SAPIEN LABS

The Youth Mind: Rising aggression and anger

Rapid Report // The Global Mind Project

January, 2025

This study was made possible with funding from the Stavros Niarchos Foundation

Image generated by ChatGPT

Dear Reader,

In the United States, the Center for Disease Control and Prevention (CDC) has been documenting growing rates of both sadness and suicide among 10–18-year-olds since 2010, particularly in girls. While their latest data shows that rates of persistent sadness recently plateaued in this age group, they report rising rates of violence and fear for physical safety. In India too, the National Mental Health Survey from the National Institute of Mental Health and Neurosciences (NIMHANS) has documented an increase in suicide rates among young people. *Why is this happening?*

This report, based on comprehensive profiles of the mind health & wellbeing of 10,475 Internet-enabled adolescents in the United States and India in 2024, describes trends among this age group and provides some crucial perspectives. As in older GenZers mind health continues to decline significantly with each younger year of age from 17- and 13-year-olds. Most significantly, among the 47 aspects of mind health queried, feelings of aggression, anger and hallucinations are rising most sharply with each younger age and are associated with the progressively younger age at which children are acquiring smartphones. Whereas today's 17-year-olds typically got a phone at age 11 or 12, today's 13-year-olds got their phones at age 10.

Although it's still not yet fully clear how owning a smartphone from a younger age gives rise to these problems, it's well known that the virtual world provides exposure to content that is inappropriate for a younger audience and a substantial departure from the family- and community-centric experiences of the past. In addition, the numerous hours spent online disturbs sleep and displaces crucial in-person interactions needed to learn how to navigate social dynamics and conflict. As we continue to study these trends and explore the underlying causes, one thing is clear: swift action is needed to safeguard younger generations from a future marked by increased anger, aggression, and violence. While managing access to inappropriate content and limiting screen time remain challenging, we urge parents at the very least to delay giving their child a smartphone until at least 8th grade or age 13 so as to give them more time to develop healthier social skills and reduce tendencies for anger and aggression.

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Summary

In this report we deep dive into the mind of Internet-enabled 13-17-year-olds in the United States (US) and India, asking what is behind the alarming trends of increasing suicides and violence reported among adolescents by the CDC and National Mental Health statistics in India. This data represents an extension of the Global Mind Project that captures data through separate projects running in the US and India. The data includes ratings of 47 aspects of mind health along with numerous lifestyle and life experience factors and was captured in 2024 from 10,475 adolescents.

We highlight three key trends:

- First, the generational decline in mind health & wellbeing seen in adults extends into adolescence. Adolescents aged 13–17 fare worse than young adults aged 18-24 who in turn fare worse than those aged 25-34, and so on. This pattern is even visible year by year where 13-year-olds fare worse than 14-years-olds who in turn fare worse than 15-year-olds and so on. The trend is particularly pronounced in girls where 65% are distressed or struggling in a manner that substantially impairs their ability to function effectively in the world and would be of clinical concern.

- Second, the dominant problems in 13–17-year-olds extend beyond sadness and anxiety to include unwanted, strange thoughts and a sense of being detached from reality, while the problems that are increasing fastest with each younger age group are feelings of aggression towards others, anger & irritability and hallucinations.

- Finally, these rapidly increasing problems of aggression and anger & irritability, particularly in females, can in a large part be attributed to the increasingly younger age at which children are now getting a smartphone. Differences with age are eliminated when controlling for the age of first smartphone.

Why it matters:

- The findings provide an explanation for growing violence and fear of safety among students that has been reported by the CDC.

- The report supports a policy of "wait until 8th" (or later) for smartphones.

- These symptoms aren't captured in typical mental health screenings such as PHQ-9 and GAD-7.

- Altogether, with more children getting their first smartphone at a younger age, these findings predict an increasingly violent future for society.

