pandemic e.g. relationship strain or sense of loneliness or change to family dynamics/ abandonment/ isolation, substance withdrawal-nicotine/alcohol, financial or job related uncertainty/ experiencing stigma resulting from COVID-19 infection?)

- ❖ Anxious or agitated

(Q. Do you *feel persistently/ continuously anxious/ restlessness or agitated* these days as a result of the pandemic? Are you *overwhelmed with thoughts about your own or your family's health, wellbeing, safety, financial security or access to basic amenities?*)

Feeling/Talking

- ❖ Feeling isolated

(Q. Do you feel alone/isolated since quarantined? Are you missing your family members due to the quarantine?)

- ❖ Feeling of hopelessness and worthlessness

(Q. Do you think your situation/ health (for those +ve or suspected to be +ve/ experienced extreme set backs) will never improve? Do you think you will NEVER be able to pass through this phase? Do you feel that you are or will become a burden to others? Do you feel worthless about yourself that you're unable to improve your situation or regret that you didn't do enough earlier? Do you worry about uncertainty of future, a sense of lack of control for your situation?)

- ❖ Suicidal ideations/plans

(Q. Do you feel it is better to end your life? Do you wish you were dead? Are you thinking about suicide? Do you have any suicidal plans? If so enquire about method, any preparatory acts et

Behaviours

- ❖ Signs of extreme anger

(Q. Do you blame others for your current situation? Do you feel seeking revenge on them?)

- ❖ Displaying extreme mood swings

(Q. Do you experience sudden sadness/ anger/ frustration/ emotional swings that are beyond your control? Do you cry often these days?)

- ❖ Change in patterns of Substance use

(Q. Has there been an increase/decrease in use of substances like alcohol, tobacco etc? Having strong urge to use them now? Experiencing severe withdrawal symptoms?)

❖ Change in patterns of eating/sleeping

(Q. Has there eating or sleeping much more or less)

Assessment:

- Evaluate for any ongoing stress/ consequences of the pandemic on specifically the individual.
- Explore for risk factors (imminent job loss or recent unemployment, relationship, illness, severe financial stress/ large debts/ poor-limited social support, previous history of mental health issues) and also make it a point to ask for protective factors(e.g., family support, stable relationship, assured employment on an ongoing basis, good coping skills, religious beliefs)
- Enquire about suicidal thoughts and behaviours. Eliciting information about suicidal thoughts may begin with a normalizing question (It is common for people to think of death and dying in difficult situations such as these. Do you sometimes entertain thoughts about death and dying?)
- Explore for the frequency and severity of suicidal thoughts (ask about the suicidal plan in detail)
- Details of any recent suicide attempt should include the intention for attempting suicide, lethality, mode of attempt and reasons for the attempt.
- Ask for history of mental illness. In patients with known mental illness, ask for auditory hallucinations (hearing voices), specifically for commanding type.
- The assessment should allow for a reasonable stratification of risk as low (few risk factors, more protective factors), medium or high (more risk factors, less protective factors, active plans or a recent attempt)

RISK FACTORS for completed suicide

- ❖ Previous suicide attempts
- ❖ Presence of mental disorders
- ❖ History of substance use disorders
- ❖ Family history of suicide
- ❖ Chronic physical illness/terminal illness

Non-Pharmacological management

What immediate intervention can be provided?

During the assessment, some general interviewing and counselling skills are likely to be helpful such as:

- ✓ Offering help by stating “I’m here to help you.”
- ✓ Be a good listener “Give ample time to allow the person to express all their worries, apprehensions and thoughts”
- ✓ **Avoid** making dismissive comments like “*you’ve nothing to worry*” or “*don’t think negatively*” “*Everything will be fine*” “*Many more are in much worse trouble than you*”
- ✓ Be non-judgmental, **avoid** making statements like “*you should’ve done more when you had the chance*” “*you shouldn’t have taken that loan*”
- ✓ State that you can understand the person’s feelings in this situation and that almost everyone is feeling the worry and anxiety
- ✓ Being supportive (we can all get through this together; we need to help each other) and instilling hope (*FOR suspected COVID-19 people-* there is a high possibility that you’re not infected/ *FOR COVID-19 confirmed cases-* majority of people recover from COVID 19 with mild symptoms and without any complications).
- ✓ Building a contract by asking ‘Will you promise me not to harm yourself till I find help for you?’

Crisis plan as a safety net to safeguard the life of the patient should be in place.

The crisis plan can include

- ✓ Distraction from the suicidal thoughts by reading books, keeping in touch with family via mobile phones/ developing a regular schedule within the confines of self-isolation that focus on self-improvement-physical/psychological, starting new or re-starting old hobbies etc.
- ✓ Writing down thoughts in a diary
- ✓ Promising to oneself about not making an attempt
- ✓ Talking to friends or family about their feelings and thoughts
- ✓ In medium and high-risk cases, a psychiatric consultation will be required
- ✓ In such cases, a constant vigilant observation by family members or staff needs to be implemented, and all possible access to means including sharps and medicines should be minimized

Initiate high suicidal risk management

- ✓ Constant supervision by staff. The bed should be located close to the nursing station with easy view
- ✓ Scissors, razors and other potentially lethal objects should be removed
- ✓ No medicines with the patient
- ✓ A shatterproof window of the room, windows with mesh, high windows
- ✓ Doors of the room without latches/bolts from inside
- ✓ Risk assessment twice daily-high risk/medium-once daily/low-once weekly

Intervention based on level of risk:

Risk Level	Risk	Suicidality	Possible Interventions
High	<ul style="list-style-type: none"> • Depression or other psychiatric illnesses • Triggering event • Absence of protective factors 	<ul style="list-style-type: none"> • Has made a Lethal attempt • Recent suicidal attempts • Recurring thoughts about suicide 	<ul style="list-style-type: none"> • Admission to a psychiatric set up is recommended • Removal of access to methods • Vigilant supervision by the staff
Moderate	<ul style="list-style-type: none"> • Multiple risk factors • Few protective factors 	<ul style="list-style-type: none"> • Ideation with plan 	<ul style="list-style-type: none"> • Admission may be necessary • Develop a crisis plan • Frequent observation by staff/family
Low	<ul style="list-style-type: none"> • Few risk factors • Strong protective factors 	<ul style="list-style-type: none"> • Thoughts of death, • No plan, intent or behaviour 	<ul style="list-style-type: none"> • Outpatient referral to a counsellor or mental health professional recommended

Specialist Assessment

If there is a history or symptoms of severe mental illness and the symptoms are suggestive of severe depression and psychosis the person may be referred for psychiatric assessment. Further any patient with moderate or severe risk (see table above) will require specialist psychiatric evaluation.

Suicide risk of Frontline personnel

Frontline personnel experiencing burnouts, health anxiety, pre-existing mental health & addiction issues are also likely to have a heightened suicide risk. It is necessary to ensure early mental health assessment and interventions if they exhibit any early 'warning signs'.

Conclusion

The likelihood of suicide risk may be higher among subjects exposed to the COVID-19 pandemic. The guidance are envisaged to help frontline personnel to assess those at risk for suicide, determine their risk level and provide appropriate management.

References

- Chanmugam A, Triplett P, Kelen G (2011). *Emergency Psychiatry*. Cambridge University Press. <https://doi.org/10.1017/CBO9781139021319>
- Weber AN, Michail M, Thompson A, Fiedorowicz JG (2017). *Psychiatric Emergencies: Assessing and Managing Suicidal Ideation*. *Medical Clinics of North America*. <https://doi.org/10.1016/j.mcna.2016.12.006>

Aggression in the context of COVID-19 Pandemic: Risk Assessment and Management

Introduction:

COVID-19 pandemic has created psychological distress and various levels of crisis in the society which includes financial, social and occupational. Various measures taken to curb the pandemic spread include quarantine, isolation and nationwide lockdowns. In the current scenario of COVID-19 pandemic, psychological distress can lead to aggression in some particularly in those with pre-existing psychiatric illness.

Aggression can be a symptom of bipolar disorder, psychosis, substance use disorders, and delirium. In the background of the recommendation of chloroquine as a prophylactic and treatment agent in COVID-19 cases, *it is important to note that there are reports of chloroquine induced psychosis. Aggression has to be managed systematically, and in a COVID-19 patient, additional precautions have to be taken to prevent the spread of disease to health workers, other patients, and care givers.*

Assessment of risk for aggression

An initial assessment should include the assessment of risk factors for aggression.

- ✓ Younger age
- ✓ Male gender
- ✓ Substance use
- ✓ Past history of violence
- ✓ Presence of psychiatric illness

(Suspiciousness/fearfulness towards others, hearing voices that command a person to act in a particular manner)

- ✓ Environmental factors such as overcrowding, the frustration of being isolated or quarantined and easy accessibility to weapons that can be used for aggression.

NOTE: Imminent signs of violence – verbal and nonverbal including direct threats of violence should not be missed

If a patient shows any signs of aggression, evaluate the following:

- What is the magnitude of the intended harm?
(e.g. verbally abusive, threatening physical harm to self or others, damage to property)
- What does the patient want?
(e.g demanding discharge, demanding for specific needs in quarantine home, demanding tobacco/alcohol)
- Does the patient have any plan to execute violence?
(e.g. Does the patient voice out to slap/hit/break things, any accessible means to carry out violence, any recent event of violence in the quarantine facility)
- Who is the potential victim and how accessible is the victim?
- How soon is the patient likely to carry out the threat?

Intervention

1.Verbal de-escalation: De-escalation is a technique where the health care professional calmly communicates with an agitated patient to understand, manage and resolve his/her concerns. It should help reduce the patient's agitation and potential for future aggression or violence.

Interview settings:

- Even though the patient is isolated due to COVID-19, try to ensure privacy during the interview
- The patient should be under constant observation by keeping the patient near the nursing area
- There should be a clear exit point for the health care professional
- Maintain a safe distance of at least two arm distance
- Never examine a potentially violent patient alone and call for more help when required

Interview technique:

- Stay calm and listen to the patient carefully.
- Try to understand his concerns and reasons behind aggression.

- Talk to the patient softly yet firmly.
- Stay non-provocative and be non-judgmental.
- Address the patient's concerns that are valid and offer valid solutions.

II. Chemical restraint:

- If verbal de-escalation fails or cannot be used and with imminent risk of violence, chemical restraint can be used. Informed consent should be taken from the patient or bystander as far as possible.
- The following agents can be used –Olanzapine, haloperidol, lorazepam, promethazine. Oral route is preferred or else, intramuscular-i.m. (haloperidol, promethazine) /slow intravenous i.v. (haloperidol, lorazepam) the route can be used as the second choice.
- T. Olanzapine 5mg stat dose may be an oral agent if the patient is willing. But this strategy IS INEFFECTIVE IF THERE IS AN IMMEDIATE RISK OF AGGRESSION.

Benzodiazepines should be used with caution in case of respiratory compromise.

Medications	Dosage per day	Route	Side effects	Monitoring
Olanzapine	5 -20 mg	P.O *10 mg IM	acute dystonia, hand tremors, rigidity, slurring of speech	Motoric side effects
Haloperidol	2.5 to 10 mg	P.O/IM/ Slow IV	acute dystonia, hand tremors, rigidity, slurring of speech	Motoric side effects. Cardiac monitoring required for REPEAT DOSING (ECG-QTc prolongation)
Lorazepam	2 mg to 6 mg	P.O/IM/ Slow IV	Respiratory depression	PR/ BP/ RR
Diazepam	5 mg to 20 mg	P.O/IM/ Slow IV	Respiratory depression	PR/ BP/ RR
Phenergan/ Promethazine	25 mg to 50 mg Usually given with antipsychotic to prevent dystonia	P.O/IM	Anticholinergic side effects	Cardiac monitoring

Mechanical restraint:

- Mechanical restraint should be used sparingly, never used as the first choice and only used if
 - there is a risk of disruption to life-saving measures
 - aggression is present even after adequate sedation or
 - if there is a contraindication for chemical restraint.
- Four point restraint with a designated person for each limb and the lead manages the head and airway. The soft bandage should be used. Restraint should be done in a supine position with both legs nearby and one hand above the head and the other hand beside the trunk.
- Regular monitoring of vitals, circulation to extremities and injury due to restraints should be done once in 15 minutes. Regular assessment for the continuation of restraint should be done and once the person becomes calm, restraint should be removed one limb at a time.
- Restraint should not extend beyond two hours and should be continued only after a thorough reassessment of risk.

S.A.F.E.S.T Approach as listed below:

S-Spacing: Maintain distance from the patient.

A-Appearance: Maintain empathetic professional detachment. Appear calm. Build rapport.

F-Focus: Focus on patients' hands and nearby potential weapons. Watch for escalating agitation

E-Exchange: Engage in conversation and try verbal de-escalation. Avoid punitive or judgmental statements

S-Stabilization: Stabilization techniques include chemical and mechanical restraints

T-Treatment: Once the patient is more manageable, treatment should be initiated for the underlying disorder.

Conclusion

Psychological distress and pre-existing psychiatric illnesses are risk factors for aggression in patients kept in COVID-19 treatment settings. The guidance described will help in the assessment and safe management of subjects with aggression.

References

- Chanmugam A, Triplett P, Kelen G (2011). *Emergency Psychiatry*. Cambridge University Press.
<https://doi.org/10.1017/CBO9781139021319>
- Garriga M, Pacchiarotti I, Kasper, S, et al. 2016. Assessment and management of agitation in psychiatry: Expert consensus. *The World Journal of Biological Psychiatry* 17, 86–128.
<https://doi.org/10.3109/15622975.2015.1132007>
- Taylor DM, Barnes TR, Young AH (2018). *The Maudsley Prescribing Guidelines in Psychiatry*. John Wiley & Sons.

Common and Safe to Use Psychotropics In COVID-19 -A Practical Guide for Non-Psychiatrists

Mental Health issues following the COVID-19 are wide-spread. Specialist mental health services may not be available or accessible as the existing medical services are strained following a huge influx of patients. Given this, it may be imperative for non-psychiatric medical professionals to prescribe psychotropics' for short term management of psychiatric disorders.

In this context, this chapter describes psychotropic medications safe to be used in COVID-19 in two scenarios

1. Those with pre-existing psychiatric illness and currently under treatment for a comorbid medical condition.
2. Acute onset behavioural symptoms in those receiving treatment for a medical condition.

1. TREATMENT OF PATIENTS WITH PRE-EXISTING PSYCHIATRIC ILLNESS

Most psychiatric illnesses require long-term treatment(≥ 6 months) with psychotropics, which may have to be continued even after remission of symptoms to prevent relapse. These psychotropic medications may have drug-drug interactions with medications used for comorbid medical conditions. Further, they may cause deleterious consequences following the emergence of a comorbid medical condition (e.g. respiratory insufficiency, renal failure, etc.). Precautions for commonly used psychotropic agents in the context of COVID-19 are discussed below:

I. ANTIPSYCHOTICS

a) Indications

- Antipsychotics are commonly used for the treatment of psychotic disorders such as schizophrenia, schizo-affective disorder and acute psychosis.

- They are also used in the acute treatment of mood disorders such as mania, bipolar depression and depression with psychotic symptoms.
- Certain second-generation antipsychotics (e.g. quetiapine) are also used for prophylaxis in bipolar disorder.

b) Adverse effects

- First-generation antipsychotics like haloperidol, trifluoperazine, fluphenazine, and chlorpromazine can cause extrapyramidal side effects (EPS) such as tremors, rigidity, dystonia and sometimes neuroleptic malignant syndrome.
- Although relatively infrequent, second-generation antipsychotics (e.g. olanzapine, risperidone, quetiapine, clozapine, etc.) may also cause the above adverse effects. They are more likely to cause metabolic side effects like weight gain, hyperlipidaemia, worsening of diabetes mellitus etc.
- Clozapine, which is commonly used in treatment-refractory schizophrenia can rarely cause agranulocytosis, seizures and cardiomyopathy.

c) Drug interactions

- Some antipsychotics like haloperidol, quetiapine, ziprasidone can prolong QTc interval. Hence any drugs which also can prolong QTc can have a synergistic effect and should be used with caution.

d) Precautions in COVID-19 patients

- Most of the potential drug interactions are secondary to Cytochrome P450 Inhibition by antiviral medications. Antivirals like lopinavir and ritonavir are CYP inhibitors and can increase levels of haloperidol, olanzapine, and quetiapine. Hence it is imperative to monitor for adverse effects and reduce the dose of the latter if required.
- Azithromycin and hydroxychloroquine can cause QTc prolongation which can worsen when combined with haloperidol/quetiapine/ziprasidone. They have to be used cautiously, with ECG evaluation, in patients with underlying cardiac conditions

II. ANTIDEPRESSANTS

a) Indications

- Antidepressants are commonly used in the treatment of depression, anxiety disorders, and obsessive-compulsive disorder. The most commonly used antidepressants include selective

serotonin reuptake inhibitors (SSRIs) (e.g., escitalopram, sertraline, fluoxetine), tricyclic antidepressants (e.g., amitriptyline, clomipramine, dothiepin), venlafaxine and mirtazapine.

b) Adverse Effects

- Common but relatively mild side-effects include gastritis, diarrhoea, insomnia, and sexual dysfunction. Unusual but notable side effects include the risk of hyponatremia and an increase in bleeding tendencies. Rare side effects include serotonin syndrome, which occurs when combined with other serotonergic drugs.
- Antidepressants especially venlafaxine can cause discontinuation/withdrawal effects on sudden discontinuation.
- Tricyclic antidepressants can cause weight gain, anticholinergic side effects, and sedation.

c) Drug interactions

- Fluoxetine, paroxetine, and fluvoxamine can increase the toxicity of antivirals due to CYP inhibitory action.
- Mirtazapine, bupropion and TCA's also are metabolised by CYP isoenzymes.
- Escitalopram and sertraline are safer because of lesser drug interactions and side effects.

d) Precautions in COVID-19 patients

- Antivirals tend to increase levels of certain SSRIs (particularly fluoxetine, paroxetine) and may increase the risk of serotonin syndrome.

