SAPIEN LABS

Sapien Labs Centre for the Human Brain and Mind at Krea University

Mental State of India:

The Internet-enabled Youth

Rapid Report | October, 2023

Foreword

India's demographic dividend is now considered one of her greatest strengths-a large population of the youth that is poised to propel development and growth at an even faster pace. Alongside reports of skilling and other government initiatives focused on the youth, reports of high levels of stress and anxiety among the youth in India have also begun to emerge. What is the mental health status of India's youth? Until recently, no data exists to assess the mental health of the Indian youth, but such assessments are urgently needed. The Sapien Labs Global Mind Project has collected data of mental health among the internet-enabled population, currently covering over a million individuals worldwide, including over a 100,000 from India. In this report, we use data from this project to document the mental health status of the youth, but also compare mental health status across age groups and income levels.

The results are quite sobering. Across the country, the youth are struggling with respect to their mental health, both in absolute terms and relative to older adults. Furthermore, the relatively poor mental health of the youth is obtained across income levels suggesting that economic factors alone may not be driving poor youth mental health. Moreover, the scope and scale of the problem call into question an approach that relies solely on management or treatment of these conditions.

By highlighting the dismal mental health among India's youth, we hope that these findings can spur researchers, clinicians and policymakers to focus more on the underlying drivers of poor youth mental health.

Dr. Shailender Swaminathan,
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About Sapien Labs Centre – India

The Sapien Labs Centre for the Human Brain and Mind at Krea University is a collaboration between Sapien Labs and Krea University with an aim to pursue research and learning related to the human brain and mind. It also intends to build a globally distributed infrastructure for large-scale, real-time data acquisition and insights as well as the development of interventions and tools that can help move the needle on mental health outcomes in India. The Centre will bring together cross-disciplinary faculty, large-scale acquisition of multi-dimensional human physiological data, cutting-edge data workflows, and engagement with the non-profit, start-up and government sectors.

Acknowledgement

We would like to thank Dr. Shyam Kumar Sudhakar, Assistant Professor at Krea University for supporting the data analysis for this report. We would also like to thank Rahul Shah from the Chennai Mathematical Institute for supporting the data visualisations.

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Executive Summary

Research Question

This report examines the temporal and geographic variation in mental health of primarily English-speaking internet-enabled individuals living in 36 states and Union Territories of India. We seek to answer several questions. How has the mental health of this group changed since the pandemic began in 2020? What is the mental state of the youth (18-24 years) in this group? To what extent do economic factors play a role? The findings are based on data from 106,427 respondents across 36 states and Union Territories, obtained between April 2020 and August 2023 as part of the Global Mind Project. Data were collected using an assessment called the Mental Health Quotient (MHQ) which assesses 47 aspects of mental feeling and function that are aggregated into a composite mental wellbeing score that relates linearly to the individual's ability to function.

Key Findings

1

Mental wellbeing is lower in 2023 than it was in 2020

2

Although state-level variations are observed in the overall average MHQ, youth 18-24 performed poorly in almost all states in India

3

Economic factors do not explain the relatively poorer mental health among the youth

Conclusion

Almost two years removed from the COVID pandemic that reduced social interactions, increased unemployment rates, and increased use of the internet and social media, the mental health of the internet-enabled population in India is lower than in 2020. While variations in mental health are observed across states when including all ages from 18-74 years, almost all states in India are doing poorly when we consider just youth (18-24 year olds).

Our findings suggest that poor youth mental health is not attributable to economic factors alone given that the poor relative (to older age groups) mental health of the youth persists across income levels.

There are several factors that can explain the poor mental health of youth in India: low economic prospects, lower or no social interaction, less opportunity for free play as children, a diet that has moved away from traditional "whole" foods, and an increase in use of the smartphones and social media that will be explored in subsequent reports. The overarching objective of the India centre of the Sapien Labs Centre for Human Brain and Mind is to bring more insight and understanding into the underlying drivers of poor mental health in India.