Introduction

We are in the midst of a youth mental crisis. Just a few decades ago, the relationship between psychological wellbeing and age followed a U-shaped curve. Younger and older generations had the highest wellbeing with a dip in middle age. Recent data from the Global Mind Project[1,2] and others[3] shows that this curve has now collapsed, with mind health and wellbeing now poorer with each successively younger generation. These trends are also being played out in national statistics around the world. For example, the Centers for Disease Control and Prevention (CDC) in the United States (US) reports an alarming downturn in adolescent mental health and wellbeing since 2009 with:

- Rates of emergency department visits for self-harm among girls in 2020 doubling compared to 2001 (514.4 per 100,000 in 2020 vs 244.3 per 100,000 in 2001)[4].
- Suicide rates steadily increasing by 62% (6.8 to 11.0 deaths per 100,000) between 2001 to 2021, among individuals aged 10–24[5].
- Persistent feelings of sadness or hopelessness increasing by 40% between 2009-2019 in high school students[6].

The challenges that this generation is facing are seen in other statistics, with the CDC also reporting that between 2021 and 2023 there was a rise in the percentage of:

- Teens who said they were threatened or injured with a weapon at school (9% in 2023 vs 7% in 2021)[7].
- Students who faced a bully at school (19% in 2023 vs 15% in 2021)[7].
- Students who missed school because of safety concerns at school or during their commute (13% in 2023 vs 9% in 2021)[7].

Similar trends of rising suicides in children, adolescents and young adults have also been reported for India[8–10] with a recent study suggesting that suicide rates among Indian girls and women is twice the global rate (12.1 per 100 000 vs 5.7 per 100 000), and accounts for most deaths in the 15–39 years age group (26.7–33.1 per 100 000)[11]. Other nations too report similar trends[12–14].

Smartphones in childhood

Although numerous factors have traditionally been identified as drivers of poor mental health, one key change in younger generations is the arrival of smartphones which were introduced in 2008, coinciding with the onset of rising mental health problems. While most studies to date have focused on social media and screen time with mixed results and opinions[15–21], we have previously shown that the younger

the age at which someone gets their first smartphone or tablet during childhood, the poorer their mind health and wellbeing during their early adulthood[22]. This is supported by other findings, suggesting that earlier age of smartphone ownership can have a negative impact on wellbeing and school outcomes[23–25].

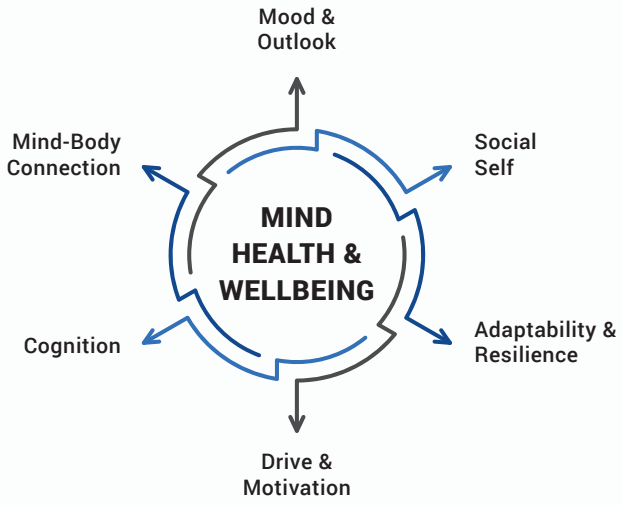
With evidence suggesting that smartphone ownership is getting younger and younger around the world[26–28] and both grassroots campaigns and government regulation targeting smartphone use in adolescence, it is critical we better understand the impact of owning a smartphone from a younger age.

What's in this report

In this report we examine the mind health and wellbeing of 10,475 internet-enabled adolescents across the United States and India. We highlight key trends across the age range of 13 to 17, with a particular focus on rising feelings of aggression, anger & irritability and hallucinations in each younger age. We show these problems are largely associated with a getting a smartphone at a younger age.

Data were collected between August 2023 and November 2024 using the Youth-MHQ which captures 47 aspects of mind health together with a wide variety of life context and life experience factors (see Appendix 1 for more information on the methods). Note that the main graphs typically show aggregated trends across males and females in the US and India with additional graphs by biological sex and country in Appendix 2. Additional data trends can also be found in the associated data tables.

About Mind Health and the MHQ



The Mind Health Quotient (MHQ), is a comprehensive assessment of 47 aspects of mental function across six dimensions of mind health including Mood & Outlook, Adaptability & Resilience, Social Self (our ability to relate to others), Drive & Motivation, Cognition and Mind-Body Connection. The aggregate score, or MHQ, relates to functional productivity, with higher scores associated with an increased number of productive days. Read more here.

