

DETERMINANTS OF MENTAL HEALTH IN INDIA

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Acknowledgements

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Sattva Knowledge Institute (SKI), established in 2022, is our official knowledge platform at Sattva. The SKI platform aims to guide investment decisions for impact, shedding light on urgent problems and high potential solutions, so that stakeholders can build greater awareness and a bias towards concerted action. Our focus is on offering solutions over symptoms, carefully curating strong evidence-based research, and engaging decision-makers actively with our insights. Overall, SKI aims to shift intent and action toward greater impact by influencing leaders with knowledge. All of our content proactively leverages the capabilities, experience and proprietary data from across Sattva.

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Executive Summary

Decoding what causes diseases requires a deeper understanding of the underlying factors or determinants which affect health. These determinants do not operate in silos and interact with other factors, cumulatively driving health outcomes. Mental health is a complex issue and, much like health, is caused by a complex interplay of several factors at an individual, community and population level.

This framework for mental health addresses three key needs in the existing approaches to understanding determinants of mental health. Firstly, it adopts a broader view to break down determinants of overall health and nuances it further for mental health. Secondly, **recognising the need for a comprehensive view, this framework brings together social, cultural and economic, political, commercial, biological and environmental determinants of mental health within a four-part framework**, drawing from literature by leading organisations. Thirdly, the framework is contextualised to the Indian landscape, acknowledging the unique factors at play in this large and diverse country.

This perspective **demonstrates the complex interplay between the determinants and how their interaction can aggravate mental health outcomes, with the help of real-life personas and use cases, relevant to the Indian landscape**. Each determinant, which operates as a stressor in an individual's life, closely interacts with other determinants to create a complex set of mental health needs which require contextualised solutions. Determinants may also act as enablers which can drive positive health outcomes and aid in addressing stressors.

Ecosystem stakeholders including funders, non-profit organisations and digital and other solution providers can apply this framework to drive sustainable mental health outcomes. The framework allows a holistic understanding of all types of determinants and their interplay to view underlying stressors and situational realities of a population. **This can inform the design of solutions and interventions which recognise the root causes of mental health issues and the social, cultural and all other nuances in the Indian landscape, including systemic factors in their environment**. As a result, this enables solutions which are contextualised to the hyperlocal and diverse needs of populations to effectively drive positive mental health outcomes, and over time, reduce the prevalence of mental illness.

Background

From Robert Koch's renowned postulates to the Web of Causation hypothesis by McMahon and colleagues, many have attempted to explain the incidence of disease by describing how numerous causative elements interact like spider webs, with each element playing a different role in the ultimate breakdown of the state of health. These elements, also known as *determinants*, are crucial for forecasting an individual's prognosis. The approach to understanding determinants of health aims to identify all the factors and predictors that impact health outcomes at an individual, community and population level (Khushwaha 2009).

Recognising this, organisations such as the World Health Organization (WHO), Johns Hopkins University, Harvard Global Institute, World Bank and others have developed various conceptual frameworks for determinants of health. These frameworks broadly break down factors which determine health, showcasing how social, economic, and political aspects determine people's awareness, ability to live a healthy lifestyle, access and affordability of healthcare services, and behaviour and attitudes towards seeking healthcare, which in turn influence health outcomes.

Similar to physical health, mental health can be better understood through the lens of causative factors which determine outcomes. Research has shown that interaction between a person's genetic make-up and the environment to which they are exposed determines the kind of mental illnesses to which they may be predisposed (Khushwaha 2009).

Mental health issues arise from a complex set of factors that are internal and external to an individual. Often, the cause of mental illness in a person cannot be objectively linked to a single aetiology. Mental health of individuals and entire populations are often a complex aggregate of these myriad interactions. Organisations such as the WHO, Montreal World Health Organization, National Health Service (NHS) England, NHS Improvement and the National Collaborating Central for Mental Health have developed frameworks to understand these determinants better.

Developing a Comprehensive Framework for India

Although leading global organisations have developed frameworks on determinants of mental health, they have only considered a single determinant at a time. For example, the WHO framework on commercial determinants of mental health only explores commercial determinants, without considering other factors that may be interacting with those (WHO 2021c). Similarly, the Johns Hopkins University framework focuses solely on social determinants (Nitkin 2019). The London School of Hygiene and Tropical Medicine has made an effort to examine how policy and social determinants of health interact. It does not, however, examine the other variables (commercial, biological and so on) that interact with policy and social factors and ultimately influence health outcomes (Exworthy 2008).

Although these frameworks view a category of factors independently, these factors do not operate in silos. **The frameworks do not account for the interaction between select determinants and other factors that cumulatively drive mental health outcomes.** This outlines the need for a comprehensive framework that recognises these interactions.

Further, there is an opportunity to contextualise the framework to the Indian context. India has a unique set of factors, different from the rest of the world. India has a population of 1.39 billion living in 28 states and 8 Union Territories (UT) (World Bank 2021; Know India n.d.). Each individual has a unique set of experiences which vary based on language, culture, gender dynamics, geography, livelihood, religion, environmental biodiversity and a plethora of other factors. The diversity of the unique social, cultural, economic, political, commercial, biological and environmental landscapes in India need to be recognised to understand what drives mental health outcomes for the Indian population.

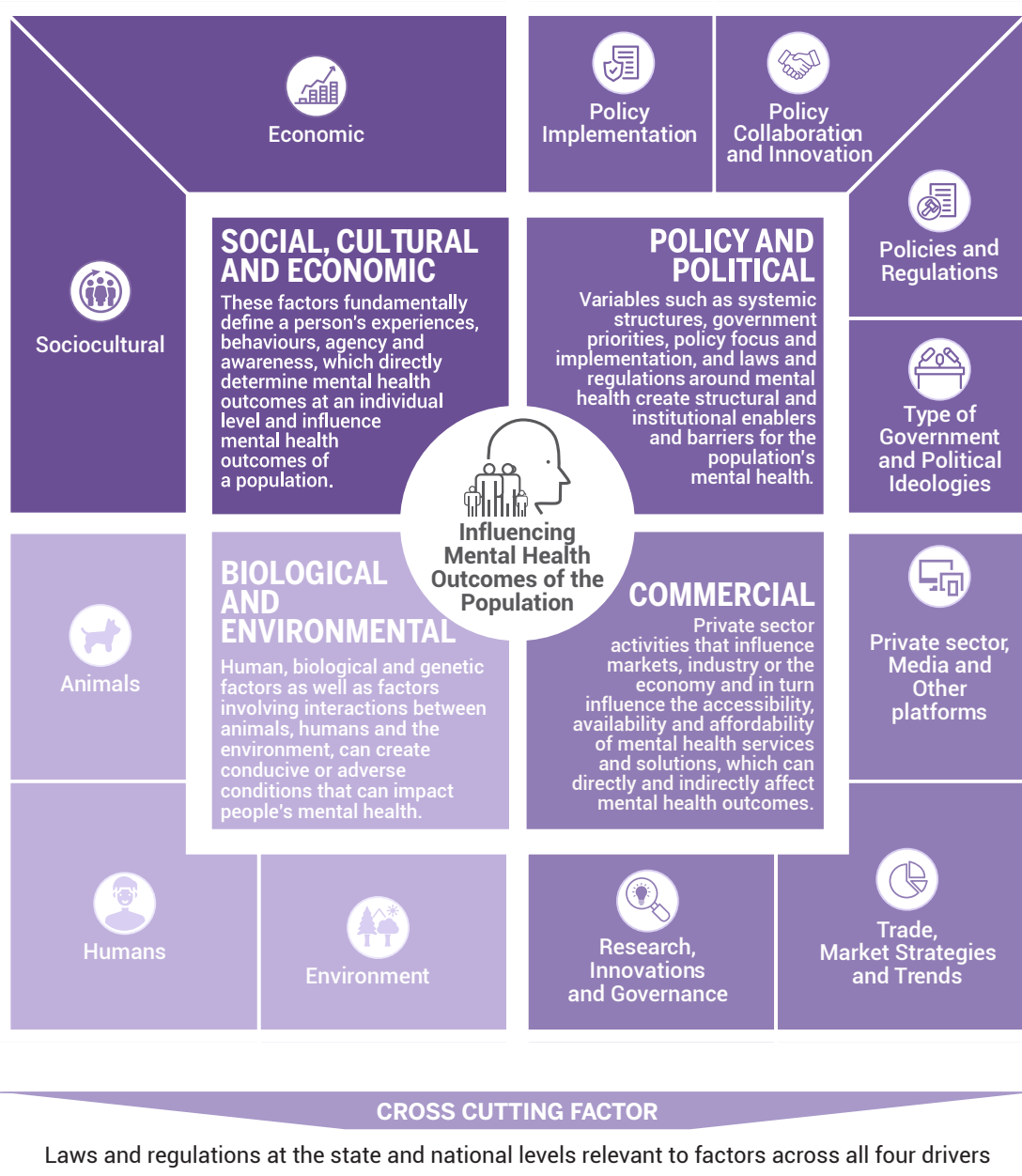
Approach to Framework Development

Recognising this need, Sattva Knowledge Institute (SKI) developed a holistic framework to understand determinants of health and illustrate how a combination of the aforementioned factors influences the population's health outcomes. This was then further nuanced and contextualised to mental health.

This framework has drawn on elements from literature and global frameworks from over twenty varied sources, including those by the WHO, World Bank, Centers for Disease Control and Prevention (CDC) and Johns Hopkins University. It has been strengthened to ensure relevance and application to the Indian context by adding pertinent components to make an all-encompassing framework. It includes factors and indicators unique to India, such as the policy implementation structure with health as a state subject, a predominantly patriarchal society with high prevalence of gender inequalities, discrimination based on caste and a very large population below the poverty line, to name a few.

Framework for Determinants of Mental Health

Figure 1: Determinants of Mental Health Framework



(Sattva 2022)

This framework on determinants of mental health (DoMH) in India categorises the determinants into four broad categories that closely interact with one another. These are:



- 1. Social, cultural and economic factors:** The social, cultural, and economic environments in which individuals are born, grow, work, live, and age, and surrounding systems influencing the conditions of daily life (WHO n.d.).

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2. Policy and political factors: Policies, systems, institutions and governmental priorities that drive mental health outcomes and equity (Satcher Health Leadership Institute n.d.).



3. Commercial factors: Commercial determinants of mental health are the different types of activities of state and non-state actors that influence the direction of a market, industry, or broader economy (WHO 2021c).