III. MOOD STABILISERS

a) Indications

- Lithium, valproate, carbamazepine, and lamotrigine are effective mood stabilizers used in long term prophylaxis for bipolar affective disorder.

b) Adverse Effects

- Lithium has a narrow therapeutic index (levels between 0.6-1.2 mEq/L). The risk of lithium toxicity is especially higher in those with renal failure, dehydration, hyponatremia, and ingestion of NSAIDs/diuretics.
- Valproate affects hepatic transaminases and can cause hyperammonaemia – young children are at risk for hepatotoxicity.

- Lamotrigine can cause Stevens-Johnson syndrome when the dose is increased too quickly.

c) **Drug interactions**

- Exercise caution while using NSAIDS with Lithium as it can increase lithium levels.

d) **Precautions in COVID-19 patients**

- Lithium is excreted unchanged in the urine and hence is the least likely to have specific drug interactions with antiviral drugs. However, adverse effects have to be monitored because of the narrow therapeutic index and propensity to cause cognitive effects in patients on multiple medications.
- Valproate level may decrease with ritonavir but is generally safe with other antiviral drugs. Similarly, lamotrigine levels may decrease with ritonavir.

IV. **SEDATIVES/HYPNOTICS**

- Cumulative or higher doses of benzodiazepines can rarely cause respiratory depression. Hence, longer-acting benzodiazepines like diazepam or clonazepam may be avoided. Further, they may have CYP related interaction with antiviral drugs. Lorazepam is preferred as it has the least interaction with antiviral drugs and shorter acting.

2. TREATMENT OF ACUTE ONSET BEHAVIOURAL DISTURBANCES WITH PSYCHOTROPICS

I. **DELIRIUM**

- Definitive treatment includes the identification and correction of the underlying cause.
- Antipsychotic drugs like haloperidol, olanzapine or quetiapine are found to be highly beneficial in the management of the agitation. Haloperidol can be given at doses from 2.5-5mg orally or intramuscularly. Intravenous administration should be accompanied by ECG monitoring. Promethazine may worsen delirium. Olanzapine 5-10mg can also be considered either orally or intramuscularly. Oral quetiapine (25-50mg) may also be helpful.
- Avoid benzodiazepines (except in cases of Delirium Tremens) as cumulative doses run the risk of respiratory depression and may cause paradoxical disinhibition.

II. **ACUTE PSYCHOSIS/MANIA**

- Atypical antipsychotics like oral risperidone (4-8mg) /olanzapine (10-20mg) are the first-line drugs used in treating acute psychosis and mania.

- Catatonic symptoms respond to higher dose of IV Lorazepam but should be used with caution in individuals with compromised respiratory status because of the risk of respiratory depression.
- IV Haloperidol 5-10mg can be used alone or in combination with promethazine (only through intramuscular route) in severe states of agitation as a chemical restraint.

III. ANXIETY

- Patients with anxiety or panic-like symptoms can appear agitated and restless. Patient with acute anxiety might develop panic attacks presenting with a sense of impending doom, breathlessness, hyperventilation, sweating, restlessness, irritability and sometimes agitation. Severe cases might necessitate referral to a psychiatrist.
- Low dose benzodiazepine preferably a short-acting drug like lorazepam orally or parenterally can be helpful in acute management. In case of a diagnosable independent anxiety disorder, SSRI's like escitalopram 10-20mg or sertraline 25-100mg can be considered. SSRIs can cause hyponatremia in the elderly.

IV. DEPRESSION

- Depression is a common comorbidity with chronic medical illnesses. It may also be seen in those with acute illnesses and is often underrecognized.
- As discussed earlier, escitalopram (10-20 mg/day) and sertraline (50-100 mg/day) is preferred. Despite the risk of hyponatremia in the elderly and medically ill, it is relatively safe to use. Improvement is expected after a few weeks.

V. INSOMNIA

- Benzodiazepines are the most commonly used sedatives/hypnotics. They are faster acting and hence preferred in medical settings. Oral or parenteral lorazepam (1-2 mg) may be used with caution in COVID-19 patients.
- Zolpidem (2.5- 5mg) is relatively safe in terms of respiratory functioning although levels are increased in patients taking ritonavir.
- Low dose antidepressants (e.g. amitriptyline 25 mg, trazodone 50 mg) or antipsychotics (quetiapine 25 mg, olanzapine 5 mg) are used sometimes as short-term hypnotic agents.

Table-1 Recommended drugs for acute psychiatric conditions in patients with COVID-19

Condition	Recommended drugs
Delirium	Haloperidol 2.5-5 mg PRN Olanzapine 5-10 mg PRN
Acute psychosis/mania	Risperidone 4-8 mg/day* Olanzapine 10-20 mg/day
Anxiety	For acute anxiety attacks Lorazepam 1-2 mg PRN
	For long term treatment of anxiety disorders Escitalopram 10-20 mg
Depressive disorder	Escitalopram 10 -20 mg/day Sertraline 50-100 mg/day
Insomnia	Lorazepam 1-2 mg PRN
	When benzodiazepine are contraindicated Zolpidem 2.5-5 mg PRN Amitriptyline 25 mg/day Trazadone 50 mg/day Quetiapine 25 mg/day

* Trihexyphenidyl may be added to prevent extrapyramidal symptoms

Conclusion It is expected that mental health issues are likely to increase significantly following COVID-19. The information provided in this chapter is envisaged to guide practitioners in safer use of psychotropics.

References

Jernigan MG, Kipp GM, Rather A, Jenkins MT, Chung AM (2013). Clinical implications and management of drug-drug interactions between antiretroviral agents and psychotropic medications. *Mental Health Clinician*; 2:274–85. <https://doi.org/10.9740/mhc.n139874>.

Omonuwa TS, Goforth HW, Preud’homme X, Krystal AD (2009). The Pharmacologic Management of Insomnia in Patients with HIV. *Journal of Clinical Sleep Medicine*, 2009;5:251–62.

Taylor DM, Barnes TR, Young AH. *The Maudsley Prescribing Guidelines in Psychiatry*. 13th Edition. John Wiley & Sons; 2018 May 14.

Thompson A, Silverman B, Dzung L, Treisman G (2006). Psychotropic Medications and HIV. *Clinical Infectious Diseases* 42:1305–10. <https://doi.org/10.1086/501454>.

Simple Psychological Strategies to deal with Common Mental Health Concerns in the wake of COVID-19

The current pandemic of a novel strain of Corona Virus (COVID-19), has affected several communities across numerous countries with far-reaching consequences. Individuals exposed to disease outbreaks, in addition to a direct impact (eg. strict control/quarantine), suffer indirect consequences (eg. loss of income), both of which can have mental health consequences. The specific mental health consequences of COVID-19 have been detailed separately in relevant sections. This chapter will detail the psychological techniques which can be used across various mental health issues presenting in communities exposed to disease outbreaks. The section has used simple language to ensure that given the strain on health-care resources, these strategies can be provided by any frontline worker.

The following aspects are addressed in this chapter:

1. Handling distress related to quarantine/isolation
2. Relaxation (Abdominal breathing)
3. Helping resolve grief
4. Helping people solve problems
5. How to 'break bad news'
6. How to handle angry and distressed persons

Techniques to 'break bad news' and 'handle angry persons' are especially useful for frontline personnel working with distressed people.

1. Handling distress related to quarantine /isolation

Social isolation is associated with significant psychological distress and can impact the functioning of the individual.

Steps:

- Validate the feelings of anxiety/stress and use a non-judgmental approach
- Check on the concerns related to quarantine /isolation (examples given below)
 - Fear about their own health and health of their loved ones
 - Stress of being monitored
 - Anger and frustration of being stigmatized
 - Guilt feelings about not being able to perform normal work
 - Worries about family members and their safety
- Allay the anxiety about health by providing reliable sources of information
- Advise them to be in touch with family members over the telephone and social media
- If they are being overwhelmed by the social media messages on the pandemic, advise them to take a break from the same
- Ask them to focus on keeping a routine for themselves while in isolation
- Encourage them to do physical exercises
- Ask them to pursue a hobby to keep themselves occupied
- Advise them to practice relaxations exercises namely meditation, abdominal breathing

2. Relaxation (Abdominal Breathing)

- Sit in a comfortable position on the ground or a chair.
- Remove your wallet, belt or other items (phones) from your shirts, trousers or dress.
- Relax your shoulders.
- Bring your hands to your lower belly with your two middle fingers touching the belly.
- Close your eyes now.

- Take a long, deep, gentle breath and send this long and deep breath down to your belly, so your stomach expands (keep your shoulders relaxed). You should find that your middle fingers naturally part slightly as the belly expands with the breath.
- Exhale or breathe out slowly. Now you can feel how the belly naturally draws inwards as the breath exits the body and the middle fingers slide to touch again.
- Do this abdominal breathing a minimum of 10 times (inhale and exhale slowly).

3. Handling Grief

Pandemics can cause tragic loss of lives. People may lose their family members, friends, and other loved ones. Things can be further aggravated owing to the inability to attend funerals, guilt regarding the inability to save etc.

Steps

- Acknowledge feelings of loss.

Tell them that you can't imagine how difficult it must be for them

- Allow them to express their emotions (crying, shock, disbelief)

If the person is crying or in shock, be with the person and do not interrupt them. Give them time to express their feelings.

- Allow them to talk about the loved person if possible.

Let the person express about the loved person if they are ready to speak.

- Ask them what they need

This needs to be done in a sensitive manner. This is to elicit the needs of the individuals going through grief

- Help them to connect with the persons who will support them

Ask them about the person who they would like to connect and provide the support for the same (would you like to call anyone now).

- Ask them what support they need for what happens next.

Persons might need to complete the procedures and will need support for the same.

- If you do not have answers for a question, acknowledge that you don't know what to say. Never give information you are not authorised to.
- If there are many members of a family and want time with each other, allow them the space to talk to each other.
- Provide them with the contact details of the person if they need to contact for any details.

It is useful to provide details of the contact persons of the settings whom they can contact if need be

- Each individual and families have different ways of grieving so do not judge.

Do not judge or impose your beliefs.

- Ask them to get in touch with mental health professionals, if emotional problems worsen.

Tell them that if they are persisting to feel highly distressed, have thoughts about harming themselves, they need to seek professional help

4. Helping people solve problems

Pandemics along with the infection also bring in a host of problems including social and economic challenges. Individuals might feel overwhelmed and may struggle to manage problems. Simple problem-solving strategies described below may be helpful.

Steps

- Introduce problem-solving techniques as a way to find solutions by themselves with some support
- Ask the person to identify their problems and amongst them the most bothersome problem.
- Once identified, ask the person to list out all possible solutions
- Help them to choose one or two appropriate solutions and ask them to try out
- Make an appointment for the next visit where they can share the experience of trying these solutions
- If the problems are unlikely to be resolved, help the person to recognise that the problem might not go away and the person needs to think of ways to reduce the problems

5. How to Break Bad News

This may involve communication about the death of a loved one to their family members, deterioration of health status, positive test result for COVID-19, suggesting quarantine and others.

- Before breaking bad news, confirm the information and study the details.
Ex: Breaking the news of the death of the father to the son in an ICU setting
- Prepare yourself to deliver the news.
- Be genuine and honest
- Rehearse in mind how to deliver the news.
- Have details of how the person might respond to bad news
- Choose the right setting to break the news
- Use simple sentences to deliver the news “I’m sorry to have to tell you this”. Don’t Overload with information
- Provide information in two or three simple sentences
- Allow the person to respond. The responses may vary from silence to anger. Be prepared to deal with all these emotions.
- Don’t be in a hurry. If the person is crying allow them to do so. If the person is angry (you sense signs of aggression, call for help). If the response is silence give them some time
- Provide emotional support until the person gains control
- Summarize, plan further support and revisit.

6. Handling angry and distressed persons

In these pandemic times, persons seeking treatment or their family members, anxious persons might become angry and distressed. Some of the strategies that can be used in these situations are-

- Keep a safe distance, about an arm length away from the person.
- Keep cool and maintain composure

- Don't respond until you assess the situation. Choosing not to respond could also be a strategy
- Call for help if you think someone will be hurt.
- When you start to talk, talk calmly in a non-confronting manner.
- Try to understand the aggressive behaviour
- Try to understand everything that the angry person tells and rephrase it back to him and bring focus on his anger.
- Use language like 'I understand why you would be upset and I see that you are very angry'
- Ask the person to suggest a non-violent solution for the problem.
- Suggest discussing the matter later in a calm and quiet situation

Conclusion

The psychological techniques described can be used to resolve many real-life situations experienced in many contexts following COVID-19. The steps are simple and can be used by front line personnel to resolve these situations.

References

- Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N et al. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*, 395(10227):912–20. Available from: [http://dx.doi.org/10.1016/S0140-6736\(20\)30460-8](http://dx.doi.org/10.1016/S0140-6736(20)30460-8)
- Casarett D, Kutner JS, Abrahm J (2001). Life after Death: A Practical Approach to Grief and Bereavement for the End-of-Life Care Consensus Panel. *Annals of Internal Medicine*;134:208–15. Available from: www.annals.org
- Chaturvedi SK, Chandra PS (2010). Breaking bad news-Issues important for psychiatrists. *Asian Journal of Psychiatry*, 3(2):87–9.
- Scanlon J, McMahon T (2011). Dealing with mass death in disasters and pandemics: Some key differences but many similarities. *Disaster Prevention and Management: An International Journal*, 20(2):172–85.
- Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health*.17(5).

Yoga and COVID-19: A New Role for an Ancient Science

Yoga is an ancient way of right living that is to live in harmony with oneself (body, emotion and intellect) and nature. According to yoga philosophy, the word 'hatha' comes from roots 'ha' which means the sun and 'tha' meaning the moon. Basically, all yogic practices aim at aligning an individuals' bio-rhythm with that of nature, thereby improving overall health. Yoga advocates a lifestyle based on the principles of '*yamas*' and '*niyamas*' which are fundamental ethical precepts. There are five *yamas*: truth, non-violence, moderation in activities, non-stealing & non-hoarding; and five *niyamas*: cleanliness, contentment, austerity, self-introspection and surrender to a higher principle in life, respectively. Apart from these behavioural components, yoga lifestyle also involves practice of physical postures (*asanas*), breath regulation (*pranayama*), control of senses (*pratyahara*) and meditative techniques (*dharana*, *dhyana* and *samadhi*).

The COVID-19 pandemic has caused significant psychological distress worldwide. A meta-analysis of 300 studies by Segerstrom & Miller, reported an inverse relationship between psychological stress and parameters of the immune system in human participant. Yoga based lifestyle appears to be a suitable strategy for enhancing wellness in these unusual times where there is reduced physical activity and increased emotional distress. In addition, a number of studies have demonstrated usefulness of yoga-based lifestyle modification in improving disease-related outcomes in common non-communicable disorders such as type 2 diabetes and hypertension, which also contribute towards mortality related to COVID-19 infection. Yoga-derived breathing and postures have also been reported to improve gas exchange in patients with cardiac disorders and in participants exposed to high-altitude hypoxia. Yoga practices have also been used for increasing oxygenation in patients suffering from chronic obstructive pulmonary diseases. These techniques may also be useful for COVID-19 patients as the primary organ system affected is the respiratory system.

During the current period of lockdown due to COVID-19 pandemic, the NIMHANS Integrated Centre for Yoga (NICY) has initiated online yoga sessions (tele-yoga). A literature search (of both ancient yogic texts and modern scientific research) and opinion of experts in the field of yoga therapy was combined to design a 40-minute yoga module which primarily aims to reduce psychological stress,

enhance lung functions and strengthen immunity. The module was developed in such a way that religion or faith-based practices and those which involve lying down have been excluded; this increases the feasibility and acceptability of the module. Most of the practices can be performed while sitting on a chair.

The yoga module starts with warm-up practices which involve coordination of body and breath. This is followed by breath regulation: 'sectional breathing' practice which involves holding the breath after complete inhalation (which may help gas exchange by stretching the alveoli of the lungs). This is followed by a sequence of fast breathing followed by slower breathing practices to ensure balance in autonomic activity. The module ends with the practice of *Nadanusandhana* (sound resonance) that involves chanting sounds of A, U and M and feeling their resonance in different parts of the body.

In the last week, more than 1000 people who are confined to their home due to the current lockdown have participated in the tele-yoga sessions conducted by NICY. The participants have been logging in for the sessions scheduled at either 7 am or 11 am, five days a week, according to their convenience. All necessary precautions are being given before each practice. The module has been found feasible across all age groups, in both genders, with no major side effects. We recommend that it should be practiced on an empty stomach (3-4 hours after a full meal and 2 hours after snacks).