While both mental wellbeing and mind health are terms that encompass the emotional, social, cognitive and physical capacities that enable individuals to navigate life's challenges and function productively, we have transitioned to the use of 'mind health'. This term is more commonly associated with both feeling and function while mental wellbeing is commonly associated with feelings alone and often conflated with happiness.

Key Findings

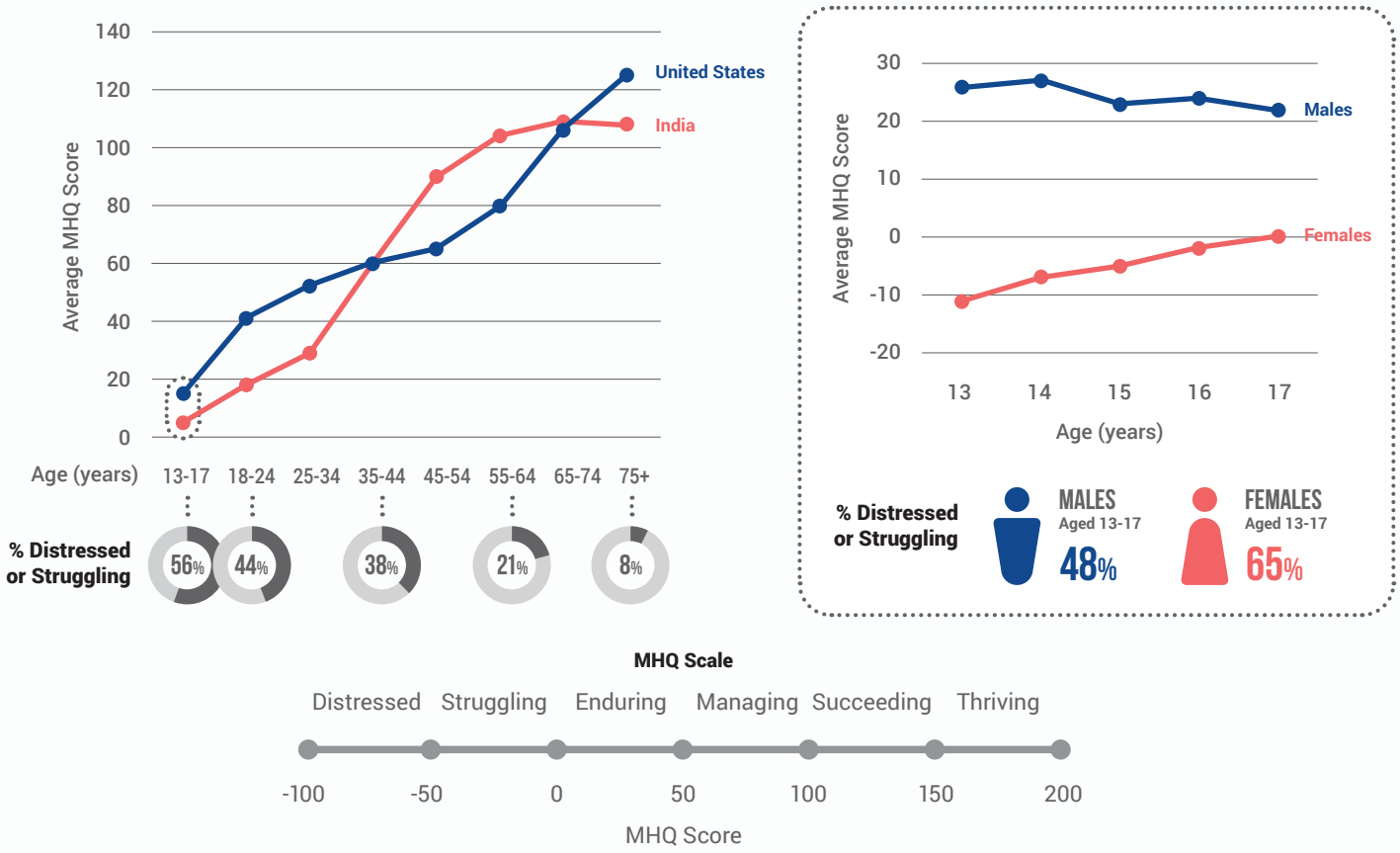
1. Younger adolescents have worse mind health