4. Biological and environmental factors: Environmental determinants of mental health are the numerous external conditions that one is exposed to (Helbich 2018) and biological determinants include characteristics intrinsic to the physiology and psychology of each individual (Remes 2021). This also includes interaction of humans and their shared environment with animals resulting in health phenomena such as vector-borne diseases or human-animal bond resulting in positive outcomes (CDC 2022).

Laws and regulations cut across all four categories of determinants, recognising, defining and regulating factors across all levers. These are critical to understand the environments in which the population lives. This framework considers laws and regulations in the Indian context. *A detailed list of indicators for each determinant under the four categories can be found in Annexures 1-4. This comprehensive view of indicators provides a foundational view of factors which could determine mental health needs, and indicates similar factors that may need to be considered. Given the constantly evolving nature of the landscape of the four levers, the need for additional indicators may emerge over time.*

EXAMPLE

Laws and regulations on social factors includes legal recognition of a third gender and lesbian, gay, bisexual, transgender, questioning, queer, intersex, asexual (LGBTQIA+) populations and their allies in a country, which directly impacts their rights and mental health outcomes. In another instance, laws and regulations on commercial factors would include laws around manufacturing, import and pricing of essential drugs and medicines, including those required for treatment of mental illnesses. This impacts their availability and affordability, thereby influencing mental health outcomes.

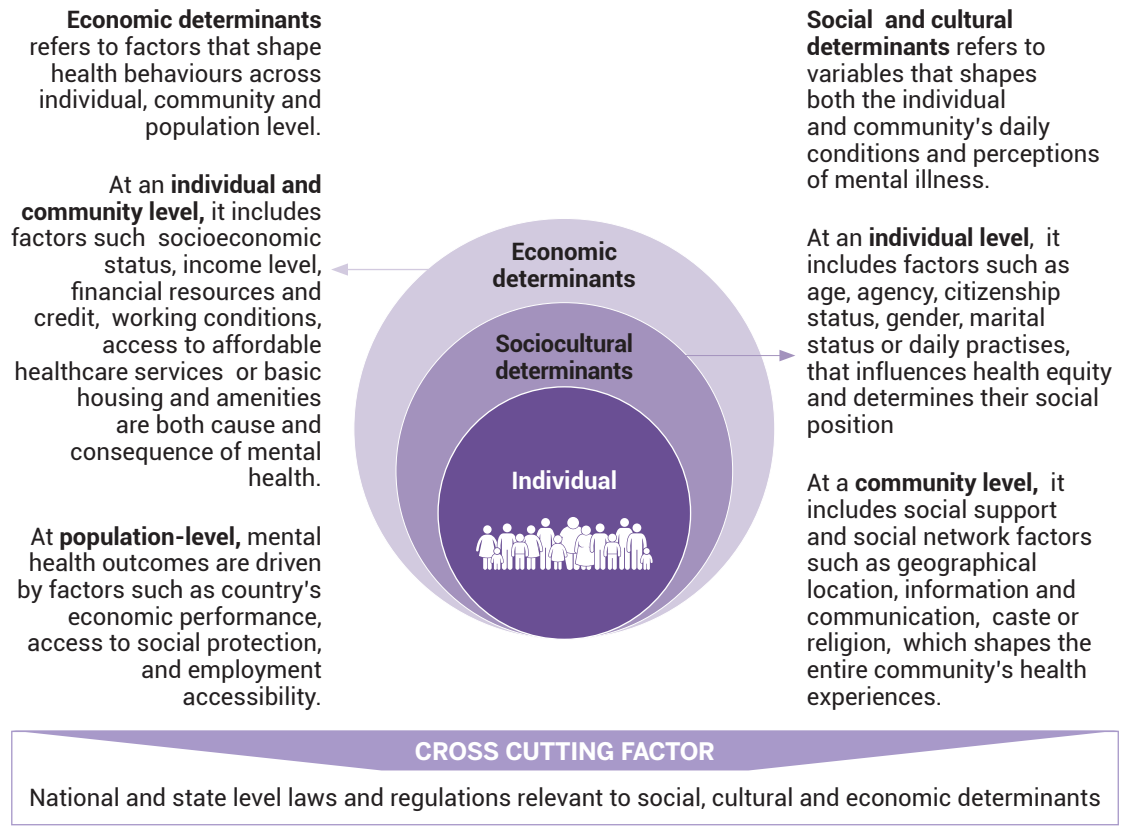


Social, cultural and economic determinants

Sociocultural factors include traditions, values, social structures and activities that influence and shape an individual's behaviour, choices and agency (Worthington & Gogne 2011). Socioeconomic determinants are factors such as income, education, employment, community safety, and social support that can influence an individual's ability to afford housing and mental health care services, make healthy choices, access stable jobs, manage stress and others (Braveman & Gottlieb 2014).

Social factors, especially in the Indian context, such as social beliefs, social structures, gender, religion, caste and marital status strongly influence an individual's mental health needs and

Figure 2: Social, Cultural and Economic Determinants of Mental Health



(Sattva 2022)

behaviours. Cultural factors including cultural practices, norms, taboos, and stigma influence perceptions and practices around mental health. These can determine needs both at individual and community levels. Socioeconomic factors such as livelihoods, access to welfare benefits, stability of income etc. determine practices, affordability and vulnerability of individuals and families. These three factors closely interact with each other, are often interdependent and are fundamental to an individual's mental health needs and outcomes.

EXAMPLE

The Indian society is entrenched in patriarchal norms and beliefs, and India reports high rates of violence against women (UNICEF n.d.). Women and girls in India do not fully enjoy many of their rights due to these patriarchal views, norms, traditions and structures (UNICEF n.d.). This aspect of the social fabric directly influences a woman's access to education, awareness, agency and by extension, access to mental healthcare. The feeling of a lack of autonomy and control over one's life is known to be associated with depression. Sexual violence is experienced more by girls and women, and there is a strong association between being sexually abused in childhood and the presence of multiple mental health problems later in life. For instance, a study on schizophrenic patients found that married men were likely to be cared for and financially supported by their wives, while married women were

EXAMPLE

more likely to be deserted, abandoned or divorced by their husbands. They were also more likely to have experienced physical abuse by their husbands prior to separation (WHO 2002).

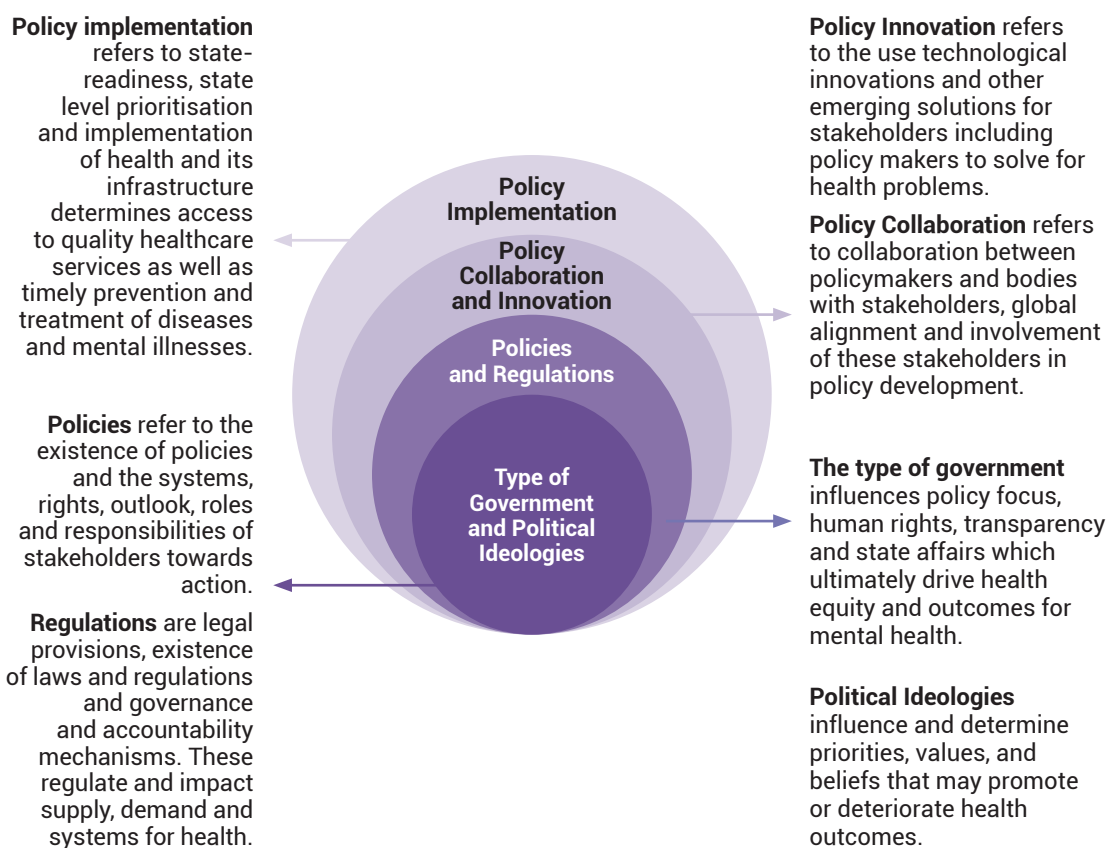


Policy and political determinants

Policy and political determinants of mental health are the causal effects of political variables (structures, processes, outputs) on population health that create structural and institutional enablers and barriers to health equity (Satcher Health Leadership Institute n.d.). These include policy prioritisation, recognition and implementation of mental health, which impact access to care and services.

At a national level, political ideologies and approaches to human rights and health influence structures and systems of physical and mental health. Policy prioritisation of mental health in the form of policy recognition, provisions and budgets directly influence stakeholder action at all levels, and creates enabling systems for care provision.

Figure 3 : Policy and Political Determinants of Mental Health



CROSS CUTTING FACTOR

National and state level laws and regulations relevant to policy and political determinants

(Sattva 2022)

India has a federal structure of governance. In the health sector, this means that the national government provides vision and funds to policies and programmes, and plays an overall stewardship role. On the other hand, state governments are responsible for the implementation, playing a larger role combining vision, leadership, funding, regulation and delivery of health care (Selvaraj et al. 2022). This impacts structures, systems and accountability for systems, resulting in state-level variations in mental health services and outcomes.

Further, policy implementation in terms of infrastructure, enabling judicial systems and allocation of resources for mental health and governance structures directly determines the focus on, and ability to enable positive mental health outcomes. All these factors, along with collaboration with other public and private actors, influence supply, demand and systems of mental health.

