# Digital Mental Health Initiatives in India

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## Abstract

The burden of mental health problems is rising across the world. In South Asia region, the  suicide rate is highest in India with one person dying every 40 seconds due to suicide with 16.5 suicides per 100,000 people.  In 2017, around 200 million people were suffering from mental illness in India. The COVID-19 pandemic has even worsened the mental health situation in the country. People across all age groups suffered from anxiety and depression during COVID-19 lockdown. Some of the major factors that contribute to the burgeoning mental health burden are scarcity of mental health specialists particularly in rural areas,limited availability of mental health services,limited access to mental health services, stigma associated with mental illnesses and limited awareness and knowledge about mental health.

The Central and state governments have taken various initiatives to deal with the mental health situation. These range from policy level initiatives like passing of Mental Health Act in 2017 to community level mental health programmes. The boom in internet access and telecommunications provide an apt opportunity for India to fill the large gap that exists in the provision of mental healthcare services.The central government has launched MANAS , a mobile application for improving mental wellbeing of citizens, Karnataka Government has launched  e-Manas: Karnataka Mental Healthcare Management System and various pilot initiatives have also been taken by state governments in collaboration with private organizations.

This is a concept paper based on secondary data from various national and international journals, government and private documents and websites. This paper presents an overview of mental health situation in the country and provides a detailed account of  various digital platforms launched and pilot initiatives taken in India to tackle the rising burden of mental health problems. The paper also put forward some recommendations to improve the mental health situation in the country.

Keywords: Mental Health, Digital, Information and Communications Technology, ICT, India

## Introduction

The burden of mental health problems is substantial in India. According to the Global Burden of Disease study, around 200 million people in India were suffering from mental illness in 2017 and about half of them suffer from anxiety or depressive disorders(Sagar et al. 2020). World-wide, India accounts for around one-fourth of all male suicides and more than one-third of all female suicides (India State-Level Disease Burden Initiative Suicide Collaborators 2018). As per National Mental Health Survey 2015-2016, around 10% of adults meet diagnostic criteria for a mental health condition(Murthy 2017; Patel and Balaji 2020). Suicide has been the leading cause of death  among young people in India(Patel et al. 2012; Mascarenhas 2016).

The impact of COVID-19 on mental health has been tremendous.  According to'FEEL-COVID' survey conducted in February-March 2020 across 64 Indian cities, one-third of 1,106 participants faced significant 'psychological impact' due of COVID-19 (Varshney et al. 2020). A number of other Internet-based surveys have been conducted between March-May 2020 which also show high rates of anxiety and depression among the general population(Patel and Balaji 2020). After interviewing 1,102 parents and primary caregivers during the "Rapid online perception study about the effects of COVID-19 on children", it was found that more than 50% of children experienced anxiety and agitation issues during COVID-19 lockdown(Bhattacharya 2020). Within 100 days of COVID-19 lockdown, 66 children committed suicide in Kerala[1]. An online survey conducted with 152 doctors found that more than one-third of them experienced anxiety and depression during the pandemic(Chatterjee et al. 2020). A study with 1,200 auto drivers found that 75% of them experienced anxiety and panic over their work and finances during COVID-19 lockdown[2].Due to increased household responsibilities and domestic violence, women also suffered from depression and anxiety issues during COVID-19 lockdown(Patel and Balaji 2020).

Some of the factors that contribute to the burgeoning mental health burden in India are scarcity of mental health specialists particularly in rural areas,limited availability of mental health services,limited access to mental health services, limited awareness and knowledge about mental health, stigma associated with mental illnesses , logistical issues such as inadequate funding, out-of pocket expenditure, poverty,  lower levels of literacy, lack of cost-effective and evidence-based intervention protocols, lack of followup care and community-based networks to address mental health etc.

The Government of India has taken various policy level initiatives to deal with the mental health situation in the country. In October 2014, the National Mental Health Policy was framed with the vision "*to promote mental health, prevent mental illness, enable recovery from mental illness, promote destigmatization and desegregation, and ensure socio-economic inclusion of persons affected by mental illness by providing accessible, affordable and quality health and*

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[1] https://gulfnews.com/world/asia/india/india-66-children-commit-suicide-in-kerala-in-100-days-of-covid-19-lockdown-1.72694686

[2] https://timesofindia.indiatimes.com/india/auto-drivers-press-panic-button-as-lockdown-throws-life-out-of-gear/articleshow/76093164.cms

*social care to all persons through their life-span within a rights-based frame work*"(Ministry of Health and Family Welfare, Government of India 2014). The Government of India passed Mental Healthcare Act in 2017 which supersedes the Mental Health Act, 1987[3]. The National Mental Health Programme(NMHP) has already been ruuning in the country since 1982, with the addition of District Mental Health Programme (DMHP) in the year 1996[4].