Introduction

Mental health is emerging as one of the central issues of our times-a problem that now spans multiple countries, including India. Despite it's growing importance and relevance, the focus has been almost exclusively on how to manage and treat the condition as opposed to understanding the underlying drivers of poor mental health. Data on mental health in India continues to be sparse with the last comprehensive survey by NIMHANS conducted in 2015/16. Since that time, we have had global economic changes, technological advances and an overall increase in demand for smartphones in India, a whole slew of development projects, and the COVID pandemic.

Due to the sheer breadth of India, it is difficult to conduct a comprehensive survey to assess mental health that spans all the geographic regions. Beginning in 2020, the Global Mind Project of Sapien Labs has been collecting online data to assess mental health of the internet-enabled population of India. The online mode of reporting overcame two of the central problems hitherto associated with mental health surveys: (1) hesitancy in accurately reporting mental health due to privacy concerns was now minimized due to an almost completely anonymized reporting system. The incentive to report into the system was that at the end of the 15-minutes of a validated questionnaire, respondents were provided with a mental health score and an individualized report that allowed them to gauge how they were doing. (2) The online system allowed us to reach individuals across a broad range of demographics in all states and Union Territories in India, resulting in a database on mental health of over 100,000 individuals aged 18 and over.

In this report, we present findings from the data collected noting that these results pertain to the primarily English speaking, internet-enabled population of India. This is also a population that is more educated-42 percent of internet users have a higher education degree while only 10 percent of those who have never used the internet have a higher education degree. This suggests that our results pertain to the higher-earning population. The findings of the report highlight three main points. First, we examine the change over time (2020-2023) in the mental health and wellbeing of this population since the pandemic- both overall and by age group. Second, we examine state-level variations in mental health and wellbeing overall and for the youth (18-24 year-olds). Third, we examine the association between mental health and income to understand the extent to which income is associated with changes in mental health.

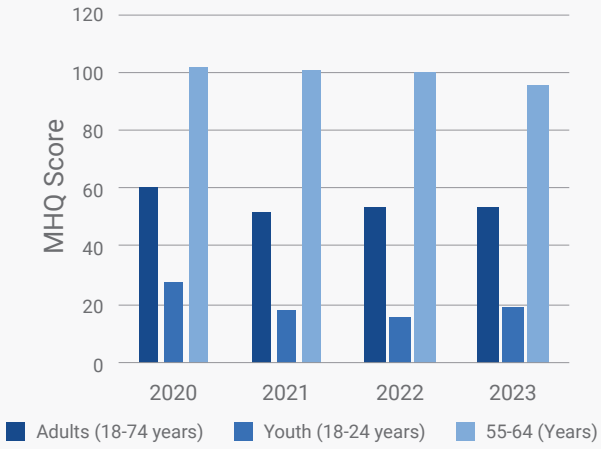
Results

1. Mental Health is lower in 2023 than it was during the first year of the COVID Pandemic

This report examines the temporal and geographic variation in mental health of primarily English-speaking internet-enabled individuals living in 36 states and Union Territories of India. We seek to answer several questions. How has the mental health of this group changed since the pandemic began in 2020? What is the mental state of the youth (18-24 years) in this group? To what extent do economic factors play a role? The findings are based on data from 106,427 respondents across 36 states and Union Territories, obtained between April 2020 and August 2023 as part of the Global Mind Project. Data were collected using an assessment called the Mental Health Quotient (MHQ) which assesses 47 aspects of mental feeling and function that are aggregated into a composite mental wellbeing score that relates linearly to the individual's ability to function.