EXAMPLE

In India, the Mental Healthcare Act (MHCA) 2017 establishes regulations and structures for mental health systems, including the establishment and functioning of national and state authorities, and coordination within appropriate governments (Ministry of Law and Justice 2017). The Act required states to establish a State Mental Health Authority (SMHA) within a period of nine months from the date on which the Act received the assent of the President. However, states across India have varied implementation of provisions of the Act, resulting in differences in access to mental healthcare. For instance, Chhattisgarh has constituted a SMHA (as per Right to Information (RTI) response 2021) while Bihar has not set up a SMHA (as per RTI reply 2021). This disparity in state-level structures of mental health will influence mental health outcomes of residents of both states (India Mental Health Observatory n.d.).

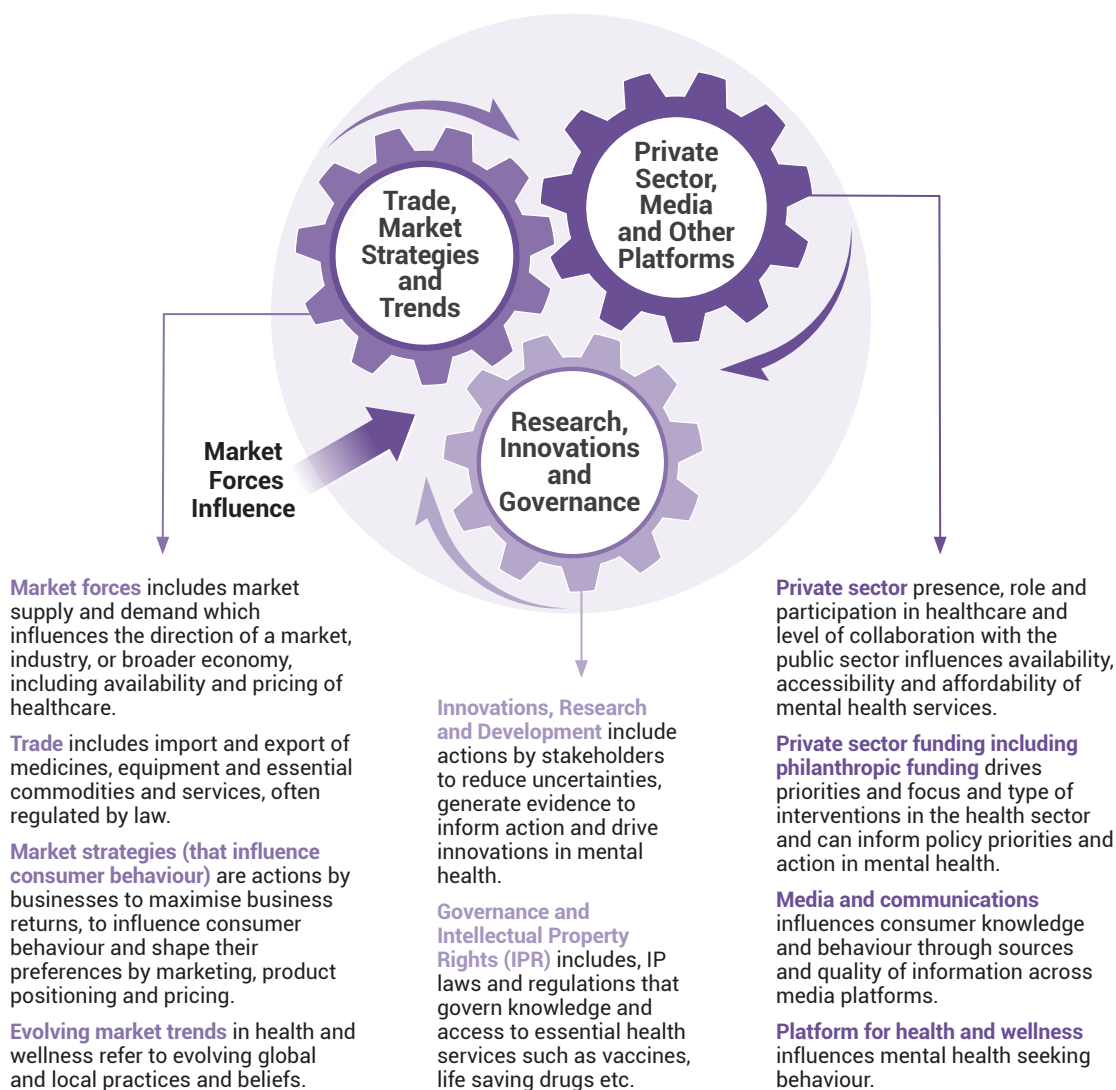


Commercial determinants

Commercial determinants of mental health are the different types of activities by state and non-state actors that influence the direction of a market, industry, or broader economy, through business actions and societal engagements such as supply chains, labour conditions, product packaging and others. The level of market influence can shape policy decisions that favour a certain target population and commercial interests, which can indirectly or directly determine the population's mental health outcomes (WHO 2021c).

Market forces influence the direction of a country's economy, industry and market. Trade regulations impact the availability and price of essential goods & services, supply chain of medicines, privatisation of distribution, and lucrative market opportunities for trained mental health professionals. These regulations, among other factors, impact access, availability and affordability of mental healthcare, and directly determine mental health outcomes of the population. Private investment, philanthropic funding, business prioritisation of mental health, innovations and solutions in mental health, are beginning to emerge as critical market factors in India.

Figure 4: Commercial Determinants of Mental Health



CROSS CUTTING FACTOR

National and state level laws and regulations relevant to commercial determinants

(Sattva 2022)

EXAMPLE

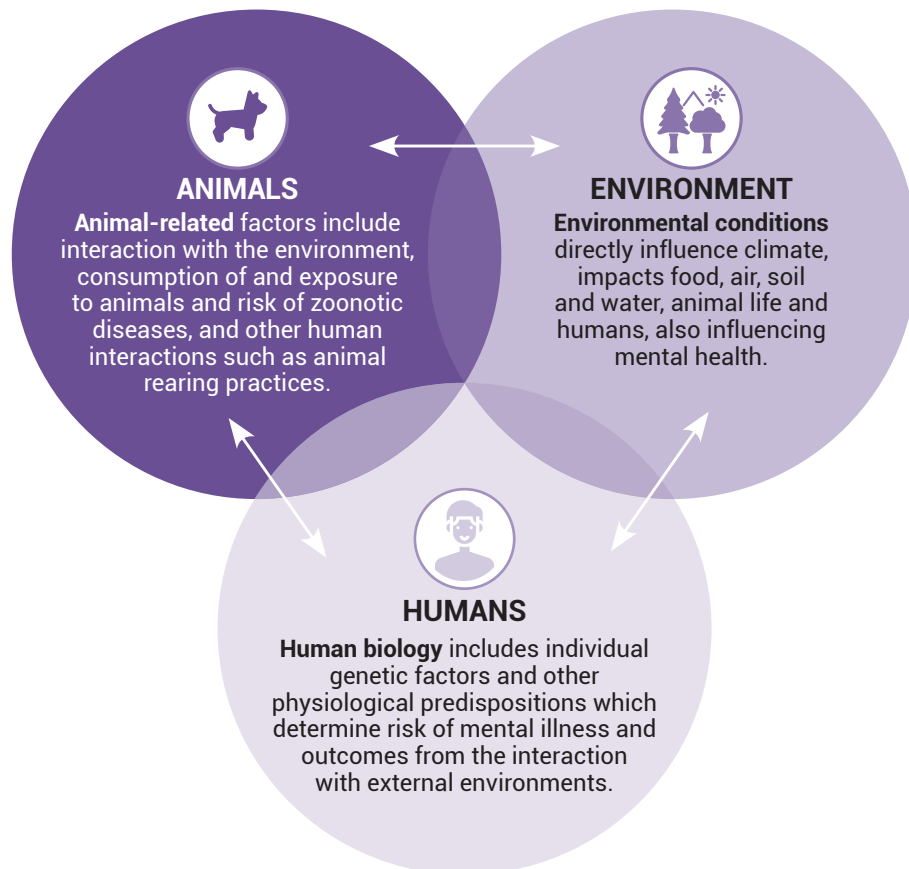
India witnessed the channelling of \$20 million in private investment towards mental health and wellness startups from 2016 to 2020 (Mittal 2021). Since the onset of the COVID-19 pandemic, there has been an increase in the number of digital solutions for mental health across the continuum of care, including those for self-care and treatment. These market factors determine the availability, accessibility and affordability of solutions for mental health, thereby determining mental health outcomes of the population.



Biological and environmental determinants

The population's mental health outcomes are influenced by the continuous interaction among the environment, animals and humans. Biological determinants include physical health, genetics, inflammatory factors, stress function and response, cognition and other psychological factors which determine mental health (Remes 2021). Biological factors, including genetic predisposition to certain diseases or prevalence of mental illness and psychiatric disorders in families can increase the risk of developing schizophrenia, depression and bipolar disorder (Rowland & Marwaha 2018). Individuals with existing mental illness have greater sensitivity to the psychological impact of different stressors, which can exacerbate their mental health (Tsuang et al. 2004)

Figure 5: Biological and Environmental Determinants of Mental Health



Interaction between animals, environment and humans results in health outcomes such as zoonotic diseases, health phenomena like antimicrobial resistance etc., which can directly or indirectly influence human mental health.

CROSS CUTTING FACTOR

National and state level laws and regulations relevant to biological and environmental determinants

(Sattva 2022)

Environmental determinants of mental health are the numerous environmental conditions that one is exposed to, such as green space, noise, air pollution, weather conditions and others, which can act as mental health stressors or facilitate stress reduction and mental recovery (Helbich 2018). Environmental factors including climatic conditions, pollution, and ecological factors form the external conditions in which people live and impact mental health needs significantly. Recent global studies showcase the strong link between climate change, rising global temperatures and its adverse impact on mental health (WHO 2021e). The occurrence of natural disasters and the resultant loss of lives, livelihoods and homes and forced migration can give rise to short-term and long-term mental health issues including stress, anxiety, depression and post traumatic stress disorder (PTSD) (WHO 2021e).

The interplay of these external factors with biological factors can also determine the risk of individuals developing mental health issues. Research has shown how **gene-environment interaction occurs when environmental influences on a trait differ according to a person's genetic predisposition**, or when a person's genetic predisposition is expressed differently in different environments (Tsuang et al. 2004).

The interaction of humans and animals can give rise to positive and adverse, physical and mental health outcomes. Human-animal bond can help improve mental well-being and research has shown positive health outcomes resulting from such interaction (CDC 2022). On the other hand, **zoonotic diseases are infectious diseases that spread from non-human animals to humans**, such as Ebola, COVID-19, and rabies (WHO 2020 a). As seen most recently with the COVID-19 pandemic, health disasters cause panic, loss of life, anxiety, fear of infection, and social isolation. It leads to adverse mental health outcomes, while also indirectly impacting mental health due to rise in other stressors such as loss of livelihood or increased rise of violence and others. Structural inequities also result in vulnerable and marginalised communities facing a higher burden of adverse health outcomes.