State governments have also taken various inititaives to deal with the mental health situation. The state mental health authority have been established across states in India[5]. In 2014, the Government of Karnataka launched "Manochaitanya Programme"  with the aim "to integrate mental health care in all public health-care institutions-eg, all taluk (administrative divisions in districts of India) hospitals, community health centres, and primary health centres of states"(Manjunatha and Singh 2016). The Government of Andhra Pradesh is also planning to set up mental health clinics in all the government hospitals across the state[6]. The Government of Delhi intends to set up School clinics in all the government schools across the state, which will have medical staff including mental health professionals[7].

The boom in internet access and telecommunications provide an apt opportunity for India to fill the large gap that exists in the provision of mental healthcare services. Digital technologies can provide a crucial platform for scaling up mental healthcare in India. Some of the digital tools that are being explored to improve mental health include tele-psychiatry, tele-consultation, mental health apps and games, digital assessment, digital therapeutic approaches, virtual tranining and clinical support, personal health trackers, social media websites, online peer support forums, meditation and mental wellness apps and many more(Roland et al. 2020).


## Digital Platforms

### MANAS

On 14th April, 2021, the Government of India launched "Mental Health and Normalcy Augmentation System (MANAS)", a national platform to enhance mental wellbeing of the Indian citizens((Office of Principal Scientific Advisor, Government of India 2021). It was initiated by the Office of the Principal Scientific Adviser, Government of India (GoI) and jointly developed by National Institute of Mental Health and Neuro Sciences (NIMHANS) Bengaluru, Centre for Development of Advanced Computing(C-DAC) Bengaluru and Armed Forces Medical College (AFMC) Pune. MANAS platform is an integration of work by various government ministries, national bodies and research institutions. The initial mobile app version launched by the Government of India aims to encourage positive mental health in the 15-35 years age group. In future, the platform intends to be multi-lingual and be integrated with various public health

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[3] https://egazette.nic.in/WriteReadData/2017/175248.pdf
[4] https://www.nhp.gov.in/national-mental-health-programme_pg
[5] https://mhca2017.com/index.php/act/chapter-viii-state-mental-health-authority
[6] http://www.pharmabiz.com/NewsDetails.aspx?aid=112272&sid=1
[7] https://ddc.delhi.gov.in/school-clinics-in-government-schools/

schemes in India such as the National Health Mission (NHM), National Nutrition Mission (Poshan Abhiyan) and e-Sanjeevani.

## e-Manas: Karnataka Mental Healthcare Management System

On 26th June 2020, the Government of Karnataka launched an online portal "e-Manas: Karnataka Mental Healthcare Management System" for the purpose of delivering mental health services across the state (International Institute of Information Technology-Bangalore 2021). It is the first of its kind in India. e-Manas platform aims "to propel the digitization of mental healthcare services and will help provide compliance with the Mental Health Care Act, 2017 and Rules (2018)"(International Institute of Information Technology-Bangalore 2021). It is a state-wide digital registry providing services for mental health professionals (MHPs), mental health establishments (MHEs), person with mental illnesses (PwMIs) and their treatment records. This portal has been developed in collaboration with International Institute of Information Technology Bangalore (IIITB), via its E-Health Research Center (EHRC) and National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore. e-Manas Karnataka platform brings together all the stakeholders working in the domain of mental health in Karnataka under one roof. These include Karnataka Mental Health Authority, Karnataka Mental Health Review Board, mental health care establishments (both public and private), mental health care professionals (psychiatrists, psychologists, social workers, mental health nurses etc.),persons suffering from mental illnesses and their caregivers.