56% of 13–17-year-olds had MHQ scores in the distressed or struggling range indicating a significant impact of their ability to navigate life and function productively (Figure 1, left). This is in stark comparison to older adults, where less than 20% of those aged 55 and above had MHQ scores in this range. This continues the trend of declining mind health with each younger generation previously reported by the Global Mind Project[1,2]. Notably, the trend of decreasing mind health in younger generations was evident even from age 17 to age 13 for females in both India and the US (Figure 1, right). Interestingly, the trend was different for males in India between age 13 and 17, although the aggregate mind health score for this age group was still lower than those aged 18 to 24.

Although the decline was present in both males and females, it was more prominent in females. While males aged 13-17 had an average MHQ score of 25 with 48% struggling or distressed, for females their average score was -5, with 65% struggling or distressed. Overall, mind health scores for those aged 13-17 were lower in India compared to the US.

Figure 1

Left: *MHQ scores declines and the percentage distressed/struggling increases with successively younger generations (age 75 to 13-17) in both US and India.*
Right: *Females aged 13-17 have lower MHQ scores and higher percentage distressed/struggling compared to males, in both US and India.*

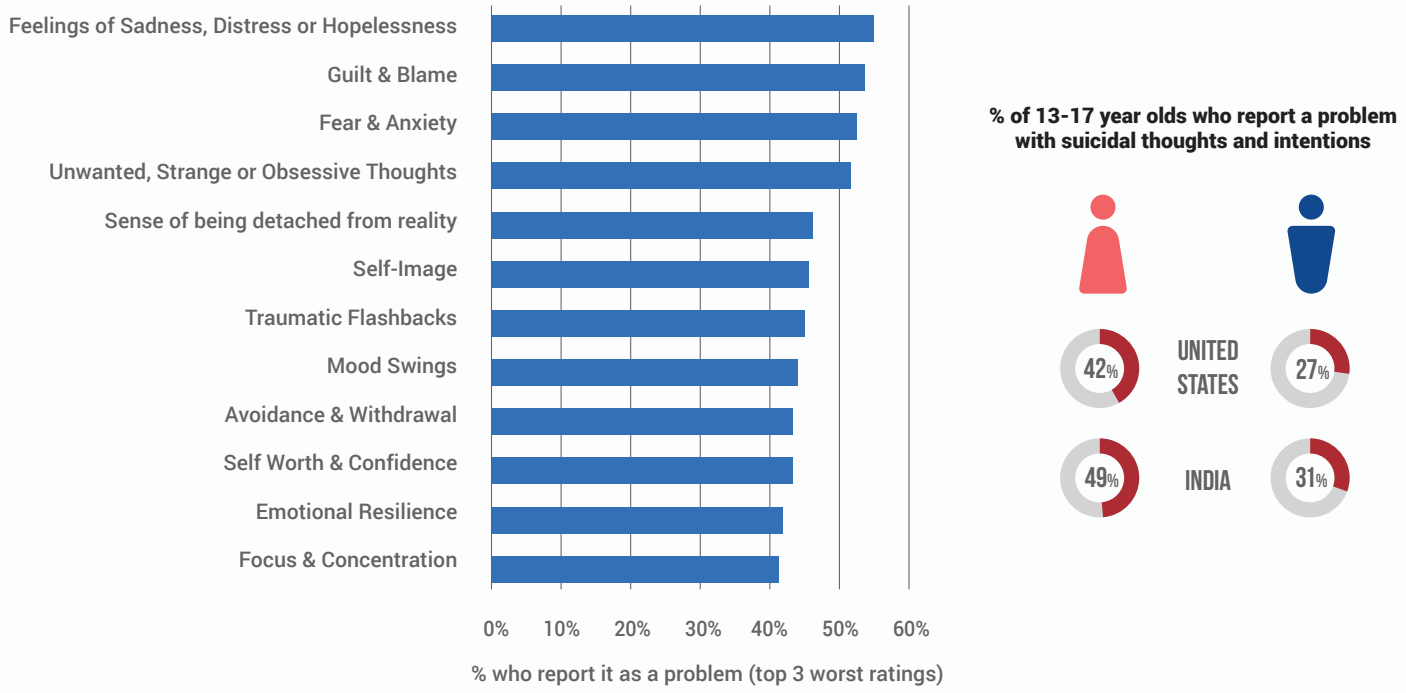


2. The majority of adolescents are plagued by sadness, fear, guilt, unwanted thoughts and feeling detached from reality