EXAMPLE

Research has indicated that prevalence of common mental health disorders and psychiatric morbidity are significantly higher among people affected by disasters, relative to the general population (Gray et al. 2021). Research showed that in 2004, following the tsunami disaster in Kanyakumari, 43% of males had clinically significant psychological distress, and 31% had very high levels of psychological distress. 5-8% of the population in the Andaman and Nicobar Islands was also reported to be suffering from significant mental health problems (Kar 2010). Environmental factors such as these influence mental health outcomes of populations in states such as Himachal Pradesh, Rajasthan, Tamil Nadu and Uttarakhand etc. which are prone to natural disasters such as frequent flooding, seismic activities, droughts and cyclones (National Institute of Disaster Management 2014).

The complex interplay of these internal and external factors are integral to holistically understanding the experiences and stressors of a population, and informing an understanding of their mental health needs.

Interaction between the four types of determinants

Determinants of mental health do not operate in silos. Each determinant across the four types interacts with other factors within and across levers.

Every individual operates in an ecosystem marked by a unique combination of factors. This combination in each individual's internal and external environment determines the circumstances in which they live and hence, their mental health outcomes. By extension, these interactions can also define the living circumstances of a community and that of an entire population. In doing so, every additional factor or determinant considered will have an additional impact on the population's mental health outcomes, either directly or indirectly.

When viewed as stressors, considering each additional determinant could exacerbate or worsen mental health outcomes of a population. For example, for an uneducated and unemployed woman living in a rural area (poor social and economic conditions), poor public health infrastructure and frequent natural disasters in the region (poor policy, political and environmental factors) add an additional layer of adverse factors which determine her mental health needs and outcomes.

Similarly, when viewed as enablers, each additional determinant could improve or positively influence mental health outcomes of a population. For the same uneducated and unemployed woman living in a rural area (poor social and economic conditions), strong public health infrastructure at the primary care level, ensuring prevention, promotion and ongoing screening of mental health, and access to internet and media channels (positive policy, political and commercial factors) add a layer of favourable factors which can positively impact her mental health needs and outcomes.

It is critical to recognise this interaction between determinants to holistically view all factors determining mental health outcomes.

Use Cases: Applying the Framework to Real-life Personas

This section uses real-life personas, indicative of experiences of the population in the Indian context, to illustrate the application of the framework via two use cases. Each use case highlights distinct situations based on a combination of determinants in the framework for two individual personas each and analyses mental health needs and outcomes of the personas, and suggested intervention focus.

USE CASE 1

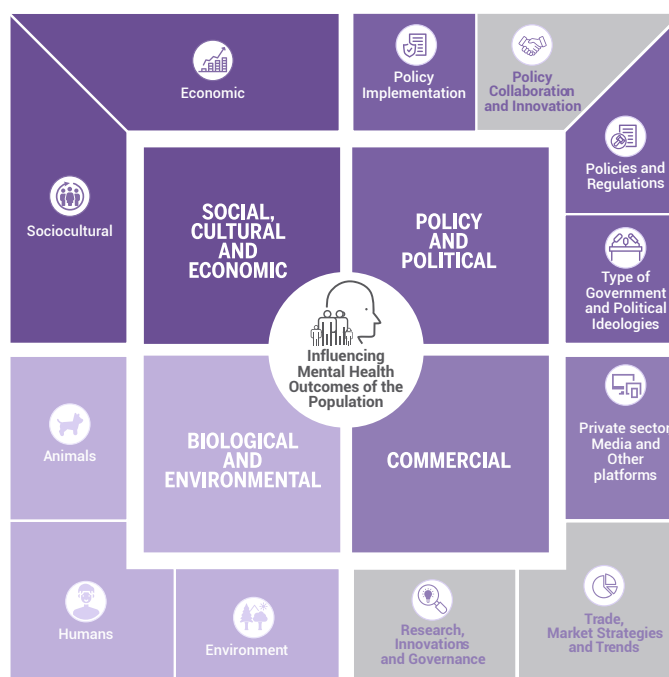
Variations across all factors resulting in varied mental health outcomes and distinct needs


Postulation: Personas with differences across all four determinants in the framework will drive different mental health outcomes and distinct mental health needs.


Neha and Mamta are from different parts of the country and have a different set of determinants defining their situations. They both have **distinct stressors and experiences**. Understanding their individual situations using the framework of determinants enables a comprehensive analysis of their unique experiences. Each unique determinant adds a layer of complexity to their individual experiences thereby influencing their mental health outcomes.


Figure 6: Identifying unique and similar determinants between Neha and Mamta



Unique determinants are highlighted in purple and common determinants are highlighted in grey, in the framework





 Neha is a **13-year-old adolescent girl** in rural settlement in Madhya Pradesh.


 She has been witnessing her **father's alcohol addiction** since she was a child and has also witnessed conflict and violence inflicted on her mother by him.


 Her parents are forcing her to **drop out of school to work and earn**, and care for her five younger siblings.


  She **does not have access to media** and there is **high stigma in school settings** for young people to talk about sensitive and personal experiences.



 The region she lives in is affected by **heat waves and droughts every year**.

 Mamta is a **43-year-old married woman** in rural Bihar.

 Her **husband is an economic migrant to Delhi** who stays away for 11 months of the years. She lives with **three children and a family of eight**. Her household has a highly restrictive culture for women, imposed by her parents-in-law.

 She is **not literate** and does not have any education.

 Her community has strong belief and **reliance on local faith healers for health issues**.

  Her environment has **poor sanitation and unhygienic living conditions** with high prevalence of vector-borne and diarrhoeal illnesses.

What they have in common:

- Poor public health systems, high cost of private health
- No information or awareness about mental illness and hence absence of health-seeking behaviour
- Gender inequalities in the society

I am scared that my **father will be violent with me** and my siblings, in the way he hits my mother every night.

I am scared that my **parents will force me to drop out of school** next year and get me to start working. I have seen many families unable to farm due to draughts and I feel obligated to earn and support my family.

I enjoy going to school but I am **unable to study because I spend most my time taking care of my five siblings** and supporting with household chores.

I have heard from my friend that front line workers (FLWs) talk about violence in homes but I feel **telling anyone else about this will only bring shame to the family**.

NEHA



I have only **witnessed ill health in my family** and people in my community, since I got married and moved here at the age of 21.

My children fall sick very often and it is very difficult for me to take care of them, because **the nearest health facility is 15 kms away** and I am not allowed to go alone anywhere.

I spend all my time taking care of my children and the needs of the family and I **do not have many friends here. I do not have a mobile phone** and use my mother-in-law's phone to talk to my family.

MAMTA



ANALYSIS OF THEIR MENTAL HEALTH NEEDS



In terms of **sociocultural factors**, both Neha and Mamta live in rural communities where they have poor access to public health services, and have limited awareness about mental health. They face gender-based restrictions and social expectations of being a woman as part of their daily lives, and have limited empowerment. Both Neha and Mamta have unique experiences in terms of their age, family dynamics, individual experiences with family members, and agency or empowerment to seek support to actively change their situation. Despite different levels of mental distress and stressors, Mamta might feel a greater sense of isolation. **Economic stressors and their link to sociocultural factors are distinct.** Neha is expected to stop her education, care for her family and earn due to her gender. Mamta, on the other hand, has no education or agency and is bound by the economic means of her family.



In terms of **political and policy factors**, public health systems are poor at a primary healthcare level, and mental health care is absent. Mamta's limited access to healthcare facilities for treatment for physical ailments is a stressor and makes her less likely to depend on outreach services to get awareness about mental health. Neha, on the other hand, lives in a state with a slightly better functioning public mental health programme with greater accessibility to FLWs but limited autonomy. Inadequate systems for mental health and limited access to existing systems, combined with lack of health-seeking behaviour arising from socio-cultural factors worsens the problem.



In terms of **commercial factors**, Neha's lack of access to media platforms which restricts her sources of information about mental health. However, the presence of non-profit organisations and private sector solution providers varies in both states and is likely to be higher for Neha. Both Neha and Mamta may benefit more from in-person mental health literacy interventions and will need to be engaged through physical touch points, with lower reliance on media-based solutions. Neha's school provides regular touch points, but she is still at risk due to social factors, while healthcare facilities and outreach services might be the most consistent points of access to Mamta.



In terms of **environmental factors**, both face distinct adverse conditions. Poor physical health of her children and high risk of further illness acts as a continued stressors for Mamta, further exacerbated by policy-level factors of inaccessible healthcare facilities. Heat waves and droughts have exacerbated economic stressors for Neha's family which, combined with gender inequalities, is driving poor mental health outcomes for Neha.

DESIGNING RELEVANT SOLUTIONS

Neha and Mamta have distinct mental health needs and outcomes. The differences in their experiences are a result of a complex interaction of social, cultural, political, policy, commercial, biological and environmental factors.

Neha's adverse adolescent experiences can aggravate her risk for mental health issues later in life, calling for a strong focus on prevention, promotion and treatment. Despite inadequate public health systems, there are non-profit organisations working in her state that can play a critical role in reaching out to adolescents in and out of schools, while adopting community based-approaches to addressing the stigma and taboo around mental health.



Mamta's limited exposure, agency and awareness could indicate her inability to recognise her own mental health needs. Safe and private spaces for women can provide Mamta a platform to connect with women with similar experiences and encourage mental health-seeking behaviour. Poor access to healthcare facilities can be addressed by greater focus on household-level engagement by FLWs, leveraging a trust-based relationship. Interventions will require a strong focus on mental health literacy, recognising the strong reliance on faith healers in the community.



A 360-degree view of their context using this framework highlights complex factors at play for Neha and Mamta, and also brings to light systemic levers which can be leveraged or need to be strengthened in order to improve mental health outcomes.