 "The e-Manas system will allow health information about patients to be accessed by their doctor, with their consent, at any time and any clinic or hospital, thus significantly improving the quality of medical care that can be provided(Suraksha P 2020)." It facilitates online registration of mental health establishments (MHEs) and mental health professionals (MHPs), provides a platform for recording basic medical records (BMR)of patients seeking both OPD (outpatient department) and IPD (in patient department) mental healthcare service, provides access to patient's basic health records (with patient's consent) by registered mental health professionals, enables redressal of grievances by patients and caregivers, and permits integration with other health care services such as Ayushman Bharath – Arogya Karnataka, 104, and 108(The News Minute 2020).

***"e-Manas provides a scalable, secure platform for managing mental health data and workflows, and is an important step in the digital transformation of mental healthcare***(The News Minute 2020).***"***

e-Manas Karnataka platform  has four modules(see Figure 1)(Karnataka State Mental Healthcare Authority 2020):

1. Mental Health Directory Portal
2. Mental Healthcare Authority and Mental Health Review Board (MHA/MHRB) Portal
3. Clinical Module
4. Patient Portal

**Figure 1: e-Manas Karnataka modules**
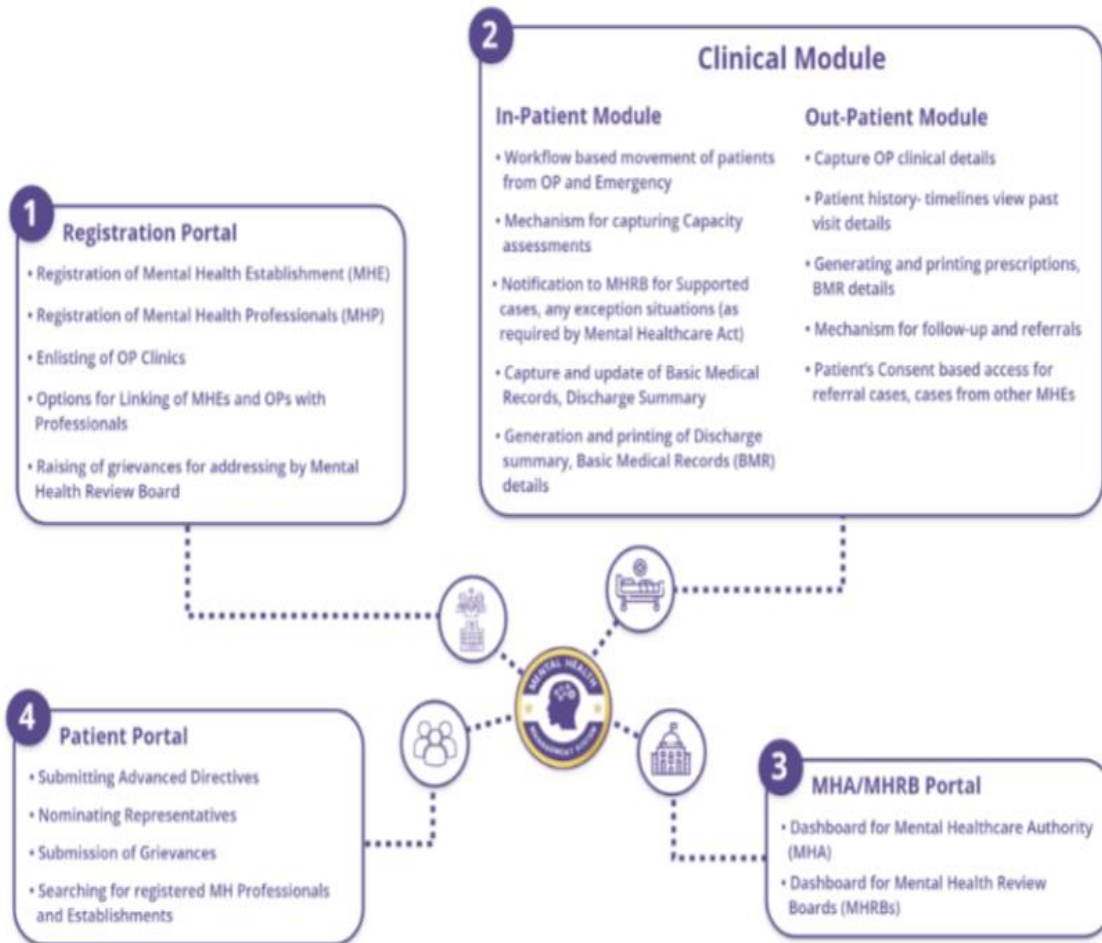


Source: Karnataka State Mental Healthcare Authority. 2020. "E-Manas Karnataka (Mental Healthcare Management System)." 2020. https://e-manas.karnataka.gov.in/#/about

## Pilot Initiatives

### Project ESSENCE

Sangath, a Goa based not-for-profit organization launched a five year (2017-2022) project called "Enabling translation of Science to Service to Enhance Depression Care' (ESSENCE)"[8](Sangath 2021a).The project is funded by the US National Institute of Mental Health. It is a collaborative work of Harvard University, various partners in South Asia and the government of Madhya Pradesh. The goals and key components of the project ESSENCE are outlined in Table 1.