Figure 1: **Mental Wellbeing 2020-2023**

Panel A: Overall MHQ



Panel B: Percent Distressed or Struggling

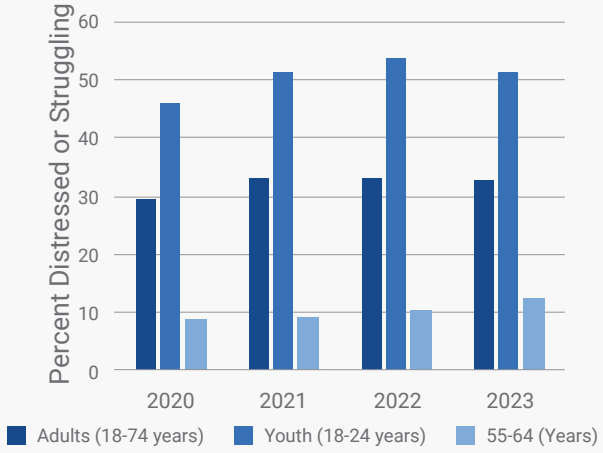
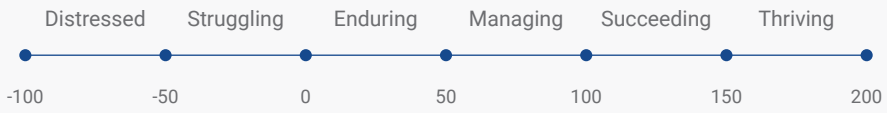


Figure 1, panel A shows that mental wellbeing quantified by average MHQ score has not recovered even to the 2020 level, while panel B reveals a similar result for the percent that are distressed or struggling (MHQ<0). The worsening of mental health is especially apparent for the 18-24 year-olds.

MHQ Scale



Negative scores reflect 5+ clinical-level symptoms and significant impact on ability to function, >100 indicates functionally succeeding/thriving

Figure 1, panel A shows the decline in MHQ scores in 2020, 2021, 2022 and 2023. Relative is visible for all years and for all age groups. For all adults between 18 and 74, there is a decline ranging from 8.1 in 2020 (relative decline of 2.7 percent) to 6.2 in 2023 (relative decline of 2.1 percent). The decline among the 18-24 year-olds is maximum in 2022 (12.5 in MHQ score or a 4.1 percent decline) and is higher in absolute terms relative to the decline in other age groups. While older adults (55-64 year-olds) did not slide much in 2021 and 2022 there is a larger decrease in the 2023 relative to previous years. Figure 1, panel B also shows that the percent that were either distressed or struggling (MHQ<0) increased since 2020 for all age groups. Among the youth, the percent distressed increased from about 46 percent in 2020 to over 50 percent in the years 2021,2022 and 2023.

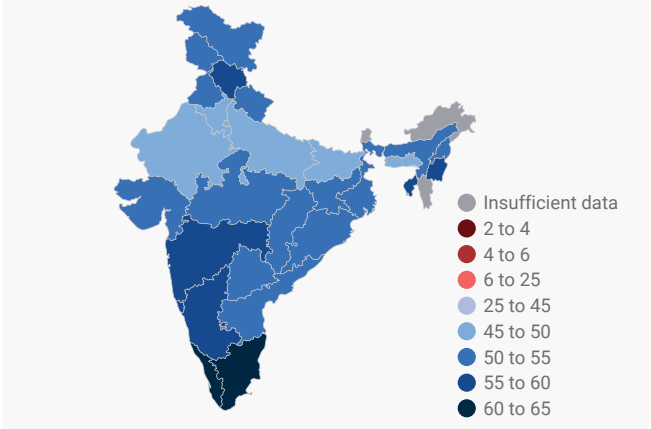
Global data collected in Core Anglosphere countries in 2019 (Sapien Labs Mental State of the World Report 2021) shows a sharp drop from 2019 to 2020 that was greater than other years. This suggests that mental health in India in 2020 too was likely to have been lower than in 2019. Altogether the data suggests that there is little rebound in the mental health in India towards pre-pandemic levels. Why? First, it is possible that in-person interaction and other lifestyle habits have not returned to their pre-pandemic levels. Second, for the youth in the internet-enabled population, the pandemic might have been the trigger to spend more time on smart phones and the internet- a potential driver of poor mental health.(Sapien Labs smartphone report, May 2023)