In both the US and India, over 50% of 13–17-year-olds indicated that feelings of sadness, guilt and anxiety caused them serious problems in their everyday life while debilitating unwanted strange thoughts and a sense of being detached from reality came in at 51% and 46%, respectively (Figure 2). Although suicidal thoughts and intentions did not make the top 12 overall (out of the 47 aspects of mind health queried), the percentages were strikingly high, especially in females, with nearly 50% of females in India and 42% in the US reporting problems with suicidal thoughts.

Figure 2

Top 12 most common problems in 13–17-year-olds. Shows the percentage who selected the top 3 worst rating options on a 1-9 scale.

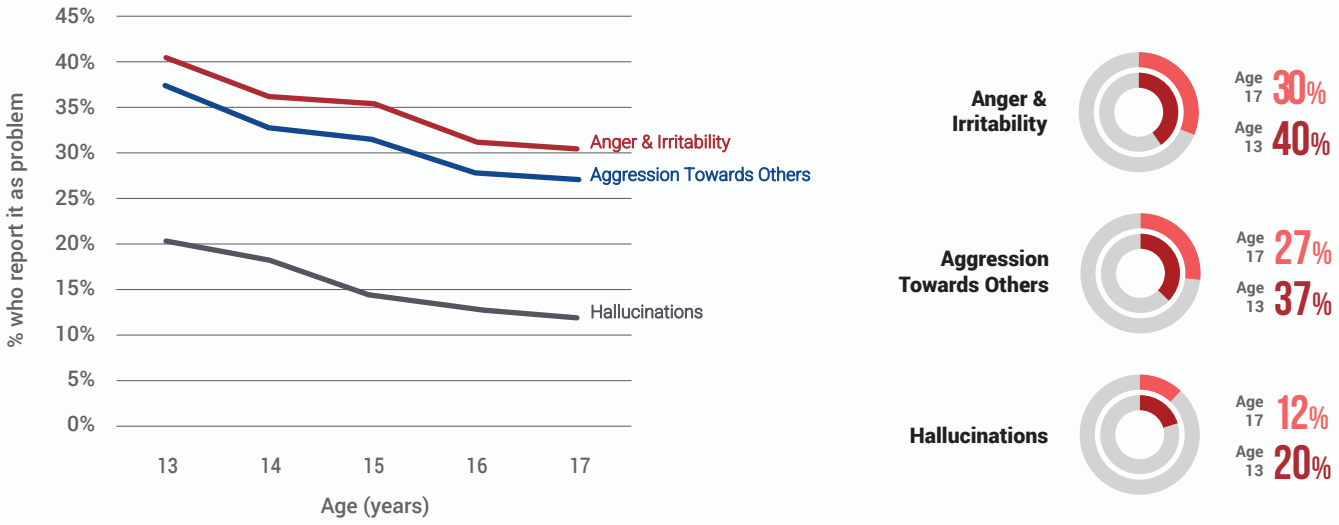


3. Aggression, anger, hallucinations and suicidal thoughts are steadily rising with younger age

While not in the list of top 12 most prevalent problems, feelings of aggression towards others, hallucinations and anger & irritability were most increased in 13-year-olds compared to 17-year-olds overall (Figure 3). This trend was present for males in both India and the US, while for females in both the US and India these 3 were among the top 4 problems that were most increased in 13-year-olds, together with suicidal thoughts and intentions. This suggests that these problems are rising in younger adolescents, representing new profiles of distress that are not typical to previous generations.

Figure 3

3 MHQ items rated as being more of a problem for 13-year-olds compared to 17-year-olds. Shows the percentage who selected the top 3 worst rating options on a 1-9 scale.