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[8] https://sangath.in/who-we-are/

**Table 1: Goals and Key Components of Project ESSENCE**

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**Goals**
- Develop and evaluate the effectiveness of digital interventions (compared with face-to-face training) in matters of training ASHA workers/ govt. accredited community health workers in the delivery of HAP (Healthy Activity Programme) for depression care.
- Strengthen the capacity in South Asian countries to conduct implementation research, dissemination of its findings and the uptake of this evidence in policy and programmes.

**Key Components**
- Three training methods (face to face, digital and digital plus) for community health workers to assess the competency to deliver depression care in the primary healthcare setting.
- Remote implementation support strategies for primary healthcare providers to deliver quality depression care in the primary healthcare setting.
- Digital courses, mentored fellowships and structured workshops for media professionals, service users' representative organisations, implementation researchers and policymakers to increase the knowledge generation, exchange and uptake of the knowledge into national/state health policies.

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Source: Sangath. 2021a. "Enabling Translation of Science to Service to Enhance Depression Care (ESSENCE)." https://sangath.in/essence-3/

## Project Empower

Project Empower is a collaborative effort between the Lakshmi Mittal and Family South Asia Institute, Harvard University and the Tata Trusts(The Lakshmi Mittal and Family South Asia Institute, Harvard University 2021).  Project Empower is an effort that originates from Project ESSENCE. It aims to build a digital platform to virtually train and supervise community health workers for identification and treatment of common mental health disorders. Under this project, workshops have been conducted in the rural district of Gujarat, in collaboration with SEWA Rural[9] and National Health Mission Gujarat.  Project Empower relies on a tripartite approach: (i) gathering feedback from community health workers, (ii) refining of technological infrastructure, and (iii) enhancing the content of digital training. Over the course of its pilot implementation in Gujarat, the project made improvements in the digital platform such as enhanced version could be accessed in an offline format, making content available over smartphones, development of website containing informational materials and videos etc.

## Amma Manasu (Mother's mind)

In the year 2017, the Department of Health and Family Welfare, Government of Kerala launched a novel initiative called Amma Manasu (Mother's mind), a state-wide maternal mental health programme(Ganjekar, Thekkethayyil, and Chandra 2020; The News Minute 2021).  It aims to address psychiatric disorders among women during pregnancy and post-partum(The New Indian Express 2019). The project was launched in association with the National Mental Health Programme. Kerala is the first state in India to take the lead in integrating maternal

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[9] https://sewarural.org/

mental healthcare services into the routine antenatal and postnatal care services. Mothers will be assessed for any mental healthcare needs during their antenatal and postnatal visits by the trained junior public health nurses. Mothers requiring further care would be referred to the doctors in primary care and the District Mental Health Programme (DMHP). The programme intends to utilize Mother and Child Tracking System (MCTS), an online data-entry system for tracking pregnant women and children under 5 years, for the purpose of identifying mothers who at high risk for psychiatric disorders. The platform will also facilitate sharing of information with key stakeholders for providing care and decision making.

## MINDS Community Mental Health Worker Program

In order to address the shortage of mental health specialists in rural areas, a Community Mental Health Worker (CMHW) program was launched by MINDS foundation(The Mental Health Innovation Network 2015). Under the program, lay persons from the community were trained for conducting community level screening for mental health disorders and providing basic mental health first aid (MHFA). These trained lay persons are called as Community Mental Health Worker (CMHW). The program assumes that being part of the community themselves, Community Mental Health Workers (CMHWs) are more aware of the cultural norms existing within the community. Therefore, they should be able to reach out to vulnerable populations within the community and leverage their social networks for spreading mental health awareness.