2. Little to no geographic (state-level) variation in youth mental health

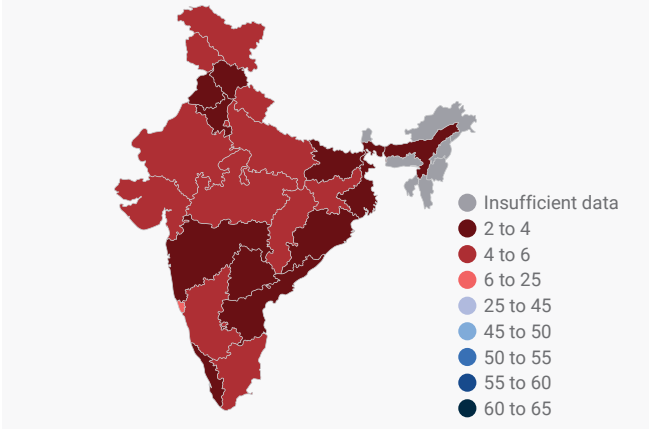
What is the extent of geographic variation in the mental health of the Internet-enabled population? The sheer diversity of Indian states-in geography, language, economics, diet, and social networks-all potentially important correlates of mental health-suggests that there may be substantial state-level variations in mental health.

Figure 2: **Mental wellbeing by State**

Panel A: Average MHQ Overall



Panel B: Average MHQ Youth



Among 18-74 year-olds, panel A shows that the states of Tamil Nadu and Kerala have the best mental health scores while those in Rajasthan, Uttar Pradesh and Bihar have low scores. Panel B only uses data from the 18-24 year-old youth, we find that mental health scores are very low in all states.

Figure 2, panel A plots the average MHQ for different states in India (weighted by age and gender distributions within the state). Tamil Nadu and Kerala had the best MHQ scores overall which were between 60 and 69 which is considered in the 'Managing' range on the MHQ scale. On the other hand, Rajasthan, Uttar Pradesh and Bihar had the poorest (40-49) which is in the band considered 'Enduring'.

Young Adults (18-24 years old) present a different picture. The range of average MHQ is between 2 and 6 in almost all states of India (Figure 2, Panel B). We believe that these are the first national-level estimates of mental health of the internet-enabled youth, and one that paints a very bleak picture. We note that the phenomenon of poor mental health of youth has now been documented in 60+ countries around the world suggesting global factors at play.

3. Economic factors do not explain the poor mental health of the youth

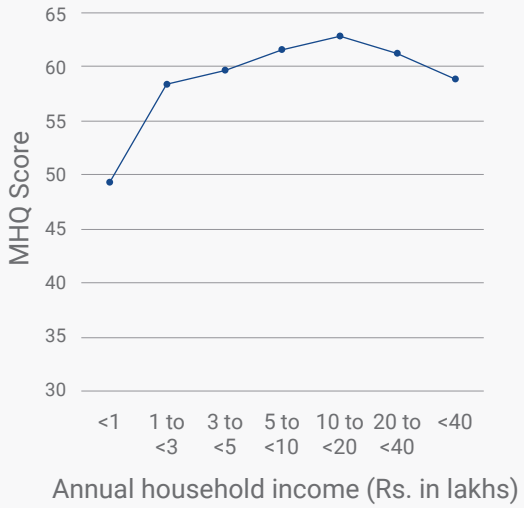
As the data in both figures 1 and 2 suggest, the youth in India are doing poorly in mental health, a phenomenon reported globally. In the United States and Latin American countries where psychological wellbeing has been measured before, this represents a reversal relative to years prior to 2010 where youth reported the best wellbeing. There are many potential reasons for this, including uncertainty about job prospects (according to the Center for Monitoring the India Economy, the unemployment rate for those under 25 is 45.8% in the year 2020), and the associated lower earnings potential.

Thus, it may be possible that the youth in wealthier households are less worried about job prospects and lower earnings than their counterparts in less affluent households-a possibility that would imply that age-mental health gradient is steeper in less affluent households and conversely flatter in more affluent households. To assess the validity of this hypothesis, we plot the age-mental health relationship across three different household income categories: (a) those earning less than one lakh annually, (b) those earning 1-10 lakhs annually, and (c) those earning greater than 10 lakhs annually (Figure 3, panel A).