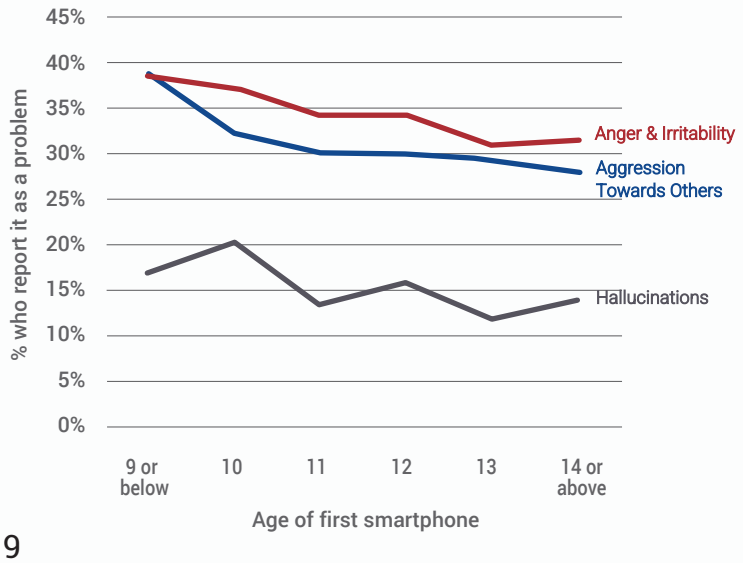
4. These rising problems are associated with getting a smartphone at a younger age

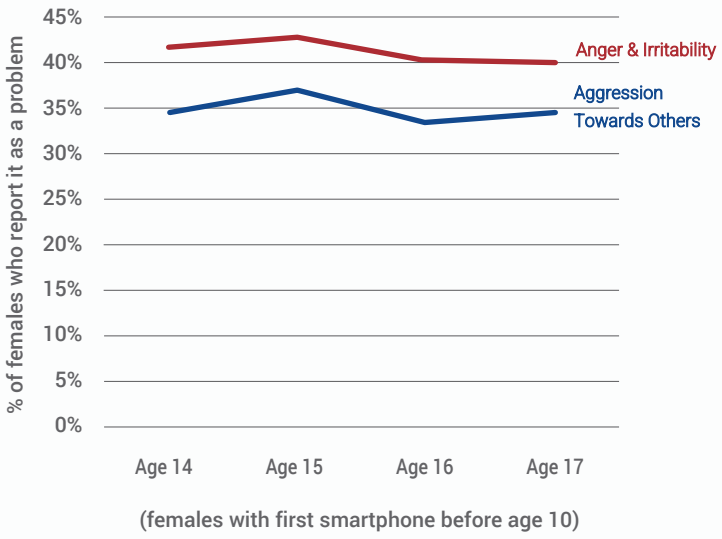
The same problems of aggression and anger that are most increased in 13-year-olds relative to 17-year-olds (see Figure 3 above), are also the same problems that increased most significantly with a younger age of smartphone ownership (Figure 4 left), an association that we have also previously shown in 18-24-year-olds. There was also a directional, but smaller, trend for hallucinations (see the associated tables for data across all 47 items). This suggests that earlier age of smartphone ownership may be a key factor behind this trend of increased anger and aggression. The differences by age in females (as shown in Figure 3) disappear when controlling for age of first smartphone (Figure 4, right). For example, for females across all ages 13 to 17 who got their first smartphone before age 10, there was no difference in aggression and anger. We note that the effect for males is less clear.

These findings are particularly concerning as the age at which children get their smartphone is getting steadily younger[26-28]. In this data, 13-year-olds in the US reported getting their phone at approximately age 10 with 24% getting their phones even earlier. In contrast, 17-year-olds reported getting their phone, on average, at age 12 with only 10% before age 10. In India, 13-year-olds reported getting their smartphone, on average, at age 11 compared to 17-year-olds who reported getting their phones, on average, at age 14. We note that 13-17-year-olds who do not yet have a smartphone are not likely to be part of this sample, potentially underestimating the age of first smartphone ownership particularly for the 13-year-olds. This is likely to be more so in India where 55% of 17-year-olds reported getting a smartphone after age 13 compared to only 27% in the US.

Figure 4

The percentage of 13–17-year-olds who report problems with aggression towards others, anger & irritability and hallucinations in comparison to the age at which they got their first smartphone (left). The percentage of females who got their smartphone before age 10 who report problems with aggression and anger at each age (right). Shows the percentage who selected the top 3 worst rating options on a 1-9 scale.