MINDS Community Mental Health Worker (CMHW) program makes use of a cloud-based mental health platform to connect rural areas with mental health specialists. Community Mental Health Workers (CMHWs) make use of cell phones equipped with SMS based data collection software for conducting community level screening. This information is automatically integrated with a digital map which allows MINDS mental health team to visit the homes of persons at-risk, confirm clinical symptoms, and provide necessary support and care. The objective of the program is "to leverage mobile technology and digital mapping to improve mental healthcare delivery in rural areas". Provision of Mental health first aid (MHFA) includes responding to individuals exhibiting symptoms related to mental disorders, referring them to the MINDS mental health professionals, and provides support to the individual and his or her family.

## The Karnataka Telemedicine Mentoring and Monitoring Program (KTM)

The Karnataka Telemedicine Mentoring and Monitoring Program (KTM) is a collaborative program between Government of Karnataka and NIMHANS(National Institute of Mental Health & Neurosciences, Government of India 2021). It was conducted during January, 2019 to October, 2020. This program had a four tier hub and spoke model comprising of 'hub', 'micro hub', 'mini-hub', and 'spokes'. Hub' was comprised of a KTM trained psychiatrist (who was at NIMHANS). 'Micro-hub' was represented by the psychiatrist in District Mental Health Programme (DMHP), who was at the district headquarters, 'Mini hub' was comprised of the Primary Health Care Doctors at Primary Health Centres (PHCs) and 'spokes' was represented by the patients. Under the program, 33 DMHP(District Mental Health Programme) psychiatrists

were initially trained which in-turn trained 436 Primary Health Care Doctors (PCDs) across the state via use of telepsychiatric on-consultation training (Tele-OCT) and Clear Voice Capture (CVC). The entire training program was held under the monitoring of tele-psychiatrists at NIMHANS. So, the program was unique in the sense that training was imparted to the trainer. KTM program received the "Digital Innovation award" (under the public health category) from the Government of India.

## NIMHANS ECHO model

NIMHANS ECHO model is a hub and spoke tele-mentoring model aimed to bridge the urban-rural divide that exists in the mental health and addiction care in developing countries including India. Mehrotra et al. conducted a study to evaluate the effectiveness of Project ECHO. In the study, "counsellors from 11 rural and underserved districts of Chhattisgarh were periodically connected to NIMHANS multidisciplinary specialists by smartphone app and underwent virtual mentoring to learn and translate "best practices" in mental health and addiction by using "patient-centric learning", a core component of NIMHANS ECHO model"(Mehrotra et al. 2018). Overall, 12 fortnightly tele-ECHO clinics were held during September 2017 to February 2018. The results suggested that by leveraging technology, NIMHANS ECHO tele-mentoring model has the potential to build capacities in mental health and addiction care in rural and remote areas. NIMHANS ECHO model is a part of bigger Project extension for community healthcare outcomes (ProjectECHO) that focuses on knowledge sharing and capacity building to reduce disparities that exist in the management of chronic diseases between urban and rural areas(Mehrotra et al. 2018).

## Atmiyata

The situation of mental illness is more severe in rural areas of India due to lack of skilled manpower to address the burden of Common Mental Disorders (CMDs). To address this issue, Atmiyata intervention has been implemented in one of the rural areas of Maharashtra, India (The Mental Health Innovation Network secretariat 2014). Atmiyata is a two- tier community led mental health model. The first tier consists of "Atmiyata Mitras" who belong to various caste and religion-based sections of the village and are trained to identify individuals in mental distress. The second tier comprises Atmiyata Champions, who are important members of the community (such as community leaders, former teachers etc.) and are well-known and easily approachable in their village. Atmiyata Champions are trained to identify individuals in mental distress and provide structured counselling to them, including to those referred by Atmiyata Mitras. Atmiyata intervention also utilizes digital tools such as low cost mobile phones and Atmiyata app. Atmiyata app has two versions: one for Atmiyata Champions and the other for community members/general public. The app can be used by illiterates. The programme also promotes e-Learning via community based films.

"Atmiyata is an innovative, evidence-based, high impact, community-led model to reduce the mental health and social care gap in rural communities"(Centre for Mental Health Law & Policy 2021).

Atmiyata programme can be implemented on wider scale in low-resource settings to address the burden of Common Mental Disorders (CMDs)(Shields-Zeeman et al. 2017). Atmiyata has been listed by the World Health Organization (WHO) as one of the 25 good practices for delivering community outreach mental health services across the world.