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USE CASE 2

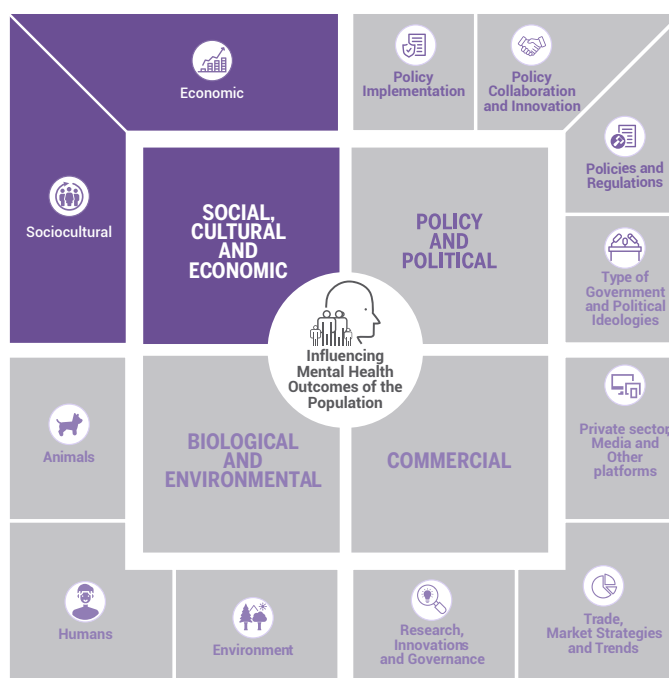
Varied social, cultural and economic factors, with all other factors being the same, resulting in varied mental health outcomes


Postulation: Personas with differences in only in socio-cultural and economic determinants, with all other determinants in the framework being the same, can also drive different mental health outcomes.


Kishore and Lakhan have **different socio-cultural and economic situations, but also have a lot of similarities in terms of all other factors.** However, their mental state-of-mind, stressors and individual experiences, are unique. Understanding their individual situations using the framework of determinants enables a comprehensive analysis of their unique experiences and interaction between factors. The interaction of their socio-cultural and economic factors with other determinants drives different mental health outcomes for both personas.


Figure 7: Identifying unique and similar determinants between Kishore and Lakhan



Unique determinants are highlighted in purple and common determinants are highlighted in grey, in the framework





 This is Kishore. He is a **35 year old male** in rural region in Maharashtra.


 He belongs to a **minority caste group** in his community.



 He lives with in a **family of 6 with four daughters** of marriageable age.

  He is a **farmer** and falls below the poverty-line.

 This is Lakhan. He is a **31 year old male** in rural region in Maharashtra.

 He belongs to a **minority caste group** in his community.

 He lives with in a **family of 8 with two sons**.

  He is a **farmer** and falls below the poverty-line.

What they have in common:

- Same district with good public-health infrastructure
- Monthly visits by trained mental health professionals at the nearby PHC
- Access to essential medicines in the nearby health facility
 - Poor water and soil quality
- Challenges in accessing social-welfare

So many farmers known to me have lost their lives to suicide. This is the **third year of a failed crop season** and I am struggling to meet the financial needs of the family.

Moreover I have **4 daughters to be married** in next few years and I must make sure that it is done well and meets the expectations of the groom's family. I will **probably need to borrow a hefty loan** to make this possible and I don't know when I will be able to repay it.

KISHORE



So many farmers known to me have lost their lives to suicide. This is the **third year of a failed crop season** and I am struggling to meet the financial needs of the family.

But once both **my sons are going to start working in the next year** and hopefully they can support the family. I have invested in their education and if it pays off, I can stop worrying about my yield.

LAKHAN



ANALYSIS OF THEIR MENTAL HEALTH NEEDS



In terms of **sociocultural factors**, both Kishore and Lakhan live in rural communities which have stigma associated with mental health and limited awareness about it.

At an individual level, both have varied circumstances, stressors and support in their families, that affect their mental health in different ways. Gender biased social attitudes and practices have created undue pressure for Kishore to get his daughters married, but have allowed Lakhan to invest in his sons' education without stigma, and enable them their economic empowerment. Further, due to the lack of awareness and the social pressure of being the head of their families, both of them are unable to talk about their mental distress. The high prevalence of suicides have also created an environment of fear and distress in the community.



In terms of **economic factors**, Kishore and Lakhan are poor and struggling to support their families financially due to crop losses. Directly linked to the policy and political factors, their situation is further exacerbated due to the challenges in availing welfare benefits. Their financial stressors are also closely linked to the socio-cultural practices and attitudes in their community because of which Kishore is required incur substantially large economic costs for his daughters' marriages while meeting social expectations, while Lakhan is not expected to incur these costs as a parent to sons. In a community where males are expected to provide for the family and females are expected to care for the household, Lakhan can rely on his sons to financially support his family but Kishore cannot.



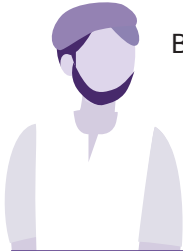
In terms of **policy and political factors**, Kishore and Lakhan live in the same region and hence have the same environment in terms of state-level prioritisation of mental health and policy implementation in their district and village. Mental health services are available in their district but inaccessible due to distance. However, despite some mental health services available at the facility, preventive and promotive activities have not been undertaken and hence community members are unaware and lack mental health-seeking behaviour. In addition, outreach services to households in terms of routine screening, identification of symptoms, counselling or even referrals to the nearby facilities for mental health does not take place. These symptoms of mental distress in Kishore and Lakhan were not identified by FLWs who may have visited their households for other healthcare services, pointing to gaps in the capacity building of providers.



Living in the same region with an area with poor water and soil quality, Kishore and Lakhan have witnessed three failed crop seasons and these **poor environmental factors** have directly impacted livelihoods of farmers, in the absence of any support from the government. It is a critical factor affecting their mental health and has resulted in suicides among other farmers in the region, As a result, mental health outcomes of the entire community are driven by worsening environmental conditions in the region and requires both preventive and treatment focused solutions.

DESIGNING RELEVANT INTERVENTIONS

Despite similarities in other factors, Kishore and Lakhan have different mental health outcomes due to differences in socio-cultural and economic factors and the unique interaction of these factors with other determinants which drive unique needs.



Both Kishore and Lakhan are faced with mental distress in the light of unstable incomes and environmental challenges which pose a threat to their livelihood. Policy-led interventions to enable access to social welfare will be critical, and can be enabled by advocacy by local leaders and interventions by non-profit organisations.



However, Kishore is at a higher risk of poor mental health than Lakhan, considering his family's circumstances, gender biased socio-cultural practices and lack of any support.

For mental health interventions to be effective, populations and communities in the same regions and with seemingly similar contexts will have to be viewed as a group of individuals with unique experiences and varied mental health needs, such as Kishore and Lakhan. This will be critical to ensure the mental health solutions are contextualised and can drive the desired mental health outcomes for everyone.

Using this framework also **highlights systemic gaps** in mental health which need to be addressed in order to enable improved mental health outcomes.

Firstly, mental health services in nearby facilities remain underutilised. Interventions are needed to promote mental health literacy, educate communities about the services available and focus on community-based outreach programmes to drive awareness and address barriers in limited access to facilities.

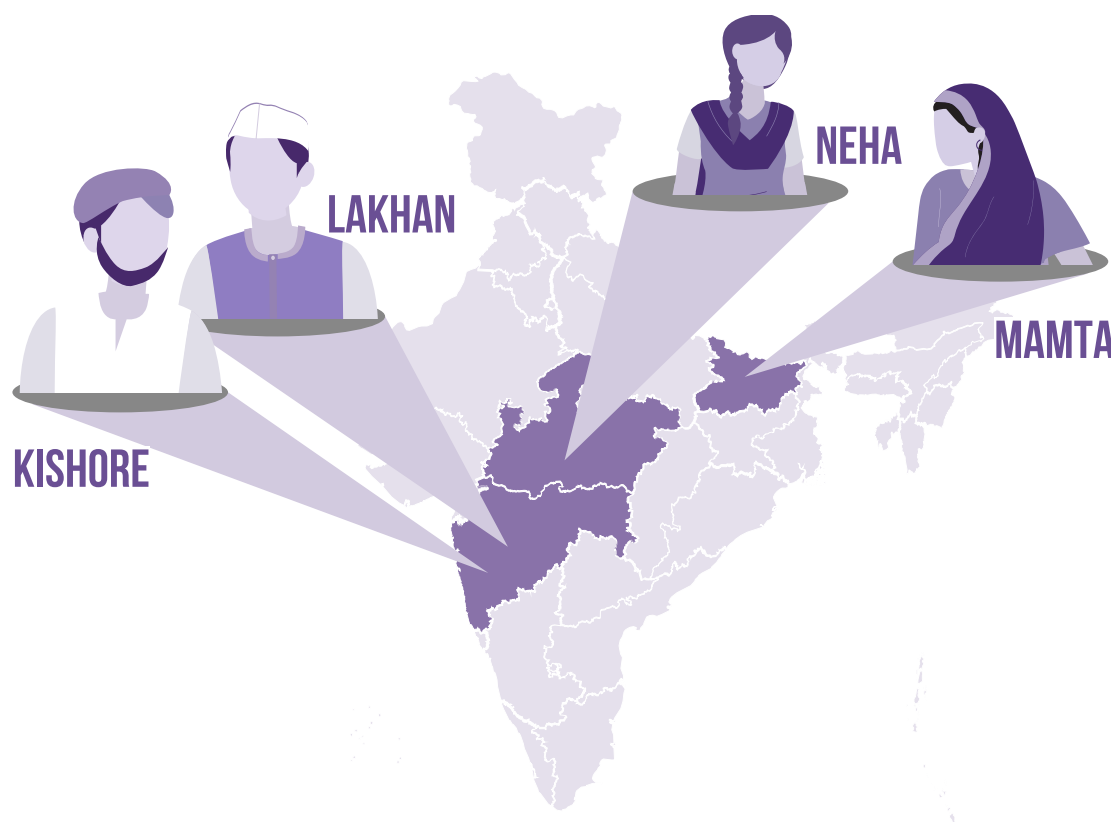
Secondly, the rise in death by suicides due to the impact of droughts on farmer livelihoods is critical to address. Preventive and promotive interventions should recognise the need for mental health support among farmers in the region. Since Kishore, Lakhan and other farmers in the community might have acquaintances with others in the same profession, there is an opportunity to create a dialogue about their common struggles and addressing the issue of mental distress and death by suicides. This can help in providing support in a culturally appropriate and acceptable way, while also preventing mental health outcomes from worsening.

Conclusion

Applying the framework to enable effective solutions

The DoMH framework enables stakeholders in the ecosystem to understand the underlying and interrelated determinants of mental health, which do not operate in silos, and adopt a complete view to drive mental health outcomes. The framework can be applied at two levels. Firstly, it can enable a 360-degree view of stressors which determine mental health needs and factors contributing to mental well-being. Secondly, it can inform the design of holistic, relevant and contextual solutions across the continuum of care.