Details of the 40-minute tele-yoga module for improving mental and physical well-being

A. Breathing techniques - Sitting Position (*Prānāyāma*; total of around 30 minutes)

- i. Hands in and out breathing (Figure 2): Breath in and spread your hands wide; breath out and close. Synchronize hand movements with your breath. Perform 10 rounds.
- ii. Hand-stretch breathing (Figure 3): Interlock your fingers and keep them on your chest. Breath in stretch the hands out with keeping the fingers interlocked, breath-out and come back. Do the same practice again at 135 degrees and 180 degrees above the head. Repeat each for 10 counts.
- iii. *Vibhagiya pranayama* (Sectional or Square breathing; 3:3:3:3): Deep breathing with awareness on the natural respiratory movements of the lower, middle and upper chest. Inhale deeply for 3 counts, hold the breath for 3 counts. Now, slowly exhale or 3 counts and retain emptiness of breath for 3 counts. Repeat this cycle for 9 rounds.
- iv. *Kapalabhati* Breathing (Skull shining breath): Flapping of abdomen with active exhalation and passive inhalation (those with blocked nose should perform with mouth wide open); 80-120 strokes per minute for 2 minutes followed by gap of 1 minute and repeat the cycle one more time.
- v. *Bhastrika* Breathing (Bellows breath): Forceful and rapid inhalation and exhalation. This has to be practiced for 3 cycles, each of 20 strokes. One inhalation and exhalation make one stroke. 20 strokes followed by gap of 30 seconds.

- vi. *Nadishuddhi* (Alternate nostril breathing): Inhale slowly from left nostril, exhale from right; then inhale from right and exhale from left. This makes 1 cycle: 9 cycles.
- vii. *Ujjayi* breathing (Victorious breath): Inhale and exhale deeply while constricting your throat such that a sound of friction of air in the throat region is heard during inhalation as well as exhalation. Try to make exhalation longer than the inhalation. Repeat this for 9 rounds
- viii. *Bhramari* (Humming bee breath): Inhale deeply, keep the mouth closed, gently touch the tip of the tongue to the upper palate and produce humming sound. Try to make exhalation longer than the inhalation. Repeat this for 9 rounds. Keep the eye closed during the practice and feel the vibrations in the head region. 9 rounds 1 cycle.

B. Relaxation (around 10 minutes):

- i. *Nadanusandhana*: Relaxing the joints and muscles consciously from toes to head with chanting of the sounds: AAA (with awareness on chest), UUU (awareness on neck region) and MMM (awareness on head region) - 5 rounds each sound (5 minutes)
- ii. Silence with awareness of the present moment (listening to the neutral sounds in surrounding without judging) (1 minute)
- iii. Positive resolve in the mind: “I am completely healthy, we are all connected, we are in harmony with nature” (1 minute).

The video of the above yoga module is available on the NICY website (<https://nimhansyoga.in/>) and YouTube <https://www.youtube.com/watch?v=qsK7SAfajoM>.

We strongly recommend that the practices should be performed under the supervision of a trained yoga instructor or strictly following the instructions in the video to derive maximum benefit and avoid adverse effects.

Conclusion

Yogic practices aim at aligning an individuals' bio-rhythm with that of nature, thereby improving overall health. Yoga based lifestyle appears to be a suitable strategy for enhancing wellness in these unusual times where there is reduced physical activity and increased emotional distress. Further, regular practice of yoga has been shown to boost immunity, improve lung capacity and ensure stabilisation of diabetic and hypertension status. The online yoga sessions initiated by NIMHANS (<https://nimhansyoga.in/>) incorporates the best practices in this regard.

References

- Cramer H, Lauche R, Dobos G (2014). Characteristics of randomized controlled trials of yoga: A bibliometric analysis. *BMC Complementary and Alternative Medicine*, 14(1), 328.
- Iyengar BKS (1996). Light on the Yoga Sutras of Patanjali. *Philosophy East and West*, 46(2), 291. <https://doi.org/10.2307/1399412>
- Pomidori L, Campigotto F, Amatya TM, Bernardi L, Cogo A (2009). Efficacy and tolerability of yoga breathing in patients with chronic obstructive pulmonary disease: A pilot study. *Journal of Cardiopulmonary Rehabilitation and Prevention*, 29(2), 133–137
- Seegerstrom SC, Miller GE (2004). Psychological stress and the human immune system: A meta-analytic study of 30 years of inquiry. *Psychological Bulletin*, 130(4), 601–630. <https://doi.org/10.1037/0033-2909.130.4.601>

Use of Digital Platforms in Training and Support - COVID-19 & Beyond

Introduction

The lockdown in response to COVID-19 has meant travel restriction, school closures, and recommendations not to gather in large groups. To overcome this there has been an exponential demand in digital-enabled learning and support. There are many digital tools used for training as well as support. This whole domain is dynamic and evolving. The following chapter is based on the tools and practices used in building capacity by using the Virtual Knowledge Network ECHO model of NIMHANS Digital Academy. In the references section, one can find important articles in this area.

This chapter below has two parts

1. Training perspective: Educator or trainer
2. Support perspective: Health seeker (patient, relatives)

1. Training perspective: Digital Platform

There are two main components of knowledge delivery and skill transfer.

Synchronous/ Realtime	<i>Synchronous e-learning</i> , commonly supported by media such as videoconferencing and chat, has the potential to support learners in the development of learning communities. Learners and teachers experience synchronous e-learning as more social and avoid frustration by asking and answering questions in real-time
Asynchronous/ Anytime	<i>Asynchronous e-learning</i> , commonly facilitated by media such as e-mail and discussion boards, supports work relations among learners and with teachers, even when participants cannot be online at the same time. It is thus a key component of flexible e-learning. Many people take online courses <i>because</i> of their asynchronous nature, combining education with work, family, and other commitments.

A. Synchronous: The most common and widely used is the multipoint videoconferencing. Video conferencing is a highly convenient use of technology that allows users in different locations to hold face-to-face meetings. This can be used to disseminate the information to frontline health care providers and communities about the best practices on COVID-19 as a tele-education (one to many) (Figure 1) or telemedicine (one to one). These are hosted in the cloud and easily accessible by any internet-enabled device, including the smartphone.



Fig 1. Remote Community Health providers (spokes) joining with NIMHANS Experts (Hub) team by both mobile app and PCs.

Table 1 shows the common digital educational tools and their features which can be helpful to fulfil the objective of synchronous training.

Table 1: Common Digital Education tools for synchronous training⁴

Features	Zoom	Skype	Google Hangout	Go To Meeting
Education friendly	YES	YES	YES	YES
Whiteboard	YES	No	No	YES
App-based (Android and iOS)	YES	YES	YES	YES
File sharing	YES	No	YES	No
Tele-education (one to many)	YES	YES	YES	YES
Tele-medicine (one to one)	YES	YES	YES	YES
Maximum participants	Upto 300 (Pro version) & upto 100 (free version) for 40 min	Upto 50	Upto 250	Upto 250
Cost	Free for 40 min (Basic) for 100 participants. Paid version can handle upto 100-300 participants	Free for basic	Need to have G suite account	Not free
HIPAA compliance	Yes	No	No	No
Polling questions	YES	No	No	No
Chat	YES	YES	YES	YES
Slide/Screen Share	YES	YES	YES	YES
Audio calls	YES (toll-free number)	YES (toll-free number)	YES (toll-free number)	YES (toll-free number)
Recordings	YES	YES	YES	YES
Social Media Integration	YES	YES	YES	YES
Cloud Storage	YES	YES	YES	YES

B. Asynchronous: A cloud-based learning management solution can be used for e-learning purposes. The application could be accessed anytime from a desktop or mobile device. The objective was to engage the health care providers in the learning process and consolidation of the knowledge and skills about emerging investigation and treatment of COVID-19 worldwide. Table 2 shows the commonly used digital tools for asynchronous training at Virtual Knowledge Network, NIMHANS Digital Academy.

Table 2: Digital educational tools for ongoing support via asynchronous platform ^{5,6}

Name	Brands	Comments
E-learning: Learning Management Solution	Google Classroom TalentLMS Edmodo Blackboard	Real-time feedback, self-assessments, simple interface, extended time for completion, and topic relevance
Multimedia :Video/Diagram/pictures	Screencast O Matic Snagit Camtasia Infographia Flipbook	Enhance the quality of training Ideally less than 15minutes
Audience Participation	Slido Mentimeter	In-classroom participation and encourage group problem solving Anonymity helps in engagement without fear
Response collections/ Health records/Assignment	Jotform (HIPPA compliant) Google form	For patient data collections, HIPPA compliance is advised
Text message/Whatsapp	Connecting learner	One of the cheapest solution to keep the group united

2. Support for Health seeker: Patient or caregiver

Technology can play an important role to make authentic information available to patients or caregivers.

The following table shows the common platform for the Patient or caregiver. (Table 3)

Table 3: Digital tools for the patient

Source	Goal
Website/blogs	Health information
Online formal education	Goal-directed, specific education ex: COVID-19 learning certificate WHO https://www.who.int/emergencies/diseases/novel-coronavirus-2019/training/online-training
Support/chat group	Socialization and Networking
Social media	Easy and convenient
Selfcare or self-assessment and Decision making	App and bots

Figure 4: Step-based approach to develop a digital Training platform

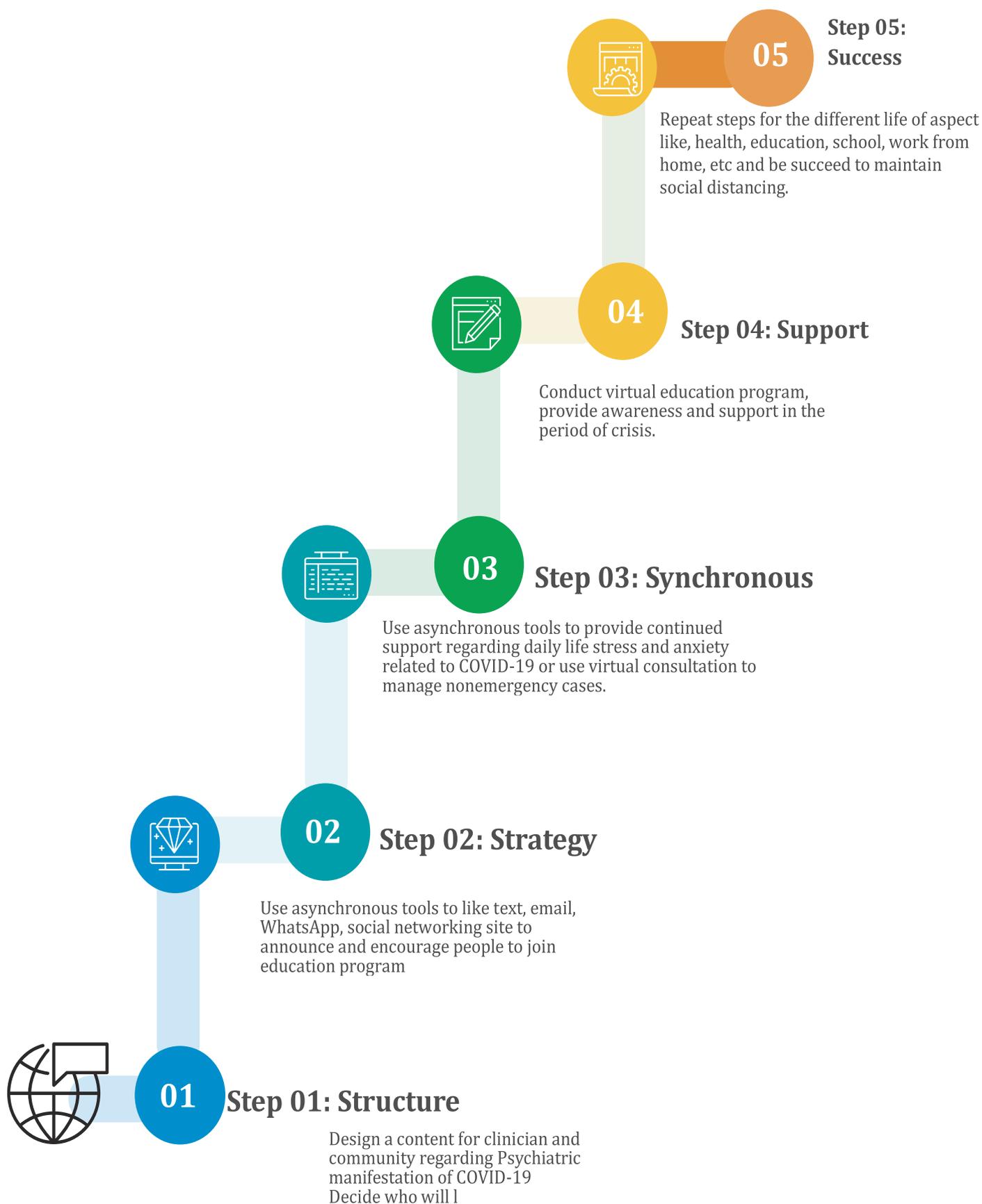
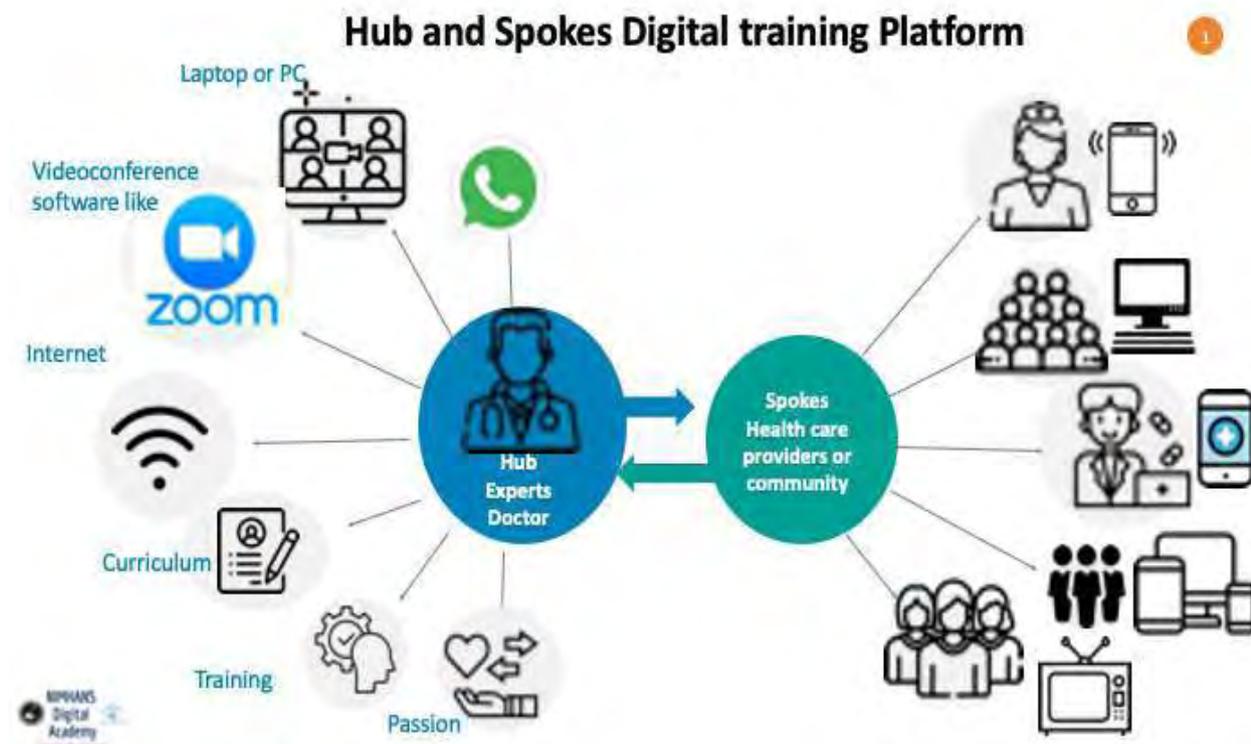


Figure 5: A low-cost model of Digital Training platform



Conclusion

Delivering training and support through technology has many benefits. The digital platform is helpful to experts in providing training, mentoring, and dissemination of knowledge. The structure and a low cost model are mentioned in figure 4 and figure 5. The patient/caregiver can use updated web-based factual information to follow best practices. Hence the technology can be a great enabler in this COVID-19 epidemic.

References

- Bairy BK, Ganesh A, Govindraj D, Chand PK (2019). Role of digital learning in addiction psychiatry. *Digital Psychiatry*, 2(1):25-33.
- Hilty DM, DeJong S (2018). *Putting technologies used for clinical care and education in context*: Springer.
- Hrastinski S (2008). Asynchronous and synchronous e-learning. *Educause quarterly*, 31(4):51-55.
- Mehrotra K, Chand P, Bandawar M, Rao Sagi M, Kaur S, G A, Raj A et al. (2018). Effectiveness of NIMHANS ECHO blended tele-mentoring model on Integrated Mental Health and Addiction for counsellors in rural and underserved districts of Chhattisgarh, India. *Asian Journal of psychiatry* 36:123-127.
- Sagi MR, Aurobind G, Chand P, Ashfak A, Karthick C, Kubenthiran N et al. (2018). Innovative telementoring for addiction management for remote primary care physicians: A feasibility study. *Indian Journal of Psychiatry*, 60(4):461-466.

PART B

COVID-19

Recalibrating Specialist Mental Health Services

B1

Protective Measures in Psychiatric Hospitals

This document provides information on the protective measures to be followed in mental health institutions during the COVID-19 outbreak. Since COVID-19 is a contagious illness, it is better to presume that every person has the suspected infection, especially under the following circumstances:

- ❖ Clinical symptoms of illness (e.g.- fever with cough).
- ❖ History of contact with an affected person
- ❖ History of travel to an area where the disease has had a breakout

Every mental healthcare facility is a potential source of transmission as patients who have active infection may come in contact with asymptomatic individuals. Therefore, a mental health professional (MHP) has to be up-to-date about the illness from reliable sources such as healthcare administration, experts or government websites. Depending on the infectious agent, the modes of transmission could be either via blood, bodily fluids, vectors, food, fomites, through air or droplet/aerosol transmissions, including spreading through multiple routes. In the case of COVID-19, the current consensus is that transmission is person to person through small droplets or from surface contamination. As there is no effective treatment, the principles of prevention need to be strictly enforced, in the form of social distancing [stay more than 1 meter (3 feet)] and high standard of personal and surface sanitation.