## Clinical Decision Support System (CDSS)

Dealing with the mental health issues in rural areas has been a challenge. Though tele-psychiatric models do exist, but these conventional models involve mental health specialists who are available in insufficient numbers. Malhotra et al. in their paper describes an innovative digital model called "Clinical Decision Support System (CDSS)" to deal with the mental health issues in rural areas (Malhotra, Chakrabarti, and Shah 2019).

"The aim of the project was to develop and implement a digitally enabled model mental healthcare system through the development of an application for comprehensive diagnosis and management (i.e., a Clinical Decision Support System; [CDSS]), for providing high quality mental health care, through nonspecialists, in the geographically difficult and unserved areas" (Malhotra, Chakrabarti, and Shah 2019).

The project was initiated by the Department of Psychiatry at the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India. The remote sites chosen were from North-India, namely Jammu and Kashmir (JK), Himachal Pradesh (HP) and Uttarakhand (UK). CDSS is an online, fully automated system with inter-linked modules for various stages of treatment: diagnosis, treatment management and follow-up care. Malhotra et al. asserts that CDSS is the first such system that combines the benefits of digital technology and information and communication technology for delivering clinical psychiatry in the primary and secondary healthcare settings. Further, the system utilizes and trains non-specialists like General Medical Practitioner, psychiatric nurse, social workers etc. for delivering the mental health care services in rural and remote areas.

## Ummeed (hope)

The rising levels of mental health issues, abuse and neglect among children in India are a cause of concern. COVID-19 pandemic-induced lockdowns have further exaggerated these issues. Schools are places where children not only receive education but socialize and develop emotionally. The prolonged closure of schools during the lockdown has impacted children's mental well-being.

To deal with the rising mental health burden among children, on 19th January 2021 the Government of Rajasthan in collaboration with Save the Children has launched a dedicated helpline for children called "Ummeed (hope)"(Save the Children 2021). The helpline can be accessed by using the toll-free number 0141-4932233. The helpline is also known as Mental Health and Pyscho Social Support Plus (MHPSS +).The helpline allows children to speak with the counsellor and seek support for their mental health related issues. Helpline allows parents to get counselling on how to engage their children via various recreational activities. In addition,

parents and children can report any form of child abuse or any offence related to the Protection of Children from Sexual Offences (POCSO) Act, which will then be escalated to the State Child Rights Commission, Government of Rajasthan for further action.

Until May 2021, the helpline received around 3000 calls from parents and children(Budhwar 2021). Majority of the issues were related to the anxiety, stress, addiction to mobile phones, difficulty in sleeping and problem with concentrating on studies.

## Muskurayega India

Muskurayega India (India will smile) is a tele-counselling initiative by NSS[10], Uttar Pradesh in collaboration with UNICEF, Uttar Pradesh and Public Health Foundation of India (PHFI)(UNICEF 2020).  Under this initiative, mental health counsellors provide tele-counselling support to students and general public. UNICEF, Uttar Pradesh supported this initiative by providing subject matter experts and digital platforms necessary for conducting the training sessions. PHFI planned the technical sessions and provided the backend support.  In April 2020, 300 programme officers from each district were nominated as mental health Counsellors by the NSS Cell of Uttar Pradesh. In May 2020, a mobile application called "NSS-UP" was launched for the counsellors. As on September 30, 2020, 286 mental health counsellors registered on the NSS-UP app and provided tele-counselling support to 2,207 callers. In such a short span, the initiative has shown an encouraging response and provides motivation for more such initiatives in future.

## Chiri (smile)

In the wake of increasing suicidal tendencies among children in the state of Kerala, a telecounselling programme called "Chiri (smile)" was launched by the Kerala Government (Ummer et al. 2021).  This initiative was implemented as a part of "Our Responsibility to Children (ORC)" programme, a planned community intervention that connects with people in the age group 12-18 years(Agrawal 2020). The Kerala Government also launched "Ottakkalla Oppamundu (You are not alone, we are with you)", a psychosocial support programme to support children facing mental distress and prevent suicidal tendencies among them(Agrawal 2020).