Figure 3:

Panel A: MHQ by Age and Income

Panel B: MHQ by Income



Panel A shows that relative to older adults, the 18-24 year-olds have lower mental health scores across levels of household income. Panel B shows that while mental health score increases as income increases to about 10-20 lakh per year, there is a decrease in mental health score beyond that point. Overall, these figures suggest that there are factors other than income that might explain the relatively lower mental health scores of 18-24 year-olds.

In Figure 3, panel A, we find that the change was equally steep for all income levels. More specifically, among youth (18-24 years old) with low household income (<1 L per year), the average MHQ is about 10, and this rises to almost 90 for 55-64 year-olds, an absolute increase of about 80 points. For high-income households (income > 10 L per year), the absolute increase is 84. Thus, we note that the gradient is roughly the same- the youth are relatively worse off compared to older adults across levels of household income.

Figure 3, panel B plots the relationship between income and overall MHQ. We find that there is a non-linear relationship between income and mental health, with higher levels of income not associated with higher mental health after reaching an income level of 1-3 lakhs per year. Indeed, there is slight decline in average MHQ after annual household income reaches 20 lakhs annually. Furthermore, the maximum difference between income groups is only 14 MHQ points which is 5.7 times less than the difference between age groups.

The aforementioned figures suggest that the youth are struggling (relative) to older adults regardless of household income levels. Furthermore, it appears that there is no linear relationship between income and mental health—and beyond a point, income appears to have negative effects on mental health.

Insights and Interpretations

Mental health of youth in India's most educated and wealthy population is at a worrying level. Over 50 percent of the youth had mental wellbeing scores in the distressed or struggling range - a range that corresponds to typically 5 or more clinical level symptoms. As the MHQ score has been shown to relate linearly to productive function, it also indicates diminishing ability for productive function that puts them at risk of missing days from work. This finding calls into question the so-called demographic dividend advantage for India. Although India may have a large youth population, they may enter the labor market and adult life at a gross disadvantage with regards to functioning effectively. Previous studies have been restricted in scope with the most comprehensive mental health survey of NIMHANS covering 12 states in 2015-2016. The total sample size was 34,802. Furthermore, to our understanding, previous studies did not have sample sizes that would allow for an age-specific analysis of the internet-enabled population- our target group in this analysis. Finally, the focus in India has hitherto been on treatment as opposed to prevention. There has been considerable investment on Health and Wellness Centres of the government with over 150,000 centres expected to function by 2030. The primary purpose of these centres is to manage and treat mental health problems in the community setting. Given the large population of India and the poor mental health around the country, it is not clear that setting up of these centres can help improve mental health. There are three main insights:

1. Non-economic factors may be driving poor mental health of the youth

Although mental health of the youth is poor, we do not find evidence that the underlying drivers are economic – indeed we find that the relatively poor mental health performance of the youth is consistent across income levels. aAt a global level, mental wellbeing correlates negatively with all economic indicators such as GDP and GNI. (2021 report). *We therefore need to look for non-economic drivers of poor youth mental health in India.* Two recent global reports by Sapien Labs have alerted us to the possibility that early age of smartphone ownership is associated with worse mental health outcomes among the youth (Sapien Labs report May 15,2023), and more frequent consumption of ultra-processed foods are also associated with worse mental health (Sapien Labs report October 2, 2023), both which have grown rapidly in India in recent years. These findings suggest that more focused investigation of these drivers in the context of youth mental health in India is essential.

2. Mental Health is constantly evolving, and it is important to track it continuously

Previous findings on the mental health across Indian states have been reported in two studies (Lancet study using the Global Burden of Disease (GBD) in 2020 and NIMHANS Mental Health Survey of India 2015-16).

The GBD study found that roughly 1 in 7 individuals have mental health disorders overall. The Lancet study reports that the highest prevalence of anxiety and depressive disorders is in Tamil Nadu and Kerala and a lower prevalence in Rajasthan, Uttar Pradesh and Bihar. The NIMHANS study also reported relatively higher prevalence of depression and anxiety in Tamil Nadu and Kerala relative to Uttar Pradesh, Rajasthan and Bihar.