This chapter aims to address practical aspects to reduce risk in a busy out-patient psychiatric practice and in-patient settings with low-resources.

Out-Patient Services

The MHP needs to consider the following:

1. If possible, patients to be seen on an appointment basis. Out-patient appointments should be staggered. This helps to prevent over-crowding

2. Post visual alerts (in appropriate languages) in the clinics/ examination rooms instructing patients and escorts (e.g., family, friends) to notify health care personnel of COVID-19 symptoms or risk.
3. Principle of only “one-attendant-per-patient” to be enforced
4. Social distancing (at least 1metre or more) should be practised as much as possible in the waiting halls, and consultation rooms.
5. At the point of intake, assessment of COVID-19 risk may be done using ICMR-COVID-19 screen. High-risk patients/bystanders to be triaged at this point. (Use ICMR –COVID-19 screen to assess risk -Score of ≥ 4 indicates high risk (See Annexure)
6. Assessment of patients with a higher risk of COVID-19 to be in the exclusive room allocated for the purpose. The room needs to be sufficiently ventilated
7. Provide face masks to symptomatic patients to prevent the spread of infection through cough and sneezing.
8. Violent or disturbed patients should be examined separately or in a separate room identified for the purpose to prevent contact with other patients'.
9. Special attention to ensure vulnerable populations are seen early - elderly, pregnant, children, and those with pre-existing medical conditions.
10. OP assessments should be focussed on relevant history and examination, and a quick management plan to be derived. Detailed assessment can be done after the crisis has been averted.
11. To explore telepsychiatry options, especially for patients who are stable and require only a repeat prescription. (See section on Telepsychiatry)
12. Consider giving a repeat prescription for a longer time. This helps to reduce contact-time and reduces the frequency of visits to the MHP
13. Hand washing as per the WHO recommendations i.e. for 15-20 seconds with all 8 steps using soap & water/sanitizer should be practised. Hand-washing must be followed in these situations:
 - Before touching a patient
 - After a procedure involving exposure risk to body fluids
 - After physical examination

- As part of safe injection practices
- Before medication preparation
- After touching the patient's objects/surroundings.

In-Patient Services

There are three main likely sources of COVID-19 infections within in-patient settings in psychiatric institutions:

1. Visitors
2. Health care professionals
3. Patients.

So, in addition to improving general sanitation for infection control, restrictions to sources of infections can be preventive.

These aspects are being discussed in detail below:

1. Enhanced cleaning:

- Cleaning should be ideally every 4 hours or as frequently as possible.
- Cleaning should follow recommended standards with floor mopping with soap water, normal water, and 1% hypochlorite solution (or bleach).
- Surfaces (table, chair) needs to be cleaned with disinfectant having at least 60% alcohol
- Dining areas to be cleaned before and after food is served.

2. Restrict Visitors:

- Restricted to the essential individuals
- Allow access only to the visitors' area.
- Provide with a mask
- Hand sanitizer with soap and water as recommended before entering the ward (Visit WHO site for handwashing techniques).

- Not to be permitted if
 - having signs and symptoms of Upper respiratory tract infections
 - having a temperature $\geq 100^\circ$ F
 - history of international travel or COVID-19 hot spot area in the past 14 days
 - contact history with an international traveller in the past 14 days
 - known or suspected of having COVID-19 positive status

3. Health care professionals

- Ensure nursing care by identified staff with decreased staff rotation
- Staff to be trained in hand hygiene/cough etiquette
- Hand hygiene to be ensured before entering/leaving unit, in addition to activities related to patient care
- Staff to be provided a mask
- Pre-screening of staff for fever before the shift. If having features of infection, ensure exclusion from duty

4. Patients

- Restrict admissions
- Only one-bystander per patient who has no risk of COVID-19 or no features of COVID-19 infections
- Review whether stable patients can be discharged
- Ensure patients who are older and those with medical comorbidities are placed in less crowded areas
- Create an isolation ward within the long-stay facility.
 - Any patient having signs and symptoms of URTI to be transferred to the isolation ward

- Provide food separately
- Restrict interactions with other patients
- If symptoms worsen or develop other features of suspected COVID-19, shift to the nearest testing centre
- Teach all the patients' regarding social distancing
- Teach all the patients' regarding hand hygiene
- Encourage to greet by NAMASTE rather than handshaking.
- Monitor body temperature of long-stay patients at least once in a day
- No group interventions to be conducted in the ward.
- To ensure the dining area is less crowded, provide foods over a staggered period
- If any patient is tested COVID-19 +ve, inform health authorities and follow instructions.

Personal Protection Equipment & Sanitation

The use of Personal Protective Equipment (e.g. gloves, gowns, masks, goggles, visors, etc.) and enhanced sanitation measures should be employed as per prevailing recommendations for COVID-19. *The current guidelines for PPE and sanitation are reviewed in a separate section in this document and needs to be complied as far as possible.*

Conclusion

In any infectious disease outbreak including COVID-19, psychiatric patients have an enhanced risk of infection and poor outcome. Steps must be taken in the background of COVID-19 to reduce risk among patients and staff in psychiatric settings.

References

Indian Psychiatric Society: COVID-19 General-Advisory | Indian Psychiatric Society. <https://indianpsychiatricsociety.org/indian-psychiatric-society-COVID-19-general-advisory/>. Accessed April 4, 2020.

World Health Organization (2020). Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020. World Health Organization.

Practice Guidance for COVID-19. <https://www.psychiatry.org/psychiatrists/COVID-19-coronavirus/practice-guidance-for-COVID-19>. Accessed April 4, 2020.

Xiang YT, Zhao YJ, Liu ZH, Li XH, Zhao N, Cheung T (2020). The COVID-19 outbreak and psychiatric hospitals in China: managing challenges through mental health service reform. *International Journal of Biological Sciences*, 16(10):1741-1744. doi:10.7150/ijbs.45072

Yao H, Chen J-H, Xu Y-F (2020) Patients with mental health disorders in the COVID-19 epidemic. *The lancet Psychiatry*, 7(4):e21. doi:10.1016/S2215-0366(20)30090-0

Recalibrating District Mental Health Programs' During COVID-19 Pandemic

In March 2020, the World Health Organization (WHO) declared COVID-19 as a pandemic. The mental health impact of COVID-19 is widespread with every stratum of the society affected. The WHO recommends that the additional mental health support is best provided along with the general health services, by harnessing the existing structures/resources in the community. The DMHP provides community mental health services in over 600 districts in India. Given this, the DMHP becomes the most appropriate vehicle to deliver mental health care to local communities. In addition to clinical services, existing DMHP teams are involved in training and capacity building activities.

It is in this context that this chapter discusses two aspects-

- Steps to be taken by DMHP teams to ensure greater safety of patients/medical professionals utilising clinical services through camps during infectious outbreaks
- Strategies to optimize DMHP output to tackle mental health issues in the community

Steps to protect patients and health personnel utilising clinical services in DMHP

In times of pandemic like COVID-19, the public health system will be under tremendous stress responding to the overwhelming needs of the communities. At the same time, it is also a necessity to take precautions to minimize person to person contact to protect patients and healthcare personnel. Simple steps that can be easily followed in DMHP out-patient departments (OPD) are

1. **General fever screening for all patients who seek psychiatry consultations:** This screening can be done by the PHC nurse or DMHP nurse and should be completed as soon as the patient enters the OPD. Those with symptoms of fever and/or upper respiratory infections can be sent for evaluation of fever on a priority basis in addition to the quick management of psychiatric problems. These patients can be seen earlier.

2. **Segregate patients into**
 - a. *Those who have come for only repeat prescriptions:* Arguably, in any DMHP OPD, this group will form the largest proportion. This group can be easily and quickly dispersed by giving repeat prescriptions. Probably, a nurse can complete this job in a short period.
 - b. *Those who would want more time to consult doctors:* these are the ones who will take more time and can be dealt with accordingly.
3. **Personal Protective Equipment (PPEs) and hand hygiene of the place:** Of course, PPEs are reprimed commodities during pandemics such as these, but the least minimum things such as 3 layered face masks, provision of soap and running water and sanitizers should be made available in the clinics.
4. **Social distancing:** Patients and all the other people can be made to adhere to social distancing norms, by reducing the crowd and maintaining adequate distance between each other.
5. **General Health Education to patients:** can be done by the nurses or any other mental health professionals about
 - (a) correct ways and frequency of handwashing
 - (b) maintaining social distance
 - (c) correct ways while coughing and sneezing
 - (d) importance of staying indoors
 - (d) avoid crowding
 - (e) avoid touching eyes, nose and mouth

STRATEGIES

1. ***Provision of Mental Health services to the COVID-19 affected/suspected individuals***
 - a. Integration of mental health services and activities into the existing community strategies, community outreach, case identification, contact tracing as well as care provision activities at the health care facilities and the quarantine sites.
 - b. The services can be carried out even at the Primary Health Centre level.
 - c. Identification and addressing the mental health and well-being of the frontline workers like Health Care workers, case identifiers and other volunteers.

2. ***Improve the coordination of DMHP team*** and other working Government agencies and mandatory participation of the mental health team in all sectoral meetings

3. ***Reorganizing the existing DMHP services***

- a. Establishment of a clear inter-sectoral/agency referral pathway so that all the people with mental health care needs can be promptly directed to the DMHP team.
- b. Training the DMHP team members regarding the mental health issues during the emergencies especially in the context of COVID-19
- c. Training all ground-level health workers (PHC doctors, nurses, pharmacists, ANMs, ASHAs and others) about the mental health issues related to COVID-19 (how to identify and mitigate the mental health concerns)
- d. The DMHP team can train all the frontline workers including the nurses, ambulance drivers, volunteers, case identifiers, teachers and other community leaders including non-health workers in quarantine sites on essential psychosocial care principles, psychological first aid and how to make referrals through online platforms.
- e. Taking steps to ensure access to medication and daily care to the people with pre-existing mental health issues
- f. Adapting less conventional methods to continue support to people but minimise the risk of infection like usage of video, phone calls, social media

4. ***Building on local care structures***

- a. DMHP team can collaborate with other social and welfare programs, Educational, Governmental and Non-Governmental agencies and in places which lack these, to work with main sources of care like social groups, families and religious leaders and faith healers giving them knowledge of COVID-19, providing mental health support (how to mitigate symptoms and to know when to refer).
- b. Telephone hotlines are effective in supporting people in the community who are distressed or worried. DMHP team can train the Telephone hotline staff/volunteers and supervise in providing the mental health services in the context of COVID-19

5. ***Whole of Society approach***

- i. This approach addresses the mental health issues of the whole population irrespective of either direct or indirect contact with the virus. These activities include promoting self-care strategies, message to reduce relying on social media messages, normalization messages regarding the anxiety, worry of the people and clear and accurate information of COVID-19 including how to access help if one becomes unwell.

6. *Addressing the Mental health of frontline workers*

- i. DMHP team can provide access to all the psychosocial material for the workers involved in the COVID-19 outbreak emphasizing that it is of equal priority as physical safety. Regular review of the frontline workers' psychosocial status to identify risks, emerging issues and shape the response to their needs. For the frontline workers, taking adequate breaks and debriefing are as important.

7. *Development of toolkits/resources*

- a. The team can be involved in developing toolkits for all stakeholders including teachers, parents, and families including messages on preventing the spread of the disease like handwashing games and rhymes

8. *Addressing the mental health issues of people in home isolation/Quarantine*

- a. Members of the DMHP team can contact people in home isolation/Quarantine through telephonic calls/social media platforms once in 2-3 days and check for symptoms of anxiety, panic, depression in the people. If they have issues, to provide counselling over the phone.
- b. Checking for any past history of psychiatric illness/treatment and also any family members with a history of psychiatric illness and address if any issues.
- c. They can also help them in activities for well being during that period. Examples of some of the activities are
 - i. Physical Exercises (yoga/stretching)
 - ii. Relaxation exercises like breathing, meditation and mindfulness
 - iii. Reading books/magazines
 - iv. Reducing time spent looking at fearful images on TV, listening to rumours
 - v. Search information from reliable sources (decrease the time spent in looking for information related to COVID-19 to 1-2 times per day rather than every hour)

9. *Considerations for special populations*

- i. Older adults are particularly vulnerable to COVID-19 due to limited information sources, weaker immune systems, comorbid medical and mental health conditions such as cognitive decline/dementia. Provide information in an easily accessible way like clear, simple language by calling them over phones. If possible, encouraging the family members to call their older relatives, teach them to use video calls and preventive measures.

- ii. If children need to be isolated, then provide a safe and alternative environment and a team member like a social worker or an equivalent. Follow up with the child regularly. Ensure frequent contact via phone/video calls with family and provide reassurance. Engage children in activities which educate them about safeguarding like hand washing, imaginary stories /pictures of viruses which they can colour in fun games and explaining Personal Protective Equipment (PPE) so that they are not scared. Mobile phones, age-appropriate games, cartoons and age-appropriate movies, child-friendly videos, relaxation, periodic positive pep talks and prayers, etc can be allowed to engage children.

10. *Mental Health IEC activities*

- a. DMHP team can incorporate the COVID-19 specific mental health Information, Education and Communication (IEC) activities with the help of local sources like print/electronic media.
- b. IEC activities targeting general public dealing with stress
 - i. Conveying the message to the public that it is normal to feel sad, distressed, worried or scared during the time of crisis.
 - ii. To talk to family and friends and keep in touch with them through phone and social media platforms
 - iii. Not to use tobacco/alcohol to cope with their emotions.
 - iv. To seek for physical and mental health needs if required.
 - v. IEC activities should also address the social stigma and discrimination which can be associated with COVID-19, including towards persons who have been infected, their family members and health care and other frontline workers.
 - vi. The team can prepare FAQ on Mental Health, Mental Illness and COVID-19

11. *Leadership in the Team*

- i. All the health care workers in the team are stressed in this time of crisis. The team leader should make sure to have clear and open communication with all team members.
- ii. Communicating with the team members that feeling stressed is NOT a reflection of being weak or not able to do work.
- iii. Encourage to adapt the strategies that helped in coping with stress in the past
- iv. Rotation of the workers from high stress to low-stress functions.

12. Long term perspective

- a. Maintaining social contact with people who might be isolated using phone calls or text messages
- b. Sharing key factual messages within the community, especially with individuals who don't use social media
- c. Providing care and support to people who have been separated from their families and caregivers
- d. However, it is important to follow up and provide care for the people who are out of Home isolation/Quarantine and people who have lost their family members not only during the COVID-19 pandemic but also for the long term.
- e. Building the capacity of the health and non-health agencies will help in the preparation for future emergencies.

Conclusion

The DMHP has a critical role in the mental health response to the COVID-19 pandemic in India. Alongside it needs to recalibrate its existing services to reduce the risk for its service users and health care personnel.

References

- Inter-Agency Standing Committee, (2017). Reference group for mental health and psychosocial support in emergency settings. A common monitoring and evaluation framework for mental health and psychosocial support in emergency settings. Geneva: IASC.
- World Health Organization (WHO), (2005). Mental Health and Psychosocial Consideration in Pandemic Human Influenza. WHO.
- World Health Organization, (2013). Building back better: sustainable mental health care after emergencies. World Health Organization.
- World Health Organization, (2018). Occupational safety and health in public health emergencies: a manual for protecting health workers and responders.

Practical Steps in setting up Telepsychiatry Consultations in Infectious Outbreaks

In the background of the COVID-19 pandemic, the Government of India has issued guidelines that the patients may be discouraged to come to the hospital to ensure greater focus on more severely ill COVID-19 patients and also reduce the community spread of the pandemic. This has meant that many psychiatric patients who require help, may have reduced access to care, increasing the likelihood of relapse. However, advancements in digital communication (telepsychiatry) has meant that there are means to overcome this to a great extent.

This chapter aims to provide a step-wise strategy for **Telepsychiatry Video Consultation**. During the ongoing COVID-19 pandemic, it may be a safer alternative to provide infection-proof consultations from both the user (patients and their family) and the provider (psychiatrists).

What is telepsychiatry?

It means that patient care is provided by the psychiatrist to the service users employing digital technology.

Devices for Telepsychiatry Video Consultations (VC)

- Consultations must be simple, which means both the health care provider and the patients can handle it themselves.
- **Device at the psychiatrist's side:** It is recommended that the psychiatrist/medical professional use a desktop/laptop with an inbuilt or externally fitted camera/microphone. This would ensure better visibility on a wider screen. The laptop has an additional advantage of easy portability. If they are not available, a smart phone will suffice.

- **Device at patient's/family's side:** A smartphone is a popular choice with them.



Figure 1: Devices at both ends

Other technical aspects in telepsychiatry consultations

- Regular smartphones commonly have applications to connect for video consultations such as WhatsApp, Skype call, Google duo, etc.
- Recently launched **VoLTE (Voice over Long-Term Evolution) technology-based smartphones** are even better as they have a high-speed wireless communication for mobile phones. The inbuilt video conference software enhances the experience of the high definition video call.
- Make sure the software used for VC has at least **end-to-end encryption**. End-to-end encryption means only the health care provider and their patients or his/her family can visualize video/audio, and nobody else, including the service provider, has access.