Chiri (smile programme) was run by the volunteer student police cadets who directed students who were in need of mental health support to Ottakkalla Oppamundu. Within Ottakkalla Oppam Undu, community health workers (such as Accredited Social Health Activists and Anganwadi workers) and student counsellors identified students who were in need of mental health support and connected them and their parents to phone counselling by mental health experts (psychiatrists, psychiatric social workers and clinical psychologists etc.)(Outlook India 2021).

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[10] A central government scheme of the Ministry of Youth Affairs and Sports. Its motto is to build linkages between educational campuses and communities, through its vast network of volunteers from colleges and universities across the country, to reach a range of essential services to communities

## DELHI CARES

In June 2020, the Delhi Commission for Protection of Child Rights (DCPCR) launched a tele-counselling initiative, DELHI CARES, for school students who have been under mental stress due to COVID-19(Dialogue and Development Commission of Delhi 2019). This initiative was launched in collaboration with Sangath, a Goa based NGO. Sangath provides necessary tele-counselling support via their counsellors to students who are under mental stress. This initiative has been very successful and efforts should be directed towards scaling it up.

## 'BMC-Mpower 1on1' helpline

To address issues related to mental health, the Government of Maharashtra and the Brihanmumbai Municipal Corporation (BMC) launched a 24*7 toll-free helpline called 'BMC-Mpower 1on1'(Awasthi 2020). The tele-counselling support from psychiatrists and clinical psychologists is provided by Mpower, a mental healthcare institute. The service is available in three languages: English, Hindi and Marathi.

## Mansanwad

In 2017, the Government of Rajasthan launched a toll-free helpline 'Mansanwad' for dealing with mental health issues(Srinivasan 2017). The toll-free number is is 18001800018.

## Act Now

'Act Now' is a mental health initiative launched by the Times Network, the broadcast network(ETBrandEquity 2020). It is special campaign film that aims to spread awareness about mental health issues, sensitise people to normalize conversation around the issue and be responsive to the mental health needs of the people. This special film mirrors how a person living with a mental ailment is treated by the societal structures with pity, ignorance, annoyance and disbelief. The film urges people to act responsibly towards the mental health needs of the people.

## #ReachOut

"ReachOut" is a ten-day social media campaign that was launched by Fortis Healthcare and Columbia Specific Communities (CPC) amidst second COVID-19 pandemic wave in India(Healthcare Radius 2021). This ten-day mental wellness initiative aims at supporting India's senior citizens address their mental health issues. The objective of this campaign was "to provide senior citizens with free and easy access to experts who can provide them with counselling, therapy and no-judgement, confidential conversations(Healthcare Radius 2021)."

## Mann Mela

Mann Mela is India's first digital museum aimed at addressing mental health issues faced by the youth of India(Sangath 2021b). It is an initiative by Sangath, a non-governmental organization working in various states across India[11]. Mann Mela describes mental health stories from young people in the age group 18-35 years from across India (Mann Mela 2021). Mann Mela makes

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[11] https://sangath.in/

use of art and technology to exhibit first person stories of mental trauma, breaking stigma and recovery. Personal stories act as one of the powerful tool to link with people facing similar kind of mental health issues and thus aid in their recovery.

## Systematic Medical Appraisal, Referral and Treatment (SMART) Mental Health Project

SMART mental health program is a pilot initiative by the George Institute for Global Health. Under this pilot initiative, digital technology was applied for the purpose of screening, management, referral and treatment of mental health issues such as depression, stress and suicidal risk. The Project was implemented across 12 villages in West Godavari district, Andhra Pradesh, India(Pandya et al. 2020). Under the project, technology enabled electronic decision support system (EDSS) was used to facilitate delivery of mental health services by primary healthcare workers. The intervention was found to be effective in enhancing the participants understanding about Common Mental Disorders and promoting overall well-being(Tewari et al. 2021).

## POD Adventures

'POD Adventures' is a lay counsellor-guided problem solving intervention, which is delivered through a smartphone app in secondary schools in India[12]. The app has been developed as a part of project PRIDE, one of the world's largest adolescent mental health research programmes at Sangath ( a Goa-based mental health research organisation in India)[13].The app has been built around three problem-solving steps: (1) Problem identification, (2) Option generation, and (3) creating a 'Do it' plan.

"***POD Adventures is a smartphone based-game that teaches problem-solving skills through interactive animated stories, skill-based mini-games and quizzes. Personalized action plans are created by the user to help apply problem-solving skills to real-life problems and situations with support and encouragement from an in-game guide***"(Sangath 2021c).