Figure 8: Applying the framework to understand root causes of mental health outcomes to inform effective solutions



At a community level, the framework can help understand the determinants of mental health outcomes for individuals within that community, like Kishore, Lakhan, Neha, and Mamta and thereby inform how solutions should be customised to local needs.

This approach can potentially inform state-level solutions, recognising regional variations and commonalities at play for populations in the state.

(Sattva 2022)

This provides an opportunity for:

- **Philanthropic entities** to be guided by a systemic view of needs and problems, and invest in solutions that recognise and address all types of determinants to drive sustainable impact;
- **Non-governmental organisations** to implement solutions which cater to the needs of individuals, vulnerable groups and communities overall, recognising the root causes of mental health issues and systemic enablers and
- **Solution providers**, including those offering technology solutions and digital innovations, to design interventions that move beyond a treatment-focused approach and recognise the unique and diverse needs of individuals and communities at large, as a result of the complex interplay of all the determinants.

Identifying specific needs and interplay of determinants in a given context

Every determinant of mental health adds a layer of complexity, and calls for a nuanced view of the circumstances an individual or population operates in. This framework aims to provide a comprehensive view of all factors, customised to India, which could determine mental health needs at an individual and population level. Stakeholders will have to recognise the unique determinants at play in India, down to the community level, to understand the population's peculiar mental health needs.

EXAMPLE

The Atmiyata programme by the Centre for Mental Health Law and Policy (CMHLP) taps into social capital and encourages community members to help their fellow members through supportive techniques to enhance well-being, mental health and improve socio-economic conditions. Customising its approach to the needs of the local contexts, it discourages use of technical or clinical terminology and instead uses terms like "stress of day-to-day living" and "distress" which are commonly used by the local population (Shields-Zeeman et al. 2017). The intervention recognises the interplay of local sociocultural factors such as caste, gender, religion and language and incorporated these elements as part of the design and implementation of the intervention with the communities (WHO 2021 f; CMHLP n.d.).

Informing solution design

Effective interventions and solutions for mental health call for a holistic and contextualised approach. Interventions across the continuum of care – prevention, promotion, screening, treatment and surveillance, rehabilitation, reintegration and follow-up – should recognise all factors which determine mental health of individuals.

Contextualising solutions to recognise and address root causes of mental health issues of a target population can ensure greater impact. This can help design solutions which do not limit the solution to treating mental health issues but expand its view to focus also on underlying factors and effectively address their prevalence.

EXAMPLE

In order to improve mental health outcomes for women survivors of domestic abuse, solution providers should first apply the framework to holistically understand the factors which form an integral part of the environment in which the women live. For women survivors of violence, economic factors such as poverty and unemployment, and social factors such as weak legal sanctions, limited education and social norms supportive of violence (Daruwalla 2019) are integral determinants of mental health outcomes. Recognising the interplay of these determinants will be critical to design impactful mental health solutions for this target group of women.

Contextualising existing and new solutions to local environments is imperative to drive positive outcomes. Solutions can drive positive mental health outcomes more effectively by recognising and addressing hyperlocal needs and environments in which individuals and communities live.

EXAMPLE

Applying the framework to understand the local context of a community in rural Bihar may highlight stark differences from that of a community in rural Tamil Nadu. This might highlight factors unique to their context – economic migration, inadequate public health infrastructure, poor internet access, gender dynamics and flood-prone regions – an interplay of which drives poor mental health outcomes for the population in Bihar. For the solution to be effective in Bihar as it was in Tamil Nadu, the intervention will need to be contextualised with these factors in consideration.

Linking this approach of understanding the determinants of mental health to a theory of change can help elucidate how a project, policy, strategy, programme, or other initiative contributes towards the intended mental health outcome through a series of early and intermediate outcomes (Serrat 2017; UNDG n.d.). With a view of the entire spectrum of indicators that could possibly define mental health outcomes, interventions can be more impactful and cost-effective, drive sustainable impact and ultimately reduce prevalence of mental health issues.

Annexure 1

Indicators for Social, Cultural and Economic Determinants of Mental Health

Social, cultural and economic determinants	Indicators
Social and cultural determinants	
Caste Caste influences health equity.	<ul style="list-style-type: none"> • Social constructs based on caste • Caste minorities or lower castes, as identified by social practices and beliefs • Social status and social structures built around castes • Stereotypes, prejudices, discrimination based on caste
Religion Religion influences health practices and beliefs.	<ul style="list-style-type: none"> • Religious majorities and minorities • Religious practices • Influence of religious leaders • Stereotypes, prejudices, discrimination based on religion • Religious belief (supernatural beliefs about mental illnesses and role of God, faith leaders or practitioners in curing mental illnesses)
Age Each age group is prone to certain illnesses and conditions. As people age, they become more susceptible to disease and disability.	<ul style="list-style-type: none"> • Prenatal • Infancy • Early childhood • Youth and adolescent population • Working and reproductive age • Old or ageing population
Early Childhood Development Adverse experiences in adolescence and disruptions in early childhood development (ECD) can impair a child's mental capacities for learning and social engagement, potentially creating lifelong implications.	<ul style="list-style-type: none"> • Mother's health during pregnancy (eg. nutrition, mental health issues, smoking, alcohol or other substance use) • Mother-child socio-emotional bonding • Adverse early life experiences (child's exposure to abuse, neglect, and household dysfunction, divorces or single parents) • Percentage of children with a parent who has a mental illness
Social Circumstances Social circumstances such as interpersonal, family and community dynamics determine mental well-being of an individual.	<ul style="list-style-type: none"> • Social isolation or inclusion • Presence of supportive relationships • Influence of caregivers and availability of home based care • Family bonding • Nature of family setting - nuclear family or joint family • Interpersonal relations with members of the household • Civic engagement • Perceived position and value in society
Gender Gender determines health-seeking behaviour and equity in access to healthcare.	<ul style="list-style-type: none"> • Inequalities against LGBTQIA+ population • Social perceptions and attitudes about genders and gender roles • Prevalence of gender-based discrimination • Prevalence of gender-based violence (GBV), intimate partner violence, marital rape, rape • Prevalence of early or forced marriage

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<p>Geography Geographical location (rural, urban or remote locations) determines availability, quality and access to healthcare services.</p>	<ul style="list-style-type: none"> • Urban-rural classification of population • Access to basic mobility and transportation • Access to community spaces • Districts based on performance based on key development indicators • Districts categorised by other development indices and developmental focus on certain geographies eg. aspirational districts • Disaster Risk Index (DRIs) (Chakrabarti n.d.) • The Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index (summarising a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience)
<p>Ethnicity and race Ethnicity and race determine people's behaviours, beliefs, experience of, and access to healthcare.</p>	<ul style="list-style-type: none"> • Percentage of ethnic and racial minorities • Percentage of tribal populations • Stereotypes, prejudices, discrimination based on race and ethnicity
<p>Agency Agency is the ability to make decisions and act on one's health, which determines health-seeking behaviour and outcomes.</p>	<ul style="list-style-type: none"> • Level of agency and decision making abilities • Opportunity for self-determination and control over one's life
<p>Marital status Marital status impacts socio-cultural norms and practices around health, decision making and affordability of healthcare.</p>	<ul style="list-style-type: none"> • Average age at marriage • Perceived agency of married people • Cultural norms and practices of married people • Perceived stigma in society around practices of married people
<p>Language Language barriers affect access to healthcare and awareness about health programmes or services.</p>	<ul style="list-style-type: none"> • Percentage of recognised languages • Percentage of population speaking more than one language • Language barriers in healthcare provision and access, including language-based inclusion in digital solutions
<p>Crime and violence Crime and violence experienced by individuals living in a community impacts health-seeking behaviour and mental health outcomes.</p>	<ul style="list-style-type: none"> • Prevalence of crime • Prevalence of trafficking • Prevalence of other forms of violence • Victims of adverse childhood experiences (ACEs) • Safety of neighbourhoods (eg. people who fear crime in their communities may engage in less physical activity) • Trust in police authorities to address crime and violence • Perceived lack of safety, especially among vulnerable groups
<p>Disability Disability determines health experiences. People with disability encounter a range of barriers when they attempt to access healthcare.</p>	<ul style="list-style-type: none"> • Prevalence of neurological conditions • Physical disability • Disability-adjusted life years (DALY) • Prevalence years of healthy life lost due to disability (YLDs)
<p>Mental health issues Mental health issues among populations based on a complex set of determinants at play influence health outcomes.</p>	<ul style="list-style-type: none"> • Prevalence of various kind of mental health disorders (eg. severe mental disorders, mood-based disorders, substance-use disorders etc.) • Prevalence of death by suicide • Rate of mental disorders • Prevalence of stress, mental distress and common mental health disorders
<p>Citizenship Citizenship determines access to healthcare services and government benefits.</p>	<ul style="list-style-type: none"> • Percentage of refugees • Rights of non-citizen residents • Percentage of people affected by emergencies • Percentage of illegal or undocumented migrants

<p>Information and communication Information and communication determines one's access to health information.</p>	<ul style="list-style-type: none"> • Ownership of a mobile phone • Digital literacy and use of smartphones • Access to media • Patterns of media and social media consumption • Access to internet • Access to community-level and other platforms of information
<p>Daily practices Beliefs and practices such as dietary preferences, traditional customs or social norms determines health outcomes.</p>	<ul style="list-style-type: none"> • Diet and eating habits • Exercise and physical activity • Sleep quality • Awareness about impact of daily practices on mental health well-being • Social accepted wellbeing practices
<p>Substance use Substance use and abuse influence mental health outcomes.</p>	<ul style="list-style-type: none"> • Consumption of tobacco, alcohol and other intoxicants • Prevalence of smoking • Social and cultural attitudes towards consumption of substances
<p>Literacy and education (access, quality and Early Childhood Care and Education (ECCE)) Literacy and education influence health-seeking behaviour and awareness, which is determined by prioritisation of mental health in educational curriculums.</p>	<ul style="list-style-type: none"> • Literacy rate • Annual Status of Education Report (ASER) • Access to basic education • Percentage of students enrolled in formal education • Enrolment in secondary education • Enrolment in higher studies • Percentage of secondary education school dropouts • Percentage of out-of-school children • Quality of education • Prevalence of Social-Emotional Learning (SEL) curriculum, including life skills and other development curriculum, for instance, the Happiness Curriculum introduced by the Government of Delhi • Percentage of people with learning disabilities • Prevalence of mental health in the curriculum
<p>Economic determinants</p>	
<p>Economic status of a country A country's economic growth or deterioration determines people's ability to find employment, stable income, food security and other factors, thereby influencing mental health.</p>	<ul style="list-style-type: none"> • Gross Domestic Product (GDP) • Gross savings (Percentage of GDP) • Final consumption expenditure (Percentage of GDP) • Gross capital formation (Percentage of GDP) • Export of goods and services (Percentage of GDP) • Import of goods and services (Percentage of GDP) • Consumer price index (CPI) • Export and Import Value Index • Unemployment as a percentage of total labour force (modelled ILO estimates)(World Bank n.d. b) • Agriculture, value added per worker (constant 2010 US\$ i.e. dollar figures for GDP are converted from domestic currencies using 2010 official exchange rates as a standard practice) • Industry, value added per worker (constant 2010 US\$) • Services, value added per worker (constant 2010 US\$) • Rate of unemployment • Human Development Index (HDI)