Internet Speed for Video Consultations

- Any high speed/broadband internet/4G enable internet should be sufficient.

Skype recommendation of minimum internet speed for video call

- For simple video calling, 300 kbps (kilobits per second).
- For a high-quality video call, 500 kbps.

For High Definition video, at **least** 1.2 Mbps (Megabits per second) is required.

- Majority of the service providers can provide good quality speed with 1.5 Mbps

Modes of Telepsychiatry Video consultations that can be considered in COVID-19 outbreaks

A. Direct To Patient

- VC may be used for triage, screening, and to provide the first consultation with early follow-up.
- Aftercare: follow-up of already consulted patients. This is important in psychiatry to prevent possible relapse/recurrence of psychiatric disorders.
- Sub-clinical / milder illness: To provide reassurance or counselling or even brief psychotherapies.

B. Collaborative Video Consultations (CVC)

- It is VC to patients with some intermediary medical or paramedical staff at the patient's end. It means that the patient consults first the intermediary medical/para-medical staff, who in turn consults the Psychiatrist.
- CVC with other specialists/ family doctors/PCDs/nurses/ pharmacists

- C. Home Consultation:** Home Visit by a Nurse /Social Worker augmented with Tele-psychiatrist VC, especially during an emergency.

Scheduling Appointments of Telepsychiatry Video consultations

- It is a challenging issue in a disaster.
- Often, patients approach the treating medical professional for their follow-ups, and there is a mutual agreement to initiate telepsychiatry consultation.
- If the medical professional has planned follow-ups, it is better to remind them one or two days in advance by SMS, audio call etc. and agree mutually for a planned VC appointment. This is especially required in subjects with psychotic disorders or those with poor social support.

Consent / Privacy issue in providing Telepsychiatry Video Consultations

- Written Informed Consent should be taken in normal situations as there may be privacy concerns in VC.
- During emergencies, at least verbal consent should be obtained for VC.
- Specifically, mention that there would not be any video recording on either side, and the security of the videoconference/internet is dependent on the service provider's policy. Also mention the limitations of VC such as issues of having to make a clinical judgement after limited assessment,

not to be used in emergencies, physical examination remains virtual and the need to have in-person consultations if there is deterioration in mental state.

What to do in Telepsychiatry Video consultations

- Start with identifying yourself and ensure you verify the identity of the patient/family member.
- Take informed verbal consent and explain the limitations of VC
- Ensure that your clinical assessment is brief and to the point. Specifically, ask for any concerns including medication side-effects.
- Full physical examination (FPE) is the cornerstone of regular in-person medical consultations. This may not be possible in VC. Only, a partial physical examination which may be called '**virtual physical examination**' (VPE) (only the inspection part of the standard physical examination without palpation, percussion, and auscultation) can be conducted in video consultations. The principle of 'something is better than nothing' is applicable in VC.
- VPE can be used to assess the side effects of antipsychotics such as extra-pyramidal symptoms like tremors, slowness in gait, akathisia, dystonia, etc.

Prescription of Telepsychiatry Video consultations during infectious outbreaks

- There is no standard way to send a prescription to patients.
- During the current COVID-19 outbreak, a scanned copy of the regular prescription can be sent to the patient soon after VC.

Contraindications for Telepsychiatry Video consultations

- Research till date suggests that there are no contraindications for the regular assessment of any psychiatric patients through VC.

However, medical professionals should be aware that in the likelihood of medical emergencies or drug side effects, which require immediate interventions, they should immediately stop the VC and ensure referral to an emergency setting.

Advantage of VC during Infectious outbreaks

- Ensures continuity in care when there are general restrictions during the infectious outbreaks
- Less expensive

- Lesser risk for infections
- Telepsychiatry may be used for supportive counselling of people who are in quarantine both at hospital/home owing to suspected or confirmed COVID-19
- Greater satisfaction of patients and their families with VC in comparison to other means such as the audio/message-based consultations.
- Multiple members can join from various locations in the same multipoint video conference.

Ethical and legal aspects of Telepsychiatry Video Consultations

On 25th March 2020, the Medical Council of India released detailed documents with the title “Telemedicine Practice Guidelines- enabling registered medical practitioners to provide healthcare using Telemedicine” (<https://www.mohfw.gov.in/pdf/Telemedicine.pdf>) which permits medical practitioners to use telemedicine platforms legally. The document has numerous other details and is a useful and authentic resource for any telemedicine practitioner.

Conclusion

Telepsychiatry consultations need to be mainstreamed to ensure adequate care of patients with mental health issues during the current COVID-19 pandemic. Easy availability of digital platforms, even in rural areas, meaning that it is easily accessible.

References

- Das S, Manjunatha N, Kumar CN, Math SB, Thirthalli J (2019). _Tele-psychiatric aftercare clinic for the continuity of care: A pilot study from an academic hospital. *Asian Journal of Psychiatry*, 23;48:101886.
- Gowda GS, Kulkarni K, Bagewadi V, Rps S, Manjunatha BR, Shashidhara HN et al. (2018). _A study on collaborative telepsychiatric consultations to outpatients of district hospitals of Karnataka, India. *Asian Journal of Psychiatry*;37:161-166.
- Kulkarni K, Shyam RPS, Bagewadi VI, Gowda GS, Manjunatha BR, Shashidhara HN et al. A study of collaborative tele-psychiatric consultations for a rehabilitation centre managed by an Indian public primary health centre. *Indian Journal of Medical Research (Press)*
- Medical Council of India. Telemedicine Practice Guidelines- enabling registered medical practitioners to provide healthcare using Telemedicine. Released 25th March 2020. Available at <https://www.mohfw.gov.in/pdf/Telemedicine.pdf>
- Naskar S, Victor R, Das H, Nath K (2017). Telepsychiatry in India- Where do we stand? A comparative review between global and Indian telepsychiatry programs. *Indian Journal of Psychological Medicine*, 39:223-242.

Severe Mental Illness in Pandemics like COVID-19 Issues for Consideration

The current pandemic due to the novel Coronavirus (SARS-COV-2), COVID-19, has resulted in considerable stress to the health systems throughout the world. In both developed and developing countries, the health resources are prioritized to handle the pandemic. The immediate need to prepare for the pandemic results in the reallocation of all existing resources to the treatment of the ill and to stop the spread of the infection. Pandemics, like other natural disasters, negatively affect the mental health of the community in general and those with preexisting mental illness in particular. While natural disasters also result in significant stress and strain to the health systems, the relative non-involvement of other regions allows one to divert the health resources from other regions. However, in a global pandemic like the current COVID-19, each country and region has to handle the crisis locally. Hence, in a pandemic people with severe mental illness, who need long term, continued medical management and depend on the government services are disproportionately affected as a considerable proportion of resources on which the patients depend to survive are diverted for other causes. As the focus during a disaster is on stress and anxiety-related disorders, there needs to be literature on the specific needs of people with severe mental illness during pandemics. Considering that a considerable proportion of patients with severe mental illness require continued management even during a pandemic, strategies to continue the care need to be developed. Otherwise, disruption to or absence of access to care can have serious negative consequences in patients with severe mental illness.

Continued care of severe mental illness during a pandemic

A majority of psychoses typically need long term maintenance treatment even though the patient may achieve symptomatic remission after the acute stage. The risk of relapse is considerably high in severe mental illnesses schizophrenia and bipolar disorder if the medications are discontinued. In a limited resource setting with already stressed families, relapse/worsening of symptoms could have serious consequences. This would also add further strain the compromised health resources. Though, understandably, handling the pandemic takes precedence, it is very important to ensure that the maintenance treatment is not discontinued for pre-existing severe mental illnesses. Considering the

difficulties in providing psychosocial care to these patients during a pandemic due to logistic reasons the management needs to focus on the continuation of pharmacological treatment in the community. As the treatment plan will be standardized in a majority of the patients with severe mental illness, the critical factor in them is providing access to the medications. A strategy based on the principles of triage can be employed to classify patients into different groups; (a) those who need access to medications only (b) who need a consultation to continue management on an outpatient basis (c) who need management in a hospital facility.

- a) As mentioned above, a considerable proportion of patients with severe mental illness may not be able to afford the medications and may require support from the government services to access the medications. The community services in the form of the District mental health program (DMHP) can be effectively utilized to provide home delivery of the medications to the individuals. The treating clinician may also liaise with the nongovernmental organizations working in the field of mental health care delivery. Further, liaising with the other health delivery organizations or companies providing home-based treatment for other physical conditions can also be involved to supply the medications to the patients.
- b) Telemedicine and teleconsultation can be effectively utilized to provide continued care to those who need out-patient based consultations and treatment. This would minimize the potential cross-infection in a hospital setting and would be protective to both the patients and health care workers. With the formulation of new telemedicine guidelines by the Medical Council of India, one can effectively utilize available audio-video platforms to consult and also provide the prescription. In situations where a teleconsultation is required (scenarios where a healthcare worker or another physician needs specialist consultation), the resources in primary health care centers can be utilized. The nurse/primary care physician at primary care centers or DMHP team members can contact the treating psychiatrist and continue the medication. Strict adherence to telemedicine guidelines is required to ensure the privacy and confidentiality of the patients.
- c) A small proportion of patients may need care in the hospital due to the worsening of the illness or relapse of an episode. The social and economic stress of the pandemic in addition to the potential disruption of routine activities could increase the chance of relapse. This small proportion of patients may need a visit to the emergency room. The emergency rooms would need structural reorganizations so that they can be decongested and social distancing can be achieved. All patients need to be screened using a screening tool and those suspected of the infection or having the infection need to be triaged. In all cases, till proven negative for infection, it is advisable for health care workers to follow universal precautions to protect themselves. The support staff involved in physical restraint should have access to personal protective equipment (PPE) and be trained to use PPE. In scenarios where the patient is likely to have increased psychomotor activity and may not adhere to social distancing, one may have to consider physical restraint to maintain social distancing. To prevent prolonged physical restraint switching to chemical restraints to be considered as soon as possible. To prevent cross-infection it is also advisable to minimize the time that a patient spends in the emergency setting.

- d) A minority of patients who have a significant risk of harm to self or others may need electroconvulsive therapy. However, electroconvulsive therapy services need to be judiciously utilized considering the potential risks of cross-infection to the patient as well as health care workers during the procedure. The treating psychiatrist needs to liaise with the ECT services. Psychiatrists in the community may have to refer such patients to a higher center where ECT services with proper precautions can be administered. A case-based decision need to be taken for those who are resistant to pharmacological treatment and stable on maintenance ECT in liaison with the ECT services.

Issues to consider in the pharmacological treatment of a patient with severe mental illness during a pandemic

- If the pandemic and associated limitations in the movement are likely to prolong it could result in a disruption of the supply chain of medications. If a disruption in the supply chain is anticipated, it is advisable to switch the patients to long-acting injectable antipsychotics to minimize the risk of rapid withdrawal-like supersensitivity psychosis. It is also advisable to switch to a medication with a production facility and distribution within the country so that the continued supply is ensured.
- Sudden withdrawal of medications like benzodiazepines, antidepressants, and antiepileptics could result in withdrawal symptoms as well as complications. A majority of the patients with severe mental illness would need long term treatment with benzodiazepines and abrupt withdrawal need to be avoided as this could result in rebound anxiety and violence in the community. Depending on the regulatory restrictions of the state, one may not be able to give e-prescription of a benzodiazepine over telemedicine followup. Hence, if regulations do not permit, all patients on benzodiazepines are preferably advised for a consultation through a primary care nurse/physician or DMHP services. It is advisable to shift to a long-acting benzodiazepine/ antidepressant from a short-acting benzodiazepine/antidepressant.
- In patients who are on treatment with lithium, withholding the medication or adjusting the dose may have to be considered as a few patients with COVID-19 are at risk of developing renal failure. It is also important to remember that patients who are on treatment with lithium should not be given NSAIDs because of the potential risk of renal failure. Unmonitored lithium use enhances risk for toxicity. Teleconsultations or video consultations should specifically ask / look for any symptoms and signs of lithium toxicity and patients should be informed of some simple measures to avoid toxicity.
- A few studies, though preliminary, have suggested beneficial effects of antimalarial drugs hydroxychloroquine (HCQ) or chloroquine in the treatment of COVID-19 infection. Hence, several countries have recommended the use of HCQ in people with COVID-19 infection and prophylactically in those suspected of COVID-19 infection, their close relatives and health care workers. Though rare, HCQ can prolong the QT interval and precipitate arrhythmia As several

antipsychotics and a few antidepressants are also known to increase the QTc interval, one needs to consider the potential precipitation of arrhythmia in individuals taking psychotropics. In all patients with severe mental illness, it is advisable to do an electrocardiogram and calculate QTc (corrected QT) before prescribing HCQ. In selected scenarios, where HCQ has to be given, one may have to consider withholding the psychotropic or change the psychotropic. In case of change, one may consider shifting from antipsychotic drugs which increase QTc interval (ex: Amisulpride, Ziprasidone, Asenapine) to those which do not increase (ex: Lurasidone, aripiprazole). Among the antidepressants, SSRIs are safer compared to tricyclic antidepressants (ex: Amitriptyline, Imipramine).

Treatment of a patient with severe mental illness and COVID-19 infection

With the spread of the infection in the community, every individual will be at risk of contracting the infection/ However, patients with severe mental illness are possibly at higher risk of contracting the infection in comparison with the general population. Disorganization symptoms, homelessness may result in non-adherence to the social distancing or movement restriction. These factors along with the absence of stable income during the pandemic may place these patients in high-risk situations and contact with others. As patients may not have access to the education material regarding pandemic or unable to comprehend the same due to the illness-related cognitive deficits, one may consider devising simplified education material for patients with severe mental illness. It is important to educate even those patients who are admitted to the hospital to ensure adherence to protective maneuvers like social distancing. As a few patients with severe mental illness may have poor health-seeking behavior and absent insight into physical illness as well, a delay in the diagnosis of the infection is possible. Hence, people with severe mental illness need to be considered as a high-risk group for infection during a pandemic.

The following issues need to be considered when treating a patient with severe mental illness and coexisting COVID-19 infection. Considering the potential risk of agitation in an isolated environment, it is advisable to allow the patient to interact with the family member/caregiver using video/audio call whenever a patient with severe mental illness is under quarantine or admitted to a COVID-19 hospital. As knowledge accumulates, several new treatments are being tried for the treatment of COVID-19 infections. The psychiatrist can liaise with the treating team as one needs to consider the behavioral side effect profile of these medications and potential drug interactions with the ongoing psychotropic.

- The experience with the medications used for the treatment of the COVID-19 infection is minimal and evidence is sparse. In the absence of controlled trials, one needs to consider the risk-benefit ratio before starting a specific treatment for an individual with severe mental illness.
- Similarly, it is also important to be aware that the side effect profile of these newer medications is not known in patients with severe mental illness. Several medications used for the treatment of COVID-19, namely HCQ, ivermectin, and corticosteroids are reported to cause psychosis and mood disturbances. Hence one needs to be cautious when treating a patient with severe mental

illness and watch for these side effects. Suicidal ideation has also been reported with HCQ and one preferably avoids the same in patients with recent suicidal attempts.

Conclusion

In conclusion, considering the possible higher risk of contracting the infection, patients with severe mental illness requires special attention. Continuation of community-based treatment is essential to prevent relapse or worsening of the severe mental illness which can add additional burden to the stressed health infrastructure. Technology platforms need to be widely used for teleconsultations to achieve the same. Given the lack of knowledge base, a clinical decision need to be made and treatment for COVID-19 needs to be individualized in patients with severe mental illness. Drugs for COVID-19 need to be used judiciously after considering drug-drug interactions and serious side effects in the form of arrhythmias in a patient with severe mental illness.

References:

- Bogaczewicz J, Sobo'w T, Bogaczewicz A, et al (2014). Exacerbations of bipolar disorder triggered by chloroquine in systemic lupus erythematosus – a case report. *Lupus*; 23: 188–193.
- Brown AS, Meyer U (2018). Maternal Immune Activation and Neuropsychiatric Illness: A Translational Research Perspective. *American Journal of Psychiatry*, 175(11):1073–1083
- Good MI, Shader RI (1977). Behavioral toxicity and equivocal suicide associated with chloroquine and its derivatives. *American Journal of Psychiatry*, 134: 601–798.
- Hsu W, Chiu N, Huang S (2011). Hydroxychloroquine-induced acute psychosis in a systemic lupus erythematosus female. *Acta Neuropsychiatrica*, 23(6), 318-319.
- Ritchie EC, Ehret M, Peake NW, Richter KE (2019). When a disaster disrupts access to psychiatric medications: Advance planning can help minimize the risks of withdrawal, other consequences. *Current Psychiatry*, 18(5):22-7.

Rapid Tranquilization in Infectious Disease Outbreaks

Introduction

Rapid tranquilization (RT) is often used in clinical practice as a last resort to de-escalate acutely disturbed behavior after appropriate psychological and behavioral approaches have failed. RT has an added risk during an infectious outbreak given the risk of spread to staff and others. Mental health professionals are also encouraged to try all non-pharmacological de-escalation techniques (read the section on Aggressive Behavior). This should be followed by attempts to give oral medications. The decision of giving RT need to be taken after clear consideration of both risk and benefits, when all other strategies have failed. Mental health professionals need to ensure a written record in the patients' files.