"***The POD adventures app allows students to explore issues affecting their mental health on their own. This intervention can be applied in conjunction with a counselor, a lay-counselor, or by themselves, freeing up time for counselors who already are heavily burdened due to staff shortages***"(Chabria 2021).

Gonsalves et al.  conducted a pilot evaluation of "POD Adventures" app and found that the app is engaging, easy to use and helpful in solving the student's problems(Gonsalves et al. 2021) . The evaluation concluded that "POD Adventures was feasible to deliver with guidance from lay counsellors in Indian schools, acceptable to participants and associated with large improvements in problem severity and mental health symptom severity"(Gonsalves et al. 2021).

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[12] https://podadventures.in/
[13] https://sangath.in/pride/

## Digital Initiatives by Startups

### Inner Hour

Inner Hour is a Mumbai based startup founded by two psychiatrists, Dr Amit Mailk and Dr Shefali Batra in the year 2016[14]. It is an app-based platform that aims to reduce the gap between the patients and mental healthcare providers by providing online counselling and therapy. The app has been developed under the guidance of mental health experts and can be used by anyone above 18 years. It empowers users to overcome their emotional and mental hardships and ensure that they are happy and healthy(Pothula 2020).

### Trijog

Trijog is a Mumbai based startup launched in the year 2014 that offers mental health wellness solutions including online counselling services for a variety of clients: individuals, organisations and corporates[15]. It is affiliated with the Rehabilitation Council of India (RCI).

### ePsyclinic

ePsyclinic is a Gurgaon based startup launched in the year 2015 that offers curated specialised digital counselling sessions including 24*7 free online chat support for women, frontline health workers, senior citizens and working professionals[16]. In 2017, ePsyclinic team launched an app 'IWill' which comprises more than 45 in-house counsellors and therapists(Pothula 2020).

### YourDOST

YourDOST is a Bengaluru based online counselling platform launched in the year 2014 that connects people to counsellors & psychologists for personal, professional and academic guidance[17]. It helps people in coping relationship issues, work stress and enhance self-image.

### Wysa

Wysa is a Bengaluru based startup launched in the year 2015[18]. It is essentially an artificial intelligence based chatbot to address issues related to mental health. It is a conversational agent that measures the user's emotions. It applies evidence-based cognitive and behavioural techniques and uses micro-actions to help the user feel better. ORCHA, the world's leading health app evaluation and adviser organisation, chose Wysa as one of the best apps for dealing with COVID-19 related stress and anxiety(Pothula 2020).

### TalktoAngel

TalktoAngel is a Delhi-based online platform dedicated towards mental health and holistic wellbeing[19].  It provides a wide range of services including individual counselling, couple counselling, corporate wellness program, tele-consultation for medication management etc.

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[14] https://yourstory.com/companies/inner-hour/amp
[15] https://yourstory.com/companies/trijog/amp
[16] https://epsyclinic.com/
[17] https://yourstory.com/companies/yourdost/amp
[18] https://yourstory.com/companies/wysa/amp
[19] https://www.talktoangel.com/

## Way Forward

It is recommended that:

- The Government of India should develop MANAS app for use by all age groups including children and elderly.
- States governments should learn from "e-Manas: Karnataka Mental Healthcare Management System" and direct efforts towards implementing a similar system in their states.
- State governments should learn from Kerala's Amma Manasu (Mother's mind) initiative and launch similar initiatives in their states to address mental disorders among women during pregnancy and post-partum.
- In order to address the shortage of mental health specialists in rural areas, state governments should support and implement initiatives which focus on leveraging community health workers for screening mental health disorders and providing basic mental health first aid.
- State governments should learn from the Karnataka Telemedicine Mentoring and Monitoring Program (KTM) and NIMHANS ECHO model for imparting training to healthcare professionals on mental health.
- To deal with the shortage of mental health experts, state governments should support and implement initiatives which focus on training non-specialists like General Medical Practitioner, psychiatric nurse, social workers etc. for delivering mental health care services, particularly in rural and remote areas.
- Tele-counselling support to students and the general public should be promoted.
- Use of technology based solutions for solving mental health issues should be promoted.
- More such initiatives like "ReachOut" social media campaign, "Act Now" special campaign film should be taken.
- Public-private partnerships to promote mental health should be strengthened.

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