Relative to pre-pandemic estimates that cover a broader economic and offline population, this study of the Internet-enabled population in a post pandemic era finds much less variation in mental health across states. This is especially true when we focus on the 18-24 year-olds, a group that previous studies did not explicitly focus on. Moreover, we find that the two Southern States of Tamil Nadu and Kerala perform better than the Northern states. Given our analysis (Figure 1) that shows rapidly changing mental health over the 2020-2023 period, it raises the questions of whether pre-pandemic estimates are still relevant today even in the offline world. More importantly, it raises the question of how the offline population differs in mental wellbeing from the internet enabled population in this report which has considerably higher education levels (and hence income). Data we have processed from the National Family Life Survey-5 suggests that over 50 percent of the internet-enabled population complete a higher secondary education but only nine percent of the population that have not used the internet do so. Since more education is associated with better mental health, mental health may be worse for the non-internet enabled population. On the other hand, the internet-enabled youth are also likely to engage more in smart phones and less in direct social interaction. Given that findings from our global study suggest early age of smart phone ownership is associated with worse mental health among the youth, mental health may be better if one also includes the non-internet enabled population. It will therefore be of considerable interest to understand how non internet-enabled populations fare in comparison to the this group. This will have many implications for how we think about technological and economic progress. Finally, our survey is a more comprehensive assessment of mental health than the approach used in prior studies. In particular, each item on the 47-question instrument also gauges the extent to which an individual's ability to function is affected.

3. Treatment alone may not be the solution given the scale of the problem

As per the budget announcement in 2017-18, 1.5 lakh Health Sub Centres and Primary Health Centres are to be transformed into Health and Wellness Centres (HWCs) by December, 2022. Many of these centers are being expanded to manage and treat mental health disorders. At the same time, India's health insurance scheme- the PMJAY- that pays for inpatient hospital stays-has included a set of 10 mental health conditions as part of it's package. However, our findings on mental health of the internet enabled population suggests that over 45 percent of the population is reporting mental health in the struggling or distressed category (MHQ <0). ***Given the scale of the problem, it appears unlikely that an approach that manages and treats mental health conditions will be feasible in a country like India. On the other hand, an approach that focuses on the drivers of mental health, i.e. more on prevention may be a more reasonable approach to handling the looming mental health situation in the country.***

Conclusion

COVID forced the internet-enabled population to be online even more, with more time indoors and minimal social interaction. Reports of high prevalence of depressive and other mental disorders have been documented during the pandemic. Using data from a large online mental health survey, we have three main findings: first, that mental health of the internet-enabled population in India has declined from 2020 to 2023-a decline that was observed across the age distribution but predominantly in younger adults or youth. Second, across the entire sample, there is variation in mental wellbeing across states across the entire adult population while youth (18-24-year-olds) are similarly poor across the country. Third, we find a similar gradient across each household income level indicating that economic factors cannot explain the age-mental health relationship.

Taken together, these findings suggest that mental health is a serious and growing concern among the internet-enabled youth population in India. The youth comprise a large and growing segment of the Indian population. The sheer scale of the problem further suggests that an approach that solely targets management and treatment of mental health conditions is unlikely to succeed. Poor economic factors alone cannot explain the poor mental health status. It may be time to focus closely on understanding the drivers of mental health and to understand what might be done to prevent an escalation of mental health issues among India's population, especially among the youth.

Methodology

The Global Mind Project

The Global Mind Project acquires data from adults age 18+ from the literate Internet-enabled world through a comprehensive online self-report assessment called the MHQ. Participants are recruited through broad targeting of populations in each age-gender group across 70+ countries in 12 languages through advertising on Facebook and Google. Individuals take the MHQ for the purpose of obtaining their mental wellbeing scores along with a detailed report offering self-help guidance.

Globally, 1000-2,000 people complete the assessment each day and are added to a dynamic database. The MHQ is freely available online, is anonymous, and takes ~15 minutes to complete. In addition to the scored questions on mental feeling and function, respondents answer various demographic, lifestyle, and life experience questions.