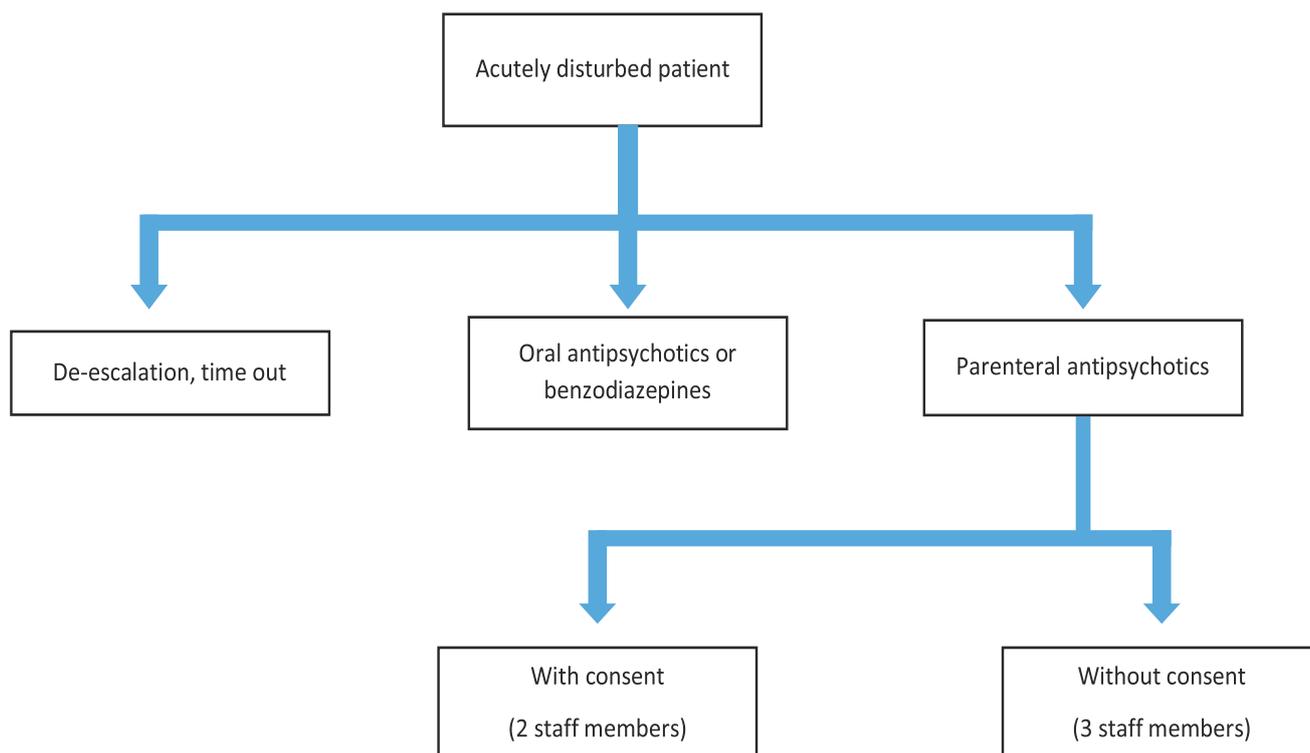
The recommendations here are based partly on research data and theoretical considerations, and partly on empirical experience.

Steps

1. Standard protocols should be followed for the management of acutely disturbed patient – drug selection, pretreatment investigations, etc. - as detailed elsewhere (Maudsley, 13th Edition)
2. Empirical recommendations specific to the management of COVID-19 patients
 - a. Personal protective equipment (PPE) should be worn as per the standard protocols wherever available
 - b. Not more than 2 (one nurse and one security) or 3 staff (one nurse and 2 security personnel) should be involved in RT to reduce the exposure to frontline workers.
 - c. Intramuscular (IM) is the preferred route of administration for RT compared to intravenous (IV) route

- d. Gluteal IM injections may be preferred over deltoid injections to increase the distance between respiratory secretion/droplet of the patient and the staff
- e. IM olanzapine has the following advantages over IM haloperidol
- Minimal effect on QT_c interval; as we are aware the medications used in the management of COVID-19 such as hydroxychloroquine and azithromycin are known to increase the QT_c interval
 - Possible cardiac injury by COVID-19 in some of the patients may be a risk factor for sudden cardiac death; systematic research is needed
 - No need for promethazine or lorazepam injections
 - Lesser risk for EPS
- *PS: IM olanzapine has been shown to cause respiratory depression; should be taken into consideration in a patient with COVID-19; start with a low dose (5 mg) of olanzapine and a maximum daily dose of IM olanzapine should be less than 15 mg. Benzodiazepines also carry the risk of respiratory depression. Whenever needed, a low dose of short-acting benzodiazepines such as lorazepam, midazolam should be used.
- f. Whenever IM haloperidol is used, start with a low dose (2.5 to 5 mg of haloperidol) along with 12.5 to 25 mg of IM promethazine. Maybe preferable to keep the maximum daily dose of IM/oral haloperidol to less than or equal to 15 mg/day.
- g. Should wait for at least 45 minutes before repeat RT
- h. Regular monitoring of vitals (blood pressure, respiratory rate, pulse rate) should be done once in 15–30 minutes
- i. Concurrently, where feasible, ECG and lab investigations need to be done to ascertain the electrolyte, blood sugar, renal function and other important parameters as per the emergency medicine guidelines
- j. If a patient develops dystonia secondary to parenteral antipsychotic, 25 mg, IM promethazine should be used.
- k. Avoid using multiple antipsychotics for RT

- l. Wherever possible informed consent should be obtained from the patient. Most often, the patient may not be in a clinical state to offer informed consent - for such circumstances, consent from a legal guardian or caregiver should be taken as done for minor intervention procedures.
- m. For doses of oral antipsychotics in the management of acutely disturbed patients kindly refer to The Maudsley Prescribing Guidelines in Psychiatry 13th Edition. Dose adjustment should be done for the elderly and children as suggested by Maudsley Prescribing Guidelines in Psychiatry 13th Edition



(Non-consenting patients are more likely to have poorer insight and more severe aggression. Hence it may be necessary to consider additional staff (2 security plus one nurse) for rapid tranquilization)

Conclusion

During infectious outbreaks including COVID-19, RT needs to be used as a last resort, with all recommended safety precautions for the patient and the staff.

Reference

Taylor DM, Barnes TR, Young AH (2018). The Maudsley Prescribing Guidelines in Psychiatry 13th Edition. John Wiley & Sons.

Electroconvulsive Therapy and Transcranial Magnetic Stimulation for Patients with Severe Mental Illness during the COVID-19 Pandemic

A. Electroconvulsive Therapy (ECT)

ECT with bag and mask ventilation and suction to clear secretion involves aerosol production. COVID-19 virus is known to be present in aerosols. The decision regarding ECT for patients should be taken based on the risk of community spread in the locality, available resources to protect patients from possible cross-contamination, protect healthcare personnel from infection with novel coronavirus and risk/benefit analysis of individual cases.

1. Screening for COVID-19:

- a. Only patients with ICMR screening score < 4 (please see annexure) should be taken up for ECT in the routine ECT suite.
 - i. This is not a foolproof method to establish the absence of COVID-19 infection. Ideally, personal protective equipment (PPE) should be worn in all cases during the period of the pandemic. However, this may lead to the utilization of precious PPEs for relatively low-risk indications. Hence, general safety precautions for COVID-19 have to be taken at all times during the administration of ECT:
 1. It has to be ensured that social distancing is practised in the waiting area as well as in the ECT administration and recovery area.
 2. Protective N95 mask, gloves and goggles should be worn by all professionals involved with the ECT procedure.
 3. Care should be taken by all professionals to avoid touching the face and mouth area at all times.

- ii. Use of ECTs should be minimized as much as possible. It may be used only as an emergency treatment when the risk of harm to self or harm to others is substantial. In addition to these, ECTs might also be indicated in case of a risk of violation of social distancing due to severe mental illness.
 - iii. It is best to avoid the use of ECT for 'elective' indications such as refractory conditions, maintenance/continuation ECT, etc. even if the score is less than 4 because a score of less than 4 does not guarantee COVID-19 negative status.
- b. If the score is 4 or more and the test results are still awaited, the ECTs must be deferred until the test results come negative. Until then, if ECT needs to be given, then the patient may be administered ECT with all standard precautions as detailed in the section on ECT in COVID-19 positive patient (below).
- 2. Administering ECT for patients with COVID-19:** ECTs should be administered in wards/operation theatres designated for COVID-19 positive patients.
- a. Patients who have significant respiratory symptoms: They might be deemed unfit for ECT by the anaesthetist.
 - b. Patients who have mild / no respiratory symptoms: In these cases, there is still a high risk of contamination. For this, the following precautions are required:
 - i. PPEs should be worn by all healthcare professionals involved in the procedure. Professionals involved in ECT administration should be kept at a bare minimum.
 - ii. Equipment used during the procedure should be handled as per the standard hospital infection control guidelines.

For example:

- Disposable equipment such as breathing circuit, reservoir bag, patient mask, gas sampling tubing should be discarded after use for each patient.
- All exposed surfaces including the railing cots should be cleaned with a detergent solution followed by a disinfectant (e.g., 1% sodium hypochlorite). After this, the surfaces should be wiped off with a wet disposable wipe since chloride solutions can damage surfaces.
- The ECT device with the electrodes can be cleaned using containing alcohol-based (e.g., 70% alcohol) solution.
- The linen used for the bed need not be cleaned separately; it can be washed in warm water and detergent along with the other laundry.

- iii. The team should foresee possible respiratory complications including tachypnea, prolonged apnea, hypoxia and desaturation, excessive secretions and be prepared to handle them. It should be remembered that any procedure which can induce coughing, such as suctioning of secretions, can potentially aerosolize the virus. Hence, proper safety measures should be ensured.

3. Changes in the ECT procedure:

- a. During the pandemic, since all ECTs are considered as 'emergency' treatments, clinicians may err on the side of efficacy at the cost of cognitive deficits.
- b. ECT with the highest likelihood of success - bilateral (bifrontal or bitemporal) ECTs with brief-pulse ECT - may be preferred to unilateral and ultra-brief-pulse ECT.
- c. To avoid the possibility of a failed seizure, particularly during the first session, ECT psychiatrists may err on the side of administering stimulus with a higher charge. E.g., 120 mC in relatively younger patients; 180 – 240 mC in those aged > 45 years. If patients are on antiepileptic medications, the charge may be adjusted keeping in mind possible higher threshold.
- d. During the pandemic, unless contraindicated, it is advisable to use anticholinergics to reduce secretion formation and aerosolization.

B. Transcranial Magnetic Stimulation (TMS)

- a. Transcranial Magnetic Stimulation (TMS) is a recommended treatment of depression with well-established safety and effectiveness profile.
- b. One clinical applicability of TMS in depression during the ongoing pandemic is when patients' general medical condition precludes the use of medications and ECT. For example, in elderly patients with recurrent medication-induced hyponatremia or severe cardiac failure, medications and ECTs may be contraindicated.
- c. In the present context, if individuals with COVID-19 infection present with severe depression and other medical comorbidities that prevent the use of antidepressant medications or ECTs, TMS may be considered as an alternative treatment option.
- d. To keep the treatment sessions short, 600 pulses (2s on; 8s off; total time 3min) of intermittent theta-burst stimulation (TBS) at 120% of resting motor threshold (RMT) delivered to the left dorsolateral prefrontal cortex, should be the first choice TMS protocol to be used.
- e. In settings where TBS is not available, low frequency (1Hz) continuous rTMS to the right dorsolateral prefrontal cortex at 120% RMT for 20-30min may be used.
- f. All necessary safety protocols (e.g., sanitization, personal protective equipment) should be used

by the health care professional before, during and after treatment delivery.

- g. Duration of treatment may be determined based on clinical judgment but ranges between 10-30 sessions. Routine screening for TMS adverse events and safety monitoring should be implemented.

Conclusion

Depending on the spread of the COVID-19 in the community, ECT may be associated with risk of infection to healthcare personnel and patients - potential of spread by asymptomatic carriers and aerosol-generating anesthetic procedure contribute to this risk. This calls for restriction of ECT for life-saving indications, judicious use of PPE & disinfection and thoughtful management of ECT staff. Further, measures should include erring towards efficacy of ECT at the cost of adverse effects, use of anticholinergics and setting different threshold for stopping ECT. TMS, with standard methods to avoid infection, may be an alternative antidepressant treatment when ECT cannot be administered

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References

- Colbert, SA, McCarron S, Ryan G, McLoughlin DM (2020). Images in Clinical ECT: Immediate impact of COVID-19 on ECT Practice. *The Journal of ECT*, Publish Ahead of Print. <https://doi.org/10.1097/YCT.0000000000000688>
- Espinoza RT, Kellner CH, McCall WV (2020). ECT: An Essential Medical Procedure. *The Journal of ECT*, Publish Ahead of Print. <https://doi.org/10.1097/YCT.0000000000000689>
- Tor PC, Phu AH. H, Koh, DSH, Mok YM (2020). ECT in a time of COVID-19. *The Journal of ECT*, Publish Ahead of Print. <https://doi.org/10.1097/YCT.0000000000000690>

Mental Health Rehabilitation in times of COVID-19

Introduction

Psychiatric rehabilitation is a gradual process of helping persons with psychiatric disability (PwPD) function optimally and achieve desired life goals. Rehabilitation helps PwPD in activity scheduling, gainful engagement, socialization, skills training, boost of self-confidence, symptom stabilization and achieving desired life goals. Desired life goals differ from person to person and include having friends, getting married, pursuing education or getting a job. Rehabilitation is an ongoing process which requires periodic supervision and monitoring of progress.

The ramifications of Covid19 pandemic has been felt across the world. Social distancing and lockdowns have resulted in the temporary closure of several services deemed 'non-essential'. Rehabilitation has been deemed as a non-essential service during the pandemic and many rehabilitation facilities, except residential centres, have been closed down. This section details the possible impact of closure of psychiatric rehabilitation facilities and measures to support users and their caregivers/family during the COVID-19 pandemic.

Impact of covid19 pandemic on psychiatric rehabilitation

The closure of rehabilitation facilities due to COVID-19 pandemic can have the following impacts

- Disturb the daily routines and functioning of PwPD.
- Loss of social connectedness & satisfaction - A PwPD may derive a lot of satisfaction in going to rehabilitation facility, chat with friends and work in vocational sections. Many get a sense of community at rehabilitation facility and feel that 'I am not alone'.
- Difficulties in adjusting to the disruption - boredom and frustration, worsening of psychiatric symptoms/relapse.
- Families need additional resources in caring for PwPD.

- Care-giver/family suffer increased stress (in addition to COVID-19 impact) and may suffer 'burn out'
- Increase in negative expressed emotions and domestic violence in family context
- Set-back in rehabilitation and loss of micro-gains (like PwPD getting up on time, taking up new responsibilities, contributing to family) which offers hope regarding long term prospects
- Economic impact likely to affect employment (current and prospective) options for PwPD

Role of Mental Health Professionals (MHP) and Rehabilitation Staff

- Provide accurate Information about COVID-19 and various precautions to prevent spread.
- PwPD and family need to be reassured that the rehabilitation facility will be reopened when the crisis is over and ongoing support will be provided by tele-consultations.
- Tele-consultation can be done by voice (telephone) or video calls (using popular applications like WhatsApp or Skype). It is necessary to explore as to how families are managing the crisis. Periodic tele-consultations can allay concerns, strengthen the rapport, ensure continuity of care and offer confidence to the PwPD and their families.
- Families to be encouraged to try out innovative solutions to keep clients engaged. Practical suggestions to keep the rehabilitation plan on track will be helpful.
- Medication adherence of some PwPD may have been monitored at the rehabilitation facility. In such cases, the family needs to ensure that medicines are provided on time. Dose adjustments may be required.
- Group meetings for family caregivers and PwPD using platforms like zoom can be considered. It can give a sense of community and help PwPD be in touch with their friends. Families and PwPD can share ideas to handle the situation. For some PwPD, it can also familiarize them to access technology.

Making a home based rehabilitation plan with family/PwPD

A home based rehabilitation plan should be jointly developed with PwPD, family, friends and MHPs. It may include the following :

- Ensure communication - Family members need to discuss with PwPD about his/her concern and address it.

- Provide reassurance - He/she may want reassurance that things will be better or need help to speak to employer or want some specific information about COVID-19 or just speak to the vocational instructor.
- Make PwPD feel wanted -Ensure that PwPD feels wanted at times of crisis. Simple interventions like asking for TV channel of his/her choice or cooking his/her favourite dish indicate the importance given to the PwPD.
- Help PwPD in being gainfully engaged
 - Figure out activities which may interest the PwPD - It may be leisure activities like listening to music, watching TV, reading a newspaper, playing games, drawing, painting, watering plants etc.
 - Family may involve PwPD in household work like cleaning home, fetching water, making tea etc.
 - If PwPD is not confident in handling money, families may encourage to handle money (withdraw money from ATM, pay the neighboring shopkeeper, check for change) under supervision and empower to independently carry out transactions.
 - It is possible that PwPD may not be interested in various responsibilities given. It is ok, they may be given their space. Let them pick and choose activities of their choice without constraints of time and productivity
 - **Families MUST appreciate the efforts. Families may even give an incentive or 'salary' to them.** Whatever be the contribution, the PwPD needs to be appreciated for their genuine efforts despite difficulties.
- Education - The PwPD pursuing education can use the opportunity to complete pending work and prepare for exams. A PwPD trying for employment can skill themselves with online courses.
- Employed -A PwPD who is employed may be apprehensive about salary or job. Family can help discuss with employer.
- Families to provide the PwPD a series of carefully planned steps in a supportive environment, appropriate to the stage of recovery. The family can discuss and seek support from MHPs about challenges faced.