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<p>Employment and working conditions The nature of employment and working conditions such as occupational safety and health of workers, nature of employment and other factors affect the mental health of the working population.</p>	<ul style="list-style-type: none"> • Work force participation according to sector (formal or informal) • Job opportunities and disruptions according to sector • Wage disparities and discrimination • Nature of employment such as migrant labour, sex workers, healthcare workers, ragpickers etc. • Proportion of workforce exposed to harmful working conditions • Job security across sectors • Employment opportunities for people with mental disabilities and disorders • Availability of vocational rehabilitation for people with severe mental illness • Working conditions such as work pressure and stress related to employment, night shifts etc. • Job satisfaction
<p>Income, social protection, access to finance Access to income, social protection and finance to bridge inequalities reduce the risk of poverty and increase the resources available to individuals and families.</p>	<ul style="list-style-type: none"> • Population below poverty line • Population at risk of moving below poverty line (BPL) • Availability of social protection schemes • Penetration of social protection schemes • Access to financial resources and credit (formal or informal) • Availability of a bank account (self, joint or others) • Debt level
<p>Access to affordable and quality health services Access to affordable and quality health services impacts a person's overall physical, social, and mental health status and quality of life.</p>	<ul style="list-style-type: none"> • Access to primary healthcare • Distance from nearest health facility, both public and private • Access to mental health services • Access to affordable mental health services
<p>Access to basic amenities and housing Access to housing and basic amenities is a fundamental factor for good health and wellbeing.</p>	<ul style="list-style-type: none"> • Access to housing • Quality of housing • Population density in terms of crowded housing • Prevalence of homelessness • % of migratory or moving population • Access to basic drinking water services • Access to basic hygiene facilities • Access to basic sanitation services • Food security
<p>Laws and Regulations (applicable to indicators under social and cultural determinants)</p>	
<p>Laws and Regulations Laws and regulations at the state and national level around social, cultural and economic determinants</p>	<ul style="list-style-type: none"> • Legal age of marriage • Legally recognised genders • Criminalisation of homosexuality • Legally recognised rights (education, health, sanitation, housing) • Social protection regulations • Paid parental leave in the formal sector • Mental health provisions and support at work eg. employer mental health support through Employee Assistance Programmes (EAP)

Annexure 2

Indicators for Policy and Political Determinants of Mental Health

Policy and political determinants	Indicators
Type of government and political ideologies	
<p>Type of government and government ideologies Type of government, governance and government ideologies influence policy, data, transparency and state affairs and directly influences health priorities and outcomes.</p>	<ul style="list-style-type: none"> • Type of political ideology of the ruling party • Type of government (eg. democracy) • Voting Rights • Ideologies of the government with respect to health and health equity
<p>Political stability and freedom Stability of the government and government systems and freedom of citizens influences priority and availability of health services.</p>	<ul style="list-style-type: none"> • Political stability of the government • Political stability index • Prevalence of political extremism • Prevalence of war, protests, and other forms of political unrest • Tenure of the current or last government • Recognised freedom of citizens
<p>Rights and health Human rights for health include the individual's right to make decisions about their own body, and recognition of human rights for patients and disabled populations.</p>	<ul style="list-style-type: none"> • Recognised rights of mentally ill populations • Recognised rights of disabled populations • Basic healthcare included in rights • Recognition of quality, access and knowledge about health as basic rights of citizens
Policies and regulations	
<p>Law and regulations According to WHO (2020), "Laws are critical to organising and regulating health systems and services, protecting rights, and preventing and managing public health risks." Legal provisions, and existence of laws and regulations around health affect health outcomes across the spectrum.</p>	<ul style="list-style-type: none"> • Prevalence of laws around health • Prevalence of regulations around implementation of health such as availability, access, delivery, quality, training etc. • Prevalence of redressal mechanism • Government accountability for implementation of regulations • Measures to ensure effective implementation • Legal rights of the persons with mental illnesses • Laws and regulations for therapeutic services
<p>Existence of policies and programmes Existence of policies and programmes influences prevention and treatment of diseases.</p>	<ul style="list-style-type: none"> • Aspects of healthcare which have a national policy • Aspects of healthcare which do not have a national policy • Aspects of healthcare which are not recognised in the public health system • Recognition of inequity and exclusion in formulation of policy • National Policy on mental health • Provisions and shortcomings of mental health related policies and acts • Legislation and policies that promote mental health equity

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<p>Government budget Government spending on health impacts implementation of policies, availability of health services, out-of-pocket health expenses for the public, and determines accessibility and affordability of mental health services and medicines.</p>	<ul style="list-style-type: none"> • Budget allocation for mental health • Utilisation of the budget for mental health • State-spending on mental health • Trends and patterns in budget spending in health • Alignment with budgets in other low- and middle-income countries (LMICs) • Investment in mental health infrastructure, eg. rehabilitation centres
<p>Vaccination programmes Vaccination programmes increase protection against life-threatening diseases and require national prioritisation. Availability of timely and quality services can drive positive mental health outcomes.</p>	<ul style="list-style-type: none"> • Presence of national vaccination drives, such as drives for polio and COVID-19 in the public sector • Vaccines not covered in the Universal Immunisation Programme (UIP) • Presence of vaccination programmes in the private sector but not in the public sector, such as the Human Papillomavirus Vaccine (HPV)
<p>Universal health coverage and insurance Health insurance bridges the care and affordability gap. It increases access to healthcare services, reduces the risk of catastrophic healthcare expenditures, and improves health outcomes.</p>	<ul style="list-style-type: none"> • Recognition or prioritisation of Universal Health Coverage (UHC) • Provisions for UHC • Prevalence of health insurance at a national level • State-level insurance initiatives or policies • Coverage and exclusion of mental health conditions in the insurance • Out-of-pocket expenditure for overall health and mental health • UHC involving access to quality and affordable care for mental health • Recognition of mental health under health insurance • Laws regulating recognition of mental health under private insurance
<p>Welfare schemes Welfare schemes include government-sponsored programmes or support for individuals and families from lower socio-economic and disadvantaged sections of the society, and those with mental health issues.</p>	<ul style="list-style-type: none"> • Availability of welfare schemes • Penetration of welfare schemes • Recognised welfare schemes for people with mental illness and disabled populations • Statutory and voluntary welfare measures • Availability of welfare schemes for people with severe mental illness
<p>Taxation Taxation on critical and essential health goods and services and life-saving drugs reduces the affordability of healthcare products and affects timely prevention and treatment of diseases.</p>	<ul style="list-style-type: none"> • Tax autonomy of state and local government • Taxation on health products and equipment • Taxation on health services • Tax on essential drugs and medicines
<p>Policy collaboration and innovation</p>	
<p>Policy collaboration and alignment Policy collaboration between policymakers and bodies with organisations or stakeholders and global alignment</p>	<ul style="list-style-type: none"> • Involvement of other stakeholders in policy development such as Civil Society Organisation (CSO), private sector, beneficiaries, technical experts etc. • Alignment of national policies with global standards and policies • Collaboration with private sector for implementation

<p>Innovation and digitisation Policy innovation to solve for health problems through technology and other emerging solutions</p>	<ul style="list-style-type: none"> • Evolution of policies to incorporate recognised emerging trends and innovations, for example, food fortification as recognised by the government. • Use of technology for healthcare, such as for design, delivery etc. • Policy recognition of telemedicine and technology tools
<p>Implementation</p>	
<p>Data and transparency Focus on data and transparency of data systems impacts the efficiency of health interventions and information exchange between the citizen and the state.</p>	<ul style="list-style-type: none"> • Right to Information • Nature of data collected with respect to mental health • Availability of central patient records and data security measures • Publicly available datasets on health indicators
<p>Coordination between state and Centre Coordination between state and Centre influences delivery of healthcare services.</p>	<ul style="list-style-type: none"> • Implementation of central government schemes via states • Coordination with national bodies to support state implementation • Programme implementation plans (PIPs) and funding
<p>State-readiness and infrastructure State-readiness and infrastructure determine access to quality healthcare services as well as timely prevention and treatment of diseases.</p>	<ul style="list-style-type: none"> • Availability of overall infrastructure - power, communications, water, sanitation, roads etc • Development expenditure and total expenditure (%) for the state • Percentage of state spending on health • Number of Health Centres at all levels - Health and Welfare Centres (HWCs), Primary Health Centres (PHCs), Community Health Centres (CHCs), District Health Centres (DHCs) • Health facility density and distribution (including primary care)
<p>State-level implementation State-level prioritisation and implementation of health, in light of health as a state subject in India</p>	<ul style="list-style-type: none"> • State prioritisation of mental health • State spending on mental health • State level initiatives or schemes in mental healthcare • Establishment of state-level committees and rules for mental health • State-level systems such as committees or bodies driving and monitoring implementation of mental healthcare policies
<p>Healthcare infrastructure Systemic view of healthcare infrastructure ensures efficient allocation and use of resources.</p>	<ul style="list-style-type: none"> • Availability of mental health services in facilities • Availability of trained mental health workforce • Health Management Information System (HMIS) or supply chain management • Availability of adequate college or training facilities • Quality control • Availability of mental health institutions • Availability of adequate and standardised mental health courses
<p>Disaster-preparedness against epidemics, natural and calamities Disaster-preparedness against epidemics, natural calamities and man-made calamities influences good health and wellbeing.</p>	<ul style="list-style-type: none"> • Availability of disaster mitigation laws • Health protocols during disasters or emergencies • Type of risk mitigation measures • Type of preparedness measure • Type of emergency response • Contingency funds available for emergencies • Provision of social support during and after disasters (especially with severe impact on housing and livelihoods)

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<p>Judiciary and legal service delivery Effectiveness of the judiciary system with respect to health and delivery of legal support determining health equity.</p>	<ul style="list-style-type: none"> • Health-related trials completed in 1 to 3 years as percentage of total trials in all courts • Access to judicial services with respect to mental health • Implementation of redressal mechanisms and patient support systems for mental health
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Annexure 3