Insights and Interpretations

The alarming consequences of the continued generational decline of mind health

The youth mental health crisis has emerged as one of the most alarming challenges of recent times. Here we show that the significant deterioration in mind health and wellbeing with each successively younger generation[2] extends into younger GenZers, with 56% in the distressed or struggling range of MHQ scores, indicating clinical concern and substantial impairment in their ability to function. The specific problems of highest prevalence and growth are similar to, but an amplification of, those in older GenZ who were the first generation to grow up as digital natives. Over 50% of today's 13–17-year-olds report challenges with feelings of sadness, guilt, anxiety and unwanted or strange thoughts while 46% report a sense of feeling detached from reality and 37% report suicidal thoughts. Just as alarming are the trends of greater aggression towards others, anger and hallucinations in 13-year-olds compared to 17-year-olds. The magnitude of this trend (an increase of 8-10%) across just a 5-year age gap is particularly disturbing and speaks to findings from the CDC of rising rates of violence and fears for safety in this age group[7]. Altogether this represents a substantial departure from the symptom profiles in older generations that grew up in a pre-Internet era.

With a majority of youth now struggling at a level that impairs their ability to function productively, and a substantial fraction with greater aggression, anger and hallucinations, this raises a dystopian possibility for the future of society. How much will overall rates of violence rise as less aggressive, more mentally resilient generations are no longer the majority? What will it mean for our ability to sustain institutions, infrastructure, and systems effectively and productively?

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How do the statistics in this data compare to national statistics for the US?

While there are variations in the in the way questions are asked in the Global Mind Project and by the CDC surveys that preclude a direct comparison, the trends we report are of similar magnitude. For example, the CDC reported in 2023 that 40% of high school students experienced persistent feelings of sadness or hopelessness almost every day for a period of two weeks or more in a row. Correspondingly

39% and 52% rated the impact of feelings of sadness or hopelessness on their ability to function as >7 and >6 on a 9-point scale respectively. Similarly, the CDC reports that 20% seriously considered attempting suicide in the US while in the Global Mind data 27% and 34% rated the impact of suicidal thoughts on their ability to function as >7 and >6 on a 9-point scale.

Smartphones in childhood and the rise of aggression

Previously, we have shown that adults 18-24 who reported getting a smartphone earlier in childhood had higher rates of suicidal thoughts, feelings of aggression, a sense of being detached from reality and hallucinations, especially in females[22]. Here we show that these trends persist in adolescents aged 13-17, the younger GenZers, with rising aggression and anger most strongly associated with age of first smartphone. With the age at which children get their first smartphone getting younger and younger, the implications of these findings are especially worrying. What's also notable is that the results are similar across the two vastly different countries and cultures of India and the US.

Although we're still uncovering how owning a smartphone from a younger age gives rise to these problems, it's well known that the internet can expose children to content that is unregulated or inappropriate[29]. For example research have shown that exposure to violent media at age 10-15 is associated with violent behavior in adolescence and adulthood[30]. In addition, we also see a correlation in our data between earlier age of smartphone ownership and earlier age of having a social media account, meaning that individuals are exposed to the pressures and bullying of social media from an earlier age. For example, research shows that early social media initiation (e.g. Snapchat or Instagram) before age 10 is significantly associated with more unsympathetic online behaviors, and greater likelihood of online harassment and sexual harassment victimization[31,32]. Smartphone use also often displaces other activities including face-to-face social interactions and sleep. For example, getting a smartphone during early childhood when core social skills, such as empathy, conflict resolution, and emotional regulation need to be practiced and developed in the real world, means that adolescents are less well equipped to manage anger and aggressive feelings. In addition, technology habits such as excessive screen time and having a smartphone next to the bed is associated with both poorer sleep quality and duration in adolescence[33,34] while, in turn, poor sleep is also associated with heightened aggression[35] .

Concluding thoughts and recommendations for action

The findings of this report paint a sobering picture of the state of adolescent mind health in our digital age. While smartphones cannot explain the full extent of the decline of mind health that we observe, the association between getting a smartphone at a younger age and increased feelings of aggression and anger calls for urgent societal action to safeguard today's youth and makes a strong case for delaying smartphones ownership as a method to reduce suicide and aggression in adolescence.