What can families' do additionally?

- Spend quality time together and involve PwPD. This may include discussion about day to day affairs, about TV serials being telecast and making lists of groceries to be purchased.

- Normalise family routines as much as possible with family rituals like prayers, food together etc.
- Relive old memories –eg; take out an old photo album and rekindle memories.
- Encourage to get in touch with old friends and speak to them over voice or video calls. These activities will keep up enthusiasm of family and also improve social skills of PwPD.
- Make plans and provide hope – The family may want to plan a trip or visit to a religious place when lockdown is lifted, this will provide PwPD hope that things will 'normalize' in the near future.

Conclusion

These are uncertain times for everyone. It is time for us to be resourceful and ensure the rehabilitation process is on the track. We need to wait and watch as to when rehabilitation services can be restarted. It is darkest before dawn and better days await us.

References

Breckenridge J, Gupta A., Pandya A, Davar B, Kalathil J (2020). COVID-19 and Persons with Psychosocial Disabilities: A Joint Statement and Some Recommendations. <https://madinasia.org/2020/03/covid-19-and-persons-with-psychosocial-disabilities-a-joint-statement-and-some-recommendations/> last accessed on 2020, April 10

Chaturvedi SK. COVID-19, coronavirus and mental health rehabilitation at times of crisis. *Journal of Psychosocial Rehabilitation in Mental Health* <https://doi.org/10.1007/s40737-020-00162-z>

Coaston J (2020, April 9). “We're being punished again”: How people with intellectual disabilities are experiencing the pandemic, retrieved from <https://www.vox.com/2020/4/6/21200257/disabilities-coronavirus-group-homes-isolation-policy> last accessed on 2020, April 10

Mental health and psychosocial considerations during the COVID-19 outbreak (2020): WHO/2019-nCoV/MentalHealth/2020.1. <https://www.who.int/publications-detail/mental-health-and-psychosocial-considerations-during-the-covid-19-outbreak> last accessed on 2020, April 10

Psychiatric Rehabilitation services, NIMHANS. FAQ's in Psychiatric rehabilitation. Pamphlet.

Psychiatry Research & COVID-19 Pandemic

“ In the midst of every crisis, lies great opportunity “

- Albert Einstein

The COVID-19 global pandemic which poses one of the greatest challenges faced by humankind in the modern era offers great opportunities as well, for professionals in various fields of science to understand the effects of such a global crisis on the respective fields and improve preparedness for future exigencies.

COVID-19 & Psychiatric Disorders

Viral infections have been associated with increased risk for certain psychiatric disorders like schizophrenia, depression, autism and several others. Coronaviruses (including COVID-19), especially due to their neuro-invasiveness as well as the potential for feto-maternal transmission, have the potential to enhance the risk for psychiatric disorders. Contextually, it is noteworthy that sudden acute respiratory syndrome (SARS) due to the earlier coronavirus was associated with acute psychosis. Besides, the psychosocial stressors associated with the pandemic of COVID-19 have the propensity to precipitate new-onset psychiatric disorders as well as exacerbate existing ones; moreover, the emphasis on prevention measures (for example, hand-washing, measures to avoid droplet mediated infection) might have a specific impact on certain psychiatric disorders like obsessive-compulsive disorder. The mental health professionals need to ensure optimal care of these patients during these challenging times; nonetheless, pandemic situations like COVID-19 are rare and hence they provide unique opportunities to learn.

Relevance of Mental Health Research and Interventions Related to the COVID-19 Pandemic

The COVID-19 pandemic is unique in comparison to other SARS infections in the extent of its global affliction as well as the almost universal lockdown that is currently in place for limiting the spread of the infection. This will have far-reaching consequences on almost all spheres including health, employment, economy as well as social well-being. Therefore, this situation has the potential to result in a parallel global 'pandemic' of mental health morbidity throughout the world. An equally important issue concerns the mental health issues in health care workers including disorders of adjustment leading to absenteeism, exacerbation of preexisting conditions and new-onset conditions including acute and post-traumatic stress disorder. Mental health specialists and researchers throughout the world would

need to be prepared for this scenario and therefore should initiate research and preventive interventions to tackle this potentially grave situation. Much of these strategies need to be planned, incorporating the use of technological aids for assessment and surveillance which would enable the formulation of preventive and intervention strategies. These surveillance, preventive and intervention strategies need to be piloted as soon as possible, anticipating the global 'pandemic' of mental health morbidity alluded to earlier.

Research Studies during Pandemics: Categories

Psychiatry research studies during pandemics have the potential to provide vital information on symptom fluctuations, psychological impact, neurobiological effects, treatment challenges including pharmacological interactions and the course of disorders. Pandemic situations, like COVID-19 are also unique in identifying effective interventions; this, in turn will prepare us to proactively handle future crises. Contextually, research studies that are conducted during the pandemic can be divided into the following categories:

- Research studies on psychiatry-pandemics interactions
 - Effects of Pandemics:
 - Immediate: understanding the clinical, psychosocial, pharmacological, biological impact
 - Short-term: influence on course & outcome over the near future (months)
 - Long-term: outcome as well as distal effects like neurodevelopmental sequelae in the fetus exposed to pandemic
 - Biorepository: Research studies with a primary objective to collect data & store sample that may be used for future analyses

- Research studies independent of pandemics:

This category will comprise of all other research studies that were being conducted before the onset of a pandemic. Within this category, one set of studies might be primarily focused on the collection of cross-sectional data; such studies that focus on one-time data collection may be affected by the pandemic situation than those that are longitudinal (for example, those that examine the trajectory of symptom course & outcome with or without a component of intervention). Thus, ongoing clinical intervention research may be critically affected by pandemics such as COVID-19. Amendment of the clinical trial protocols may be necessitated depending on the nature of the ongoing intervention study. Alternatives to in-person visits such as tele-evaluation may be necessitated. If in-person visits are required, alternate safer locations other than hospitals may be considered.

Psychiatry Research in Pandemics: Challenges

Conducting research studies amidst pandemic situations like COVID-19 involves several challenges. Restriction in the movement of the population critically affects subject participation in research studies. The risk of acquiring infection especially while visiting hospitals adds further to this. Balancing the needs of the subjects (access to basic living requirements, the psychosocial impact of pandemic

situations, offering relevant clinical care) with requirements for high-quality research data collection needs careful consideration and decision-making based on the specifics of the individual context. With respect to the ongoing research studies, one needs to be mindful of the potential confounding effects of the pandemic situation; to evaluate such confounding effects, it is vital that relevant additional assessments need to be incorporated. All these have to be implemented with strict adherence to high standards of ethics.

The core principle to be kept in mind while taking decisions regarding the continuation of ongoing research should be the safety of study participants and the research personnel. Researchers have to first classify the ongoing research projects with respect to how essential it is for the study participants to be continued in the study in view of possible exacerbations of their clinical condition, if discontinued/suspended from further participation. This consideration is especially relevant for ongoing intervention studies. Other observational studies that examine the biological and psychosocial aspects of psychiatric conditions may be considered as non-essential in the present context and therefore may be suspended if the protocol involves the possible risk of exposure to study participants or research personnel. In both the above scenarios, the researchers should explore whether suitable amendments to the protocol can be made to ensure the continuation of the study using remote evaluations and interventions through teleconsultation without entailing substantial risks for the study participants. These modifications to the study protocol should be made keeping in mind the possible impact of the same on the validity of the inferences that can be made out of the results that will be generated. These changes made to the protocol along with the required changes in the informed consent process would then need to be approved by the Institutional Ethics Committee in an expedited manner followed by the re-consenting of the study participants for continuation in the project. Regular communication with the funding agency should be maintained regarding this entire process to ensure approvals for the various steps being taken.

Following the relaxation of the general lockdown, further long-term amendments to the protocol may be warranted incorporating gadgets such as sensors and other devices that permit remote monitoring at homes without affecting the validity of the results as mentioned above. These again need to be approved by the Institutional Ethics and other regulatory committees as applicable as well as the funding agencies.

Psychiatry Research in Pandemics: Tapping the Potential of Technology

COVID-19 pandemic is unique in comparison to several others that have occurred in history in many aspects; one noteworthy factor is the availability of technology that has the potential to handle several challenges including the ones related to conducting research studies. Technological advances in telepsychiatry platform empower researchers to carry out certain psychiatric evaluations remotely without the patient having to visit the hospital; combining such assessments with the collection of relevant bio-parameters through wearable devices or mobile-apps may partially compensate for physical examination of patients.

Psychiatry Research in Pandemics: Ethics

From ethical perspectives, it is imperative to actively consider conducting research studies that can potentially improve interventions to the current pandemic as well as learn ways to prevent or formulate optimized approaches in the event of future pandemics. Nonetheless, it is mandatory to ensure that the quest for generating new information should be optimally balanced with the more pressing needs

related to immediate health interventions warranted by the pandemic. Initiative to conduct research must neither interfere with the delivery of public health measures nor inadvertently result in a diversion of essential resources. The ethical standards that are followed during the non-pandemic conditions (in terms of ensuring the protection of human participants, absolute adherence to professional conduct, formulating research questions that are scientifically valid with careful consideration of risk-benefit) should be strictly followed. On the other hand, there are likely to be certain research scenarios that might require an expedited review of project proposals so the studies are effectively implemented within the critical time window; the ethics review boards may have to adapt their standard procedures to accommodate such request for fast-track reviews.

Protection of Vulnerable Population Participating in Research

It is now well-established that those who are at the highest risk of severe morbidity and fatalities due to COVID-19 are the elderly, those with comorbid medical conditions as well as those exhibiting a dysregulated immune response to the virus. The elderly research participants, especially those with Alzheimer's disease and other neurodegenerative disorders are therefore highly vulnerable not only to the effects of COVID-19 infection but also to the medical and psychosocial complications of suspension of ongoing interventions as well as of social isolation. It is therefore important to remain in touch with the study participants regularly through tele-follow-up calls and to ensure that they are coping well with the situation as well as to assess their physical (including treatment side effects), psychological and social well-being and to suggest interventions as indicated. Such interventions, whenever required should preferably be administered at home through involving community-level health workers using adequate PPEs.

Patients with other psychiatric disorders and substance use disorders have higher medical comorbidities apart from having a possibly dysregulated immune apparatus; thus, they may also be vulnerable to develop more complications if exposed to COVID-19 infection. Therefore, the above steps are recommended for these patients as well who are participants of ongoing research.

While it is important to safeguard our vulnerable population from exposure to the pandemic, the same population is at higher risk for greater physical, psychological and social risks of the infection and the psychosocial effects of the global lockdown and social distancing. It is therefore of paramount importance that this section of the population should not be excluded from research studies examining the effect of the pandemic on their physical and psychosocial well-being as well as the benefit of possible intervention strategies. What is recommended is due diligence to protect them from being exposed to risk on account of their participation in research and not exclusion from all future research.

Recommendations for Specific Research Settings

A significant majority of modern-day research in neuropsychiatric disorders involves brain imaging (Magnetic Resonance Imaging, Magnetoencephalography), electrophysiology (electroencephalogram, event-related potentials), psychophysics (eye-tracking, functional near-infrared spectroscopy, heart-rate variability), neuromodulation techniques (transcranial magnetic stimulation, transcranial direct current stimulation) and similar others. At present, all observational studies involving the above experimental studies are suspended to eliminate risk to participants. However, following the global lockdown period, in due course, there would come a time when these observational studies will be slowly resumed, following stringent measures to eliminate/minimize risk

to participants. Therefore, researchers in such settings should formulate standard operating procedures for how such experimental methods are to be implemented in the above settings henceforth. These could involve an initial step of tele-screening of participants (COVID; other medical conditions; suitability for the experimental method etc.); testing (RT-PCR/antibody) for COVID-19 and other SARS infections at the local health center (when testing becomes more universal and readily available); regular testing of personnel involved in the day-to-day running of the above research settings; use of PPEs and other universal infection control protocols that are already in place including disinfection of the facility after each recording etc.

It is imperative that researchers and policy-makers initiate urgent measures towards constituting large-scale harmonized networks to facilitate conducting research studies in psychiatry amidst a pandemic situation like COVID-19 (for example, Platform foR European Preparedness Against (Re-) emerging Epidemics (PREPARE) [<https://www.prepare-europe.eu>]; PREPARE is a European Union-funded network for harmonized large-scale clinical research studies on infectious diseases, prepared to rapidly respond to any severe infectious disease outbreak, providing real-time evidence for clinical management of patients and for informing public health responses). In due course, such networks should also focus on expanding their mandate to address needs such as conducting research studies in other disasters like earthquakes, tsunami etc.

Research in Pandemics: Data Sharing & Dissemination of Findings

Another vital component of research ethics during emergencies like pandemic is making the data findings available at the earliest so that the societal benefits are maximized. For instance, preliminary data that might aid predicting patients that have high-risk to worsen or socio-demographic variables that may be associated with new-onset depression or suicidal risk in the context of a pandemic will be of immense value. Nonetheless, it is critical that communication of research findings should be constructive and adequate measures should be ensured to avoid creating panic among the masses. Sharing of data will facilitate generating additional insights through newer analyses; pooling data from multiple centers will pave the way for big data studies that may result in inferences with a wider scope of generalizability. Ethics review bodies, as well as research data regulators, should ensure evolving required standard operating procedures towards a) ensuring the validity of findings (especially the 'sensitive' observations) before they are communicated and b) seamless mechanisms to facilitate data sharing with adequate measures to protect the data privacy and rights of the study participants as well as the interests of the collaborating researchers.

Addressing the Health and Well-being of Research Personnel and Investigators

Last, but not the least, researchers should be cognizant of the need to ensure their own health and well-being during this stressful and uncertain phase for the scientific community. Principal Investigators of research projects have the responsibility to ensure that regular communications are continued through online conferencing channels during the lockdown phase and through the phase of gradual resumption of previous patterns of functioning. Such regular communication between members of the research team would provide an opportunity for the research staff to voice their concerns and to feel adequately supported. Most international funding agencies have already put out advisories for Investigators conveying a compassionate understanding of their limitations during this crisis and relaxing deadlines for grant submission as well as submission of reports.

Conclusion

Psychiatric research studies during pandemics like COVID-19 may involve examination of psychiatry-pandemic interactions as well as studies that are independent of pandemics. Conducting such studies involve handling challenges due to pandemic related restrictions as well as risk for infections. Recent advances in technology offer novel avenues to effectively handle some of these challenges. Expectedly, the implementation of such research studies has to efficiently address several facets of ethical requirements. There is an urgent need for formulating international guidelines as well as constituting large-scale harmonized networks to facilitate conducting research studies in psychiatry amidst a pandemic situation like COVID-19.

References

- Cowan HR (2020). Is schizophrenia research relevant during the COVID-19 pandemic? *Schizophrenia Research* (in press) <https://doi.org/10.1016/j.schres.2020.04.002>.
- Keshavan A, Poline J-B (2019). From the Wet Lab to the Web Lab: A Paradigm Shift in Brain Imaging Research. *Front. Neuroinform.* 2019; 13:3.
- Nicol GE, Piccirillo JF, Mulsant BH, Lenze EJ (2020). Action at a Distance: Geriatric Research during a Pandemic. *JAMA Internal Medicine*: 00:1-4.
- Smith M, Upshur R (2019). Pandemic Disease, Public Health, and Ethics. In: Mastroianni AC, Jeffrey P. Kahn JP, Kass NE, editors. *The Oxford Handbook of Public Health Ethics*. 1st ed. New York: Oxford University Press.

Recommended Sanitation Measures for COVID-19

Vigilance in hand hygiene practices, wearing of surgical masks in the hospital, appropriate use of PPE in patient care, and regular cleaning and disinfection practices are key infection control measures to prevent nosocomial transmission of COVID-19. **This chapter is a compilation of sanitation measures recommended for COVID-19 by the World Health Organization (WHO), Centre for Disease Control and Prevention (CDC)-USA and Ministry of Health & Family Affairs, Government of India. The images used in this chapter are free to download for non-commercial use from the above websites and have been appropriately cited.**

Transmission:

There are two main routes of transmission of COVID-19: respiratory and contact. Respiratory droplets are generated when an infected person coughs or sneezes. Infective droplets may also remain on environmental surfaces; thus, the immediate environment of an infected individual can serve as a source of transmission (known as contact transmission).

This summary includes information on hand hygiene, personal protective equipment, and cleaning and disinfection practices.

Hand Hygiene

It is one of the important practices to reduce the transmission of COVID-19. It includes hand washing with soap and water, and use of alcohol-based products.

- 1) **Hand Washing (takes about 40-60 seconds)** with soap and water.

The figure 1 below shows the steps involved in hand washing as advised by the World Health Organization.



[Source: WHO Guidelines on Hand Hygiene in Health Care. Page 155]

2) Cleaning hands with alcohol-based products that do not require water. (takes about 20 seconds)

Use alcohol-based sanitiser/rub with 60% alcohol content.

The figure 2 shows the steps involved in cleaning hands with alcohol rub as advised by the World Health Organization.



[Source: WHO Guidelines on Hand Hygiene in Health Care. Page 154]

Personal Protective Equipment (PPE)

Personal Protective Equipments (PPEs) are protective gear to safeguard the health workers by minimizing exposure.