Indicators for Commercial Determinants of Mental Health

Commercial determinants	Indicators
Trade, market strategies and trends	
<p>Market forces and trade which influence the direction of a market, industry, or broader economy.</p>	<ul style="list-style-type: none"> • Trade agreements (trade relations on healthcare products) • Availability of commodity or service • Demand and supply of products • Regulated market prices of healthcare products and services • Import or export of healthcare products such as medicines, equipment, research and development, vaccines • Presence of and market control by pharmaceutical companies • Privatisation of markets • Competition in markets
<p>Market strategies (that influence consumer behaviour) These include action by businesses for maximising business returns, influencing consumer behaviour and shaping preferences by marketing, product positioning and pricing.</p>	<ul style="list-style-type: none"> • Advertising on health, including false or biased advertising, public interest information through advertising, social media marketing • Affordability of mental health products, for example pricing of essential medicines, equipments or drugs (eg. Maximum Retail Price (MRP) for retail drugs) • Availability and accessibility to private sector resources and facilities (Eg. medical diagnostic equipment) • Product design, supply chain retail distribution etc. of products related to health of individuals
<p>Market trends Evolving market trends in health and wellness can drive positive or negative mental health outcomes.</p>	<ul style="list-style-type: none"> • Trends in healthcare which can impact mental health outcomes, eg. increased focus on wellness, trends in dieting, gluten-free products, meditation etc. • Employer wellness programmes and initiatives
Research, innovation and governance	
<p>Innovations, research and development (R&D) Actions by businesses, government, philanthropists, NGOs and other market actors to reduce uncertainties and generate evidence in health.</p>	<ul style="list-style-type: none"> • Actors engaged in R&D • Investment made in R&D and innovations in mental health • Archetypes of actors engaged in evidence • Focus on mental health innovations and research • Product regulatory clearance patterns for innovations • Presence of technology solutions to health. For example, application-based solutions • Institutionalised channels for testing and adoption of digital solutions for mental health

<p>Governance and IPR Laws and regulations that govern knowledge and access to essential health services (vaccine, life saving drugs).</p>	<ul style="list-style-type: none"> • Regulations on innovation • Patents and Intellectual Property (IP) laws • Governance of commercial systems with respect to healthcare delivery
<p>Private sector, media and other platforms</p>	
<p>Private sector and policy influence Influencing the government to create policies that favour commercial interests.</p>	<ul style="list-style-type: none"> • Regulations around lobbying • Regulations for technologies and interventions designed by market • Corporations engaging in party donations (known to incentivise politicians and political parties to align decisions with commercial agendas) • Presence and role of industry bodies in mental health
<p>Philanthropy in health Philanthropic funding is a driver of prioritisation and funding in healthcare.</p>	<ul style="list-style-type: none"> • Philanthropic funding in health • Quantum of domestic and international funding in mental health • Percentage of corporate social responsibility (CSR) initiatives involved in mental health • Prioritisation of specific areas within mental health and types of interventions • Partnership and collaboration with public sector
<p>Media and communications Consumer knowledge and behaviour is influenced through sources and quality of information across media.</p>	<ul style="list-style-type: none"> • Media such as media channels or platforms • Regulations on media with respect to quality and accuracy of information • Use of media to promote healthcare • Affordability of media • Presence of competition among media platforms in the market • Perceived trust in media platforms as a source of credible information (with respect to health)
<p>Platforms for health and wellness Platforms for health and wellness influence health-seeking behaviour at three levels - individual level and self care, individuals' interaction with family and individuals' interaction with communities.</p>	<ul style="list-style-type: none"> • Availability of self care opportunities • Availability, accessibility and affordability of group wellness platforms (eg. gyms, yoga centres, community sports complexes etc.) • Access to parks and other recreational spaces
<p>Laws and Regulations (applicable to indicators under commercial determinants)</p>	
<p>Laws and regulations Laws and regulations at the state and national levels around social, cultural and economic determinants (applicable to all relevant indicators on this tab).</p>	<ul style="list-style-type: none"> • Food safety regulations • Export and import regulations • Laws around lobbying • Laws on advertising • Regulation of media content • Laws on pricing of mental health products • Laws on fortification of foods

Annexure 4

Indicators for Biological and Environmental Determinants of Mental Health

Biological and environment determinants	Indicators
Environment	
<p>Climate patterns and climate change Adverse environmental conditions can limit the access to clean food, air and water and give rise to zoonotic diseases and limits access to clean food, air and water.</p>	<ul style="list-style-type: none"> • Global annual average surface temperature • Atmospheric concentrations of carbon dioxide (CO₂) • CO₂ emissions level • Injuries and deaths due to extreme weather events (e.g. heat waves, cyclones) • Incidences of catastrophic events (climate-related disaster frequency) • Regional climatic trends such as rainfall, drought, floods • Climatic trends across different geographies • Global mean sea level • Natural disaster-prone regions and occurrence of natural disasters • Solar and ultraviolet (UV) radiation penetration • Sunlight exposure (e.g. seasonal affective disorder (SAD) is a form of depression that occurs in relation to the amount of exposure to daylight)
<p>Air, land and water pollution Exposure to pollutants can affect the health of humans, animals and plants and indirectly drive poor mental health outcomes.</p>	<ul style="list-style-type: none"> • Level of particulate matter • Water quality index • Air quality index • Percentage of pesticide use in agriculture • Agricultural Land Use (Livestock, Agriculture or Fish Farming) • Presence of industries near water and land bodies • Air quality (parts per million (ppm) ammonia), Ambient Air Quality or Indoor Air Quality • Policies and investments supporting cleaner transport, energy-efficient homes, power generation, industry • Water Quality. For example, recreational water quality, recycled water quality, drinking water quality • Land quality and contamination • Soil quality and contamination
<p>Human-caused ecological changes such as overpopulation, pollution, burning fossil fuels, and deforestation affect mental health in myriad ways.</p>	<ul style="list-style-type: none"> • Population growth • Depletion of resources such as groundwater, deforestation, soil degradation or overfishing • Food production • Type of urbanisation • Forced migration or displacement due to developmental projects • Fossil fuel and mining regulations • Hazards from human built environment – biological hazards, material hazards (e.g. asbestos, lead and other chemical hazards), radiological hazards, electromagnetic hazards

<p>Extinction of flora and fauna Extinction of plant and wildlife species can have a negative impact on the mental health of individuals whose lives and livelihoods are dependent on them.</p>	<ul style="list-style-type: none"> • Extinction of natural pollinators such as bees and butterflies can impact agricultural practices across the world. This inadvertently impacts livelihoods and in turn the mental health of communities dependent on them.
<p>Human biological factors</p>	
<p>Genetic factors and evolution Genetic factors and evolution influence the prevalence of diseases.</p>	<ul style="list-style-type: none"> • Genetic predisposition to diseases • Risk of mental illness across specific populations or age groups • Prevalence of mental illness and psychiatric disorders in families
<p>Health phenomena and disasters</p>	
<p>Health phenomena Human-made or natural phenomena, which have evolved over time, impact human health and indirectly impact mental health.</p>	<ul style="list-style-type: none"> • Prevalence of antimicrobial resistance
<p>Health Disasters Health disasters encompass pandemics, endemics, outbreaks and so on, driving negative mental health outcomes.</p>	<ul style="list-style-type: none"> • Prevalence of pandemics (eg. COVID-19) • Geographically contained endemics and outbreaks (e.g. ebola virus disease) • Mental health issues arising from disasters
<p>Interaction between animals, humans and the environment</p>	
<p>Zoonotic diseases (transfer of pathogens arising from interaction between animals and humans) Transmission of infectious disease via the interaction between animals and humans. Lack of response and management of zoonotic diseases can give rise to mental distress and impact mental health outcomes.</p>	<ul style="list-style-type: none"> • Prevalence of identified zoonotic diseases and cures e.g. Nipah virus, rabies, monkeypox etc. • Infrastructure to study disease patterns and predictability • System-preparedness for managing zoonotic diseases • National response plan for infectious disease outbreak • Monitoring of veterinary health • Pharmaceutical capacity and infrastructure to create new drugs • Surveillance systems in place for priority zoonotic diseases or pathogens • Proximity of humans to wildlife • Transmission of disease from humans to animals eg. disease outbreaks and fatalities have been recorded in gorillas due to measles and bacterial pneumonia.
<p>Animal rearing practices Nature of animal rearing practices impact the health of animals and humans consuming or rearing animals.</p>	<ul style="list-style-type: none"> • Percentage of animals treated with antimicrobials or anti-inflammatories • Rearing practices including overgrazing and other environmentally harmful practices • Use of growth hormones, chemicals and steroids in animal rearing • Type of animal farming and associated practices • Harm-free meat and poultry processing practices
<p>Consumption of animal-based food by humans Human consumption of animal-based food impacts physical health which indirectly influences mental health outcomes.</p>	<ul style="list-style-type: none"> • Consumption of meat, poultry, fish and other animal-based food • Risk of adverse health outcomes due to poor quality food from unhealthy rearing practices e.g. consumption of hormone-injected produce and poultry

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<p>Disasters as a result of humans and environment interaction Health disasters can result in poor mental health outcomes in the short and long term.</p>	<ul style="list-style-type: none"> • Biological warfare such as anthrax bombs used in wars cause multiple respiratory diseases and cause health disasters, frequent exposure to these diseases can drive poor mental health outcomes. • Occupational exposure to radiological waves and equipment e.g. doctors or lab technicians exposed to high radiation which can cause neoplasms or leukaemia, which can result in high levels of anxiety. • Pollution and exposure to poor environments can drive poor mental health outcomes.
<p>Interaction between humans, environment and animals Compounded effects of interactions among animals, humans and the environment lead to adverse outcomes which can impact mental health.</p>	<ul style="list-style-type: none"> • Poor mental health arising from indirect impacts of ecological conditions e.g. water pollution caused by humans polluting the environment could result in loss of species of fish, which could further lead to loss of fishing-based livelihoods of humans, driving poor mental health.
<p>Laws and Regulations (applicable to indicators under biological and environmental determinants)</p>	
<p>Laws and Regulations Laws and regulations at the state and national levels around social, cultural and economic determinants (applicable to all relevant indicators on this tab).</p>	<ul style="list-style-type: none"> • Regulations in use of antibiotics and quality protocols in animal rearing • National laws and policies on mitigating climate change • Regulations on industrial activities impacting the environment • National emergency response plan for extreme weather conditions (E.g. Tsunami) • Environmental taxes

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