The Global Mind Project is a public interest project that has ethics approval from the Health Media Lab Institutional Review Board (HML IRB), an independent IRB that provides assurance for the protection of human subjects in international social and behavioral research (OHRP Institutional Review Board #00001211, Federal Wide Assurance #00001102, IORG #0000850).

The Global Mind Project database is freely available to researchers in nonprofit and government organizations for non-commercial purpose. Access can be requested here.

The MHQ

The MHQ is a unique comprehensive assessment of mental wellbeing comprised of 47 elements of mental feeling and function including both positive assets, as well as problems that span the symptoms of ten major disorders (Newson & Thiagarajan, 2020).

Within the MHQ, respondents rate each of these 47 items using a 9-point life impact scale reflecting the impact on one's ability to function. For items on a spectrum from positive to negative (spectrum items such as self-image) 1 on the 9-point scale refers to Is a real challenge and impacts my ability to function, 9 refers to It is a real asset to my life and my performance and 5 refers to Sometimes I wish it was better, but it's ok. For items with varying degrees of problem severity (problem items such as suicidal thoughts): the 1 rating on the 9-point scale refers to Never causes me any problems, the 9 rating refers to Has a constant and severe impact on my ability to function, and the 5 rating refers to Sometimes causes me difficulties or distress but I can manage. Respondents rate these elements based on their current perception of themselves.

The MHQ score is an aggregate score of mental wellbeing calculated from these 47 elements, and positions individuals on the spectrum from Distressed to Thriving, spanning a possible range of scores from −100 to +200. **Negative** scores indicate a mental wellbeing status that has significant negative impact on the ability to function **(i.e. a status of distressed or struggling)**. It also provides sub-scores across 6 broad functional dimensions.

Our key outcomes used in the report are the mental health quotient (MHQ) that is measured continuously as well as a dichotomous variable that measures whether or not a person is **distressed** (i.e., has a negative MHQ).

Data Used in this Report

Data used in this report included all responses collected from respondents living in India by the Global Mind Project between January 1st,2020 and August 30th, 2023 after the application of certain exclusion criteria described below. This resulted in a sample size of 106,427. Data fields used in this report included 1) ratings to all 47 mental health questions and 2) computed dimension scores and aggregate MHQ score. Sample sizes by age group and state are included in the data tables.

Data Exclusion Criteria

Respondents who stated that they did not find the MHQ easy to understand were excluded. The exclusion criterion was applied by removing respondents who answered No to the final question in the MHQ which asks them "Did you find this assessment easy to understand?" Also excluded were those assessments that were completed in under 7 minutes (the minimum time needed to read and respond to the MHQ), and those where response ratings had a standard deviation of less than 0.2, indicating that the same rating value was selected across all 47 rating items.

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Sample Sizes by Age Group

Age Group	Sample Size
18-24	28,687
25-34	17,960
35-44	13,629
45-54	17,023
55-64	18,014
65-74	11,114

Sample Sizes by State

Andaman and Nicobar Islands	48
Andhra Pradesh	2,588
Arunachal Pradesh	134
Assam	1,410
Bihar	2,329
Chandigarh	511
Chhattisgarh	1,243
Dadra and Nagar Haveli andDaman & Diu	95
Goa	737
Gujarat	4,163
Haryana	3,464
Himachal Pradesh	1,184
Jammu & Kashmir	1,180
Jharkhand	1,524
Karnataka	7,819
Kerala	7,686
Ladakh	39
Lakshadweep	11
Madhya Pradesh	4,172
Maharashtra	13,738
Manipur	229
Meghalaya	213
Mizoram	128
Nagaland	198
Odisha	1,378
Puducherry	216
Punjab	2,184
Rajasthan	3,662
Sikkim	81
Tamil Nadu	7,343
Telangana	3,371
The Government of NCT of Delhi	5,969
Tripura	151
Uttar Pradesh	10,772
Uttarakhand	1,792
West Bengal	7,760
Missing	6,905