Components of PPE

i) Face Shield and Goggles

Mucous membranes of eyes, nose and mouth can be contaminated by -

- Droplets generated by coughing or sneezing by infected person
- During aerosol generating procedures
- Inadvertently touching the eyes/nose/mouth with a contaminated hand

The flexible frame of goggles should provide good seal with the skin of the face, covering the eyes and the surrounding areas and even accommodating for prescription glasses.

ii) Masks

The type of mask to be used is related to particular risk profile of the category of personnel and his/her work. There are two types of masks which are recommended for various categories of personnel working in hospital or community settings:

- Surgical Triple layer mask: This is disposable, fluid resistant, provides protection from droplets of infectious material.
- N-95 Respirator mask: It is a respiratory protective device with high filtration efficiency to airborne particles. It provides an air seal to the wearer due to close facial fit design. These masks have high fluid resistance, good breathability and a cup-shaped design that does not collapse against the mouth. If correctly worn, the filtration capacity of these masks exceeds those of triple layer medical masks.

iii) Gloves:

Nitrile gloves	Latex gloves
Resist chemicals including certain disinfectants such as chlorine	Can have high rate of allergies and contact dermatitis
Nitrile gloves are preferred but if not available, latex gloves can be used. Non-powdered gloves are preferred to powdered gloves.	

iv) Coveralls or Gowns:

These protect the healthcare providers working in close proximity (within 1 meter) of suspect/confirmed COVID-19 cases or their secretions. Coveralls typically provide 360-degree protection because they are designed to cover the whole body, including back and lower legs and sometimes head and feet as well. They also have an attached head cover. Medical/isolation gowns do not provide 360-degree coverage (e.g., possible openings in the back, coverage to the mid-calf only). Gowns are easier to don and doff. Head cover should be worn separately. There is a lack of comparative evidence to show which one is more effective than the other in reducing transmission to health workers.

v) **Shoe covers:** These are used over the footwear/shoes and are made of impermeable material.

vi) **Head covers:** Coveralls come with an attached head cover. Head covers should be used separately with medical gowns. Head cover is made of impermeable material and should completely fit all the hair and hair extensions.

The table below describes the MOHFW, DGHS guidelines for rational use of PPE in different settings

COVID-19: Guidelines on rational use of Personal Protective Equipment

Source - Ministry of Health and Family Welfare, Directorate General of Health Services [Emergency Medical Relief]

Patient Care Activities /Area	Risk of Exposure	Triple Layered Mask	N-95 Mask	Gloves	Gown/Coverall	Goggles	Head Cover	Shoe cover
Triage Area in OPD	Moderate risk	X	✓	✓	X	X	X	X
Help desk/ Registration counter	Moderate risk	X	✓	✓	X	X	X	X
Temperature recording station	Moderate risk	X	✓	✓	X	X	X	X
Holding area/ waiting area	Moderate risk	X	✓	✓	X	X	X	X
Doctors chamber in OPD	Moderate risk	X	✓	✓	X	X	X	X
Clinical Management in Isolation rooms	Moderate risk	X	✓	✓	X	X	X	X
ICU facility / Critical Care Ward where aerosol generating procedures are done	High Risk	X	✓	✓	✓	✓	✓	✓
SARI ward - attending to severely ill patients of SARI	High Risk	X	✓	✓	✓	✓	✓	✓
Sample Collection/Sample testing for COVID-19	High Risk	X	✓	✓	✓	✓	✓	✓
Dead Body Packing	High Risk	X	✓	✓	✓	✓	✓	✓
Dead Body Transport	Moderate Risk	X	✓	✓	X	X	X	X
Mortuary - Dead Body Handling	Moderate Risk	X	✓	✓	X	X	X	X
Mortuary- While performing autopsy	High Risk	X	✓	✓	✓	✓	✓	✓
Sanitary staff	Moderate risk	X	✓	✓	X	X	X	X
CSDD/Laundry- Handling linen of COVID-19 patients	Moderate risk	X	✓	✓	X	X	X	X
Visitors attending OPD	Low Risk	✓	X	X	X	X	X	X
Visitors accompanying Patients in IP facility	Low Risk	✓	X	X	X	X	X	X
Supportive services-Administrative Financial Engineering Security, etc	NO risk	X	X	X	X	X	X	X

[Source:Ministry of Health and FamilyWelfare, Directorate General of Health Services (Emergency Medical Relief) - Novel CoronavirusDisease 2019 (COVID-19): Guidelines on rational use of Personal Protective Equipment. Page 4 to 8]

Sequence of donning and doffing the complete PPE

Donning

1. Shoe covers
2. Gown
3. Head covers
4. Mask
5. Goggles/Face Shield
6. Gloves

Doffing

1. Gloves
2. Gown
3. Goggles/Face Shield
4. Mask
5. Head covers
6. Shoe covers

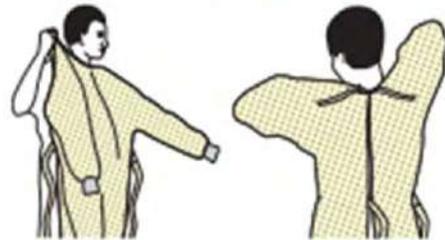
The figures below explain the process of donning and doffing the PPE as given by Centers for Disease Control (CDC), USA.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



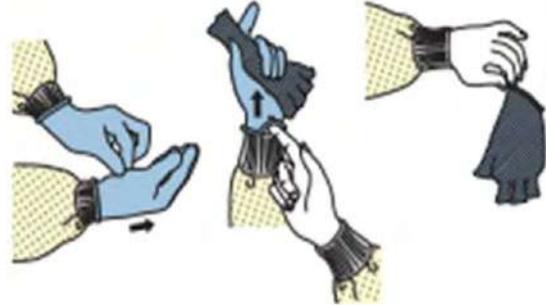
[Source: CDC - Personal Protective Equipment: Questions and Answers.
<https://www.cdc.gov/niosh/npptl/pdfs/PPE-Sequence-508.pdf>]

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container



3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

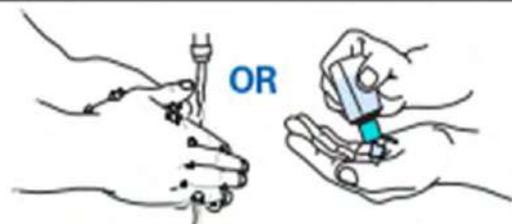


4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — **DO NOT TOUCH!**
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



**PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS
BECOME CONTAMINATED AND IMMEDIATELY AFTER
REMOVING ALL PPE**



HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container



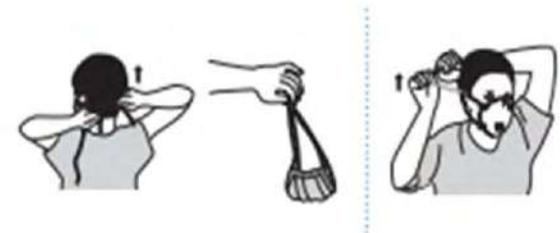
2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

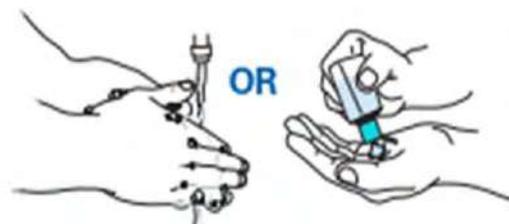


3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



**PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS
BECOME CONTAMINATED AND IMMEDIATELY AFTER
REMOVING ALL PPE**



[Source: CDC - Personal Protective Equipment: Questions and Answers.
<https://www.cdc.gov/niosh/npptl/pdfs/PPE-Sequence-508.pdf>]

In addition to proper hand hygiene and rational use of personal protective equipment, it is important to ensure that all surfaces are cleaned and disinfected regularly, adequately, and safely; that a protocol for the same is established; and that infected waste is appropriately disposed of.

CLEANING AND DISINFECTION [Source: Compilation of recommendations by WHO in Water, sanitation, hygiene and waste management for the COVID-19 virus and CDC- Interim recommendations for cleaning and disinfection for households and communities]:

- 1) **Infected Waste:** This may include soiled linen, clothes, faecal matter, blood spills, and other contaminated human waste. The main principles include:
- Appropriate protective equipment: PPE (heavy gloves, mask, face shield, long sleeved gown/ apron, boots/ closed shoes
 - Hand hygiene before and after cleaning
 - Removal of organic material (e.g., blood, faeces etc.) with absorbent material prior to cleaning and disinfection

Types of infective waste
<p>Soiled clothes or linen: Place in labelled leak proof bags/ containers → Either 1) Machine wash with detergent at 60-90 degree Celsius and dry Or 2) Soak in hot water and soap, stir with stick → Empty and soak in 0.05% chlorine for 30 min → Rinse with clean water and dry in sunlight.</p>
<p>Faeces / other human waste/ spilled body fluids: Clean with absorbent towels → Place waste in covered containers → Dispose in latrine (if faeces) → Disinfect the area with 0.5% free chlorine solution.</p>

Disposal of water used to clean PPE/ infected areas:

Utility gloves and reusable plastic aprons should be cleaned with soap and water and then decontaminated them with 0.5% sodium hypochlorite solution after each use. Single-use gloves (nitrile or latex) and gowns should be discarded after each use and not reused; hand hygiene should be performed after PPE is removed. If waste water used to clean these items includes disinfectant used in prior cleaning, it does not need to be chlorinated or treated again. However, it is important that such water is disposed of in drains connected to a septic system or sewer or in a soakaway pit- which should be fenced off within the health facility grounds to prevent tampering and to avoid possible exposure in the case of overflow.

2) General Surfaces:

i) Cleaning:

Commonly touched surfaces should be frequently cleaned and wiped. Soap and water can be used for regular cleaning. Surfaces that are touched frequently include: tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, etc.

ii) Disinfection:

After cleaning with soap or cleaning solution, the surfaces should be disinfected. Most disinfecting agents require keeping the surface wet for a period of time (known as the 'contact time') to ensure effectiveness against viruses. Organic materials such as contaminated human waste can inactivate disinfectants such as bleach, so surfaces should be cleaned before being disinfected. It is important to wear gloves and ensure adequate ventilation while using disinfectants. Disinfectants should not be used past their expiration date. Disinfectants should not be mixed together.

Commonly used disinfectants include:

Disinfectant	Dilution	Contact time	Used for
Hydrogen peroxide 7%	1: 16	5 min	Disinfecting fabrics, small surfaces
Sodium hypochlorite (bleach) 5%	1:100 for general surfaces 1:50 for floors	10 min for surfaces, 30 min for immersion	Disinfecting surfaces, linen, clothing
Quaternary ammonium compounds	Preformulated; as recommended on product label	5-10min	Environmental surfaces: floor, walls, furniture
Phenolics	Preformulated; As recommended on product label	10 min	Disinfecting tables, bed rails, lab surfaces
Ethanol 70%	Preformulated	1 min	Small surfaces, equipment (stethoscopes, ventilators)
Hydrochloric acid	Preformulated	10 min	Toilet bowl cleaning

[Source: EPA List N: Disinfectants for Use Against SARS-CoV-2.

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>]

Floors are recommended to be cleaned thrice a day, and more frequently in case of contamination or spills. Three buckets- one containing plain warm water, one with detergent solution; and one bucket with hypochlorite (1:50 dilution) are used. After removing contaminated organic material (described above), the three-bucket technique is used to mop the floor, beginning with the first bucket with plain water, followed by one with the detergent solution. After each dip and use, the mop must be cleaned with water and wrung out. Once the floor is dry, the area must be mopped again using hypochlorite 1:50 dilution and allowed to dry. Water and detergent solution should be discarded and changed frequently, whenever they become dirty. While mopping, the mop should not be moved back and forth over a single area repeatedly. The movement of the mop should be unidirectional, and should progress from cleaner/less used areas to more contaminated areas. Double dipping the mop in cleaning solution should be avoided to prevent contamination. Brooms should not be used. After cleaning, the mop and buckets must be cleaned and disinfected. Personal hygiene measures including hand hygiene must be followed. While constituting disinfectant, precautions must be taken to use cold water, prevent splashes, and ensure protective garb and ventilation.

i) Soft surfaces:

For soft surfaces such as carpets, rugs, mats and curtains, observable contaminants if any should be removed. The surface may then be cleaned using soap and water or routinely used surface cleaners. If possible, soft materials should be laundered using hot water and dried. These materials can alternatively be disinfected using household disinfectants (refer table above).

ii) Laundry:

Disposable gloves must be used while handling laundry, including bedding, towels, and clothing. Laundry items should not be shaken out before washing, to prevent spread of aerosolized infective material. Items should be laundered in the warmest water setting available (if machine laundering) or in hot water stirred with a stick (avoiding spills) if manually washed. Routine detergents may be used. Laundry must be completely dried. Hampers and other items must be cleaned and disinfected after each use. For additional information regarding laundry contaminated with infective waste, refer section 1 above.

iii) Electronics:

For electronics, such as tablets, touch screens, keyboards, remote controls, and ATM keypads, a wipeable cover could be used. If manufacturer's instructions for cleaning are available, they may be followed. Else, alcohol-based wipes or sanitizer liquid/sprays containing at least 70% alcohol should be used after switching off the electronic item. The surface should be dried completely before use.

3) General Precautions

- Disposable gloves and gowns must be worn during all steps of the cleaning process. Additional personal protective equipment (PPE) might be required based on the cleaning/disinfectant products being used and if there is a risk of splash.
- Staff should be properly trained on the practices of cleaning and decontamination of hospital surfaces.
- A log of all cleaning procedures must be maintained.
- All housekeeping surfaces (floors/ table tops/ counters) should be cleaned on a regular basis, when visibly soiled and when spills occur. Either hot water or a neutral detergent may be used or a detergent/disinfectant may be used.
- Housekeeping surfaces should be cleaned with a detergent/ disinfectant solution on daily basis or more frequently in specific high-risk areas (ICUs, transplant units, isolation rooms, burns wards, OTs, emergency rooms, or when there are suspected spills of blood/ body fluids) and in areas that have patients with known transmissible infectious diseases. **High-touch surfaces must be cleaned and disinfected more frequently than minimal-touch surfaces.**
- All horizontal surfaces and all toilet areas including washbasins and commodes should be cleaned daily.
- Administrative and office areas with no patient contact require normal domestic cleaning.
- Fresh detergent/ disinfectant solutions must be prepared every day according to manufacturers' instructions. These solutions must be replaced with fresh solutions frequently.
- Diluted disinfectant solutions may become contaminated with resistant pathogens. Therefore, after the day's use, remaining solutions must be discarded and containers must be cleaned with detergent before being dried.
- The methods of cleaning floors include wet mopping, and vacuum cleaning with filters attached. Avoid dry mopping with brooms, as this generates dust aerosols.
- Horizontal surfaces must be wet dusted with a cloth moistened with a hospital disinfectant (or detergent).
- Contamination of cleaning solutions and mops must be minimized. For wet mopping, a two-bucket method should be used. When a single bucket is used, the solutions should be changed more frequently. Used cleaning solutions must be discarded in the sluice. The buckets should be cleaned with detergent and kept inverted to assist drying.

- Mop heads must be changed after cleaning spills and at the beginning of the day.
- Mop heads and cleaning cloths must be decontaminated regularly by laundering (heat disinfection) with detergent and drying at 80 degrees Celsius.
- Walls, blinds and window curtains must be cleaned when visibly soiled or contaminated.

Conclusion

COVID-19 is transmitted by droplets. In addition to social distancing, the critical element is appropriate measures of sanitation. Sanitation measures collated here are recommended by various national and international health control agencies.

References

Pittet D (2009). Hand Hygiene in Health Care First Global Patient Safety Challenge Clean Care is Safer Care. World Health [Internet]. 30(1):270.

http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf

<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf>

<https://www.cdc.gov/niosh/npptl/pdfs/PPE-Sequence-508.pdf>

<https://www.mohfw.gov.in/pdf/National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>.

<https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html>

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

https://www.cdc.gov/coronavirus/2019-ncov/prepare/cleaning-disinfection.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcommunity%2Fhome%2Fcleaning-disinfection.html

https://apps.who.int/iris/bitstream/handle/10665/331508/WHO-2019-nCoV-IPC_long_term_care-2020.1-eng.pdf

World Health Organization. Water, sanitation, hygiene and waste management for the COVID-19 virus. 2020; (March):1–9. Available: <https://www.who.int/publications-detail/water-sanitation-hygiene-and-waste-management-for-covid-19>

ANNEXURE

ICMR Screening for COVID-19

Date:

Name of the patient

Hospital number:

Risk for acute respiratory illness	Score		
A. Exposure Risks (in the past 14 days prior to symptom onset)	Any patient (adult or pediatric)		
1. Had a history of travel to areas with presumed ongoing community transmission of COVID-19 (China, Italy, Iran, South Korea, Japan, France, Spain, Germany, USA, Switzerland) (List will be updated every week) Or A close physical contact in the past 14 days prior to symptom onset with a confirmed case of COVID-19 OR Working in or attended a healthcare facility where patients with confirmed COVID-19 were admitted	5		
2. Exposure to a confirmed COVID-19 case in the last 2 weeks	3		
3. Exposure to suspicious patients in the last 2 weeks	2		
4. Visit to a healthcare facility that had COVID-19 case in the last 2 weeks	1		
B. Clinical signs and symptoms	Patient with Exposure Risk No. 1	Patient with or without exposure risk No. 2, 3, or 4	
		Pediatric	Adult
1. Fever	1	1	2
2. Cough (new or worsening)	1	1	2
3. Shortness of breath (new or worsening)	1	1	2
4. Sore throat and/or runny nose	1	-	1
5. Nausea, vomiting and/or diarrhea	-	-	1
6. Chronic renal failure, CAD/heart failure	-	-	1
Total score			

A score of ≥ 4 , Consider it high risk