Around the world, parents, schools, and governments all have the power to reduce early childhood exposure to smartphones. While recent grassroot campaigns, such as Wait Until 8th in the US and Smartphone Free Childhood in the UK, as well as governmental action such as the banning of social media for under 16s in Australia, aim to delay and discourage smartphone use during early childhood, the rapidly shifting trend of ever-younger age of smartphone ownership shows that more action is needed, and fast.

Appendix 1

Methods

The Global Mind Project

The Global Mind Project acquires data from literate, Internet-enabled adults (aged 18+), and youth (aged 13-17) using a comprehensive online self-report assessment called the MHQ[36–38]. Adults take the adult version of the assessment, while youth complete a version which has been adapted for adolescents in terms of reading age and comprehension.

Presently, 1,000-2,000 people complete the assessment each day and are added to a dynamic database. In addition to the scored questions on their mind health, respondents answer various demographic, lifestyle, and life experience questions. These questions are slightly different in the adult and youth MHQ and tailored to their specific context (e.g. Youth-MHQ asks about school, whereas the MHQ asks about work).

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

Data collection

While the Global Mind Project acquires data from adults in 72+ countries in 17 languages, the Youth-MHQ which forms the basis of this report is presently run only in the United States and India in English.

United States

In the US, participants are recruited through advertising campaigns on Facebook and Google in the US by targeting populations in each age-gender group across a broad range of interest criteria[39]. For adolescents, outreach is currently carried out in English only. Participants take the MHQ for the purpose of obtaining their mind health (also called mental wellbeing) scores along with a detailed report offering self-help guidance.

Data used in this report included all youth responses (aged 13-17) obtained in the US between August 2023 and November 2024 (N=6,056; see associated tables for N values by age and gender) After the application of certain exclusion criteria described below, the final analyses included data from 5,488 adolescents.

Data collection in the US 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).

India

In India, participants are recruited through advertising campaigns on Facebook and Google in India by targeting populations in each age-gender group across a broad range of interest criteria[39]. For adolescents, outreach is currently carried out in English only. Participants take the MHQ for the purpose of obtaining their mind health (also called mental wellbeing) scores along with a detailed report offering self-help guidance.

Data used in this report included all youth responses (aged 13-17) obtained in India between August 2023 and November 2024 (N=5,683; see associated tables for N values by age and gender). After the application of exclusion criteria, the final analyses included data from 5,147 adolescents.

Data collection in India has ethics approval from the ICMR-Central Ethics Committee on Human Research (CECHR) (EC/NEW/INST/2021/1879; OHRP #00012875).

The MHQ

The MHQ is a unique comprehensive assessment of mind health and 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[37,38]. These 47 items are the same in both the youth and the adult version, differing only by the reading age and comprehension of the question wording.

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. In the Youth-MHQ, spectrum items (e.g. self-image) are rated on a scale from positive to negative where 1 = *It makes it very hard to do what I want or need to do;* 5 = *Sometimes I wish it was better but it's ok;* and 9 = *It is a real strength that helps me in life.* For items with varying degrees of problem severity (e.g. suicidal thoughts) 1 = *Never causes me problems;* 5 = *Sometimes causes me problems but I can manage;* and 9 = *Causes me serious problems in my daily life.* Respondents rate items based on their current perception of themselves.

The MHQ score is an aggregate score of mind health and wellbeing (also called 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[36]. Negative scores indicate a mind health 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.

The MHQ is freely available online, is anonymous, and takes ~15 minutes for an adult to complete and ~25 minutes for a youth to complete.

Data fields used in this report included 1) ratings to all 47 mind health and wellbeing questions 2) computed dimension scores and aggregate MHQ score and 3) responses to the following question on age of smartphone ownership: *'At what age did you get your own smartphone with Internet access that you could carry with you? Please estimate as best you can if you can't remember.'*

Data Analysis

Exclusion criteria

Respondents who stated that they did not find the MHQ easy to understand were excluded. This 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 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.

Data analysis and statistics

Average MHQ scores, average dimensional scores, and average ratings for each of the 47 items assessed were computed for all respondents altogether and for each age-gender and country group separately. These mean values as well as standard deviations, N values and P-values for all comparisons are shown in the associated data tables.

Appendix 2

Additional figures by biological sex and country

Figure A1

Average MHQ Scores and % Distressed/Struggling for males and females in the United States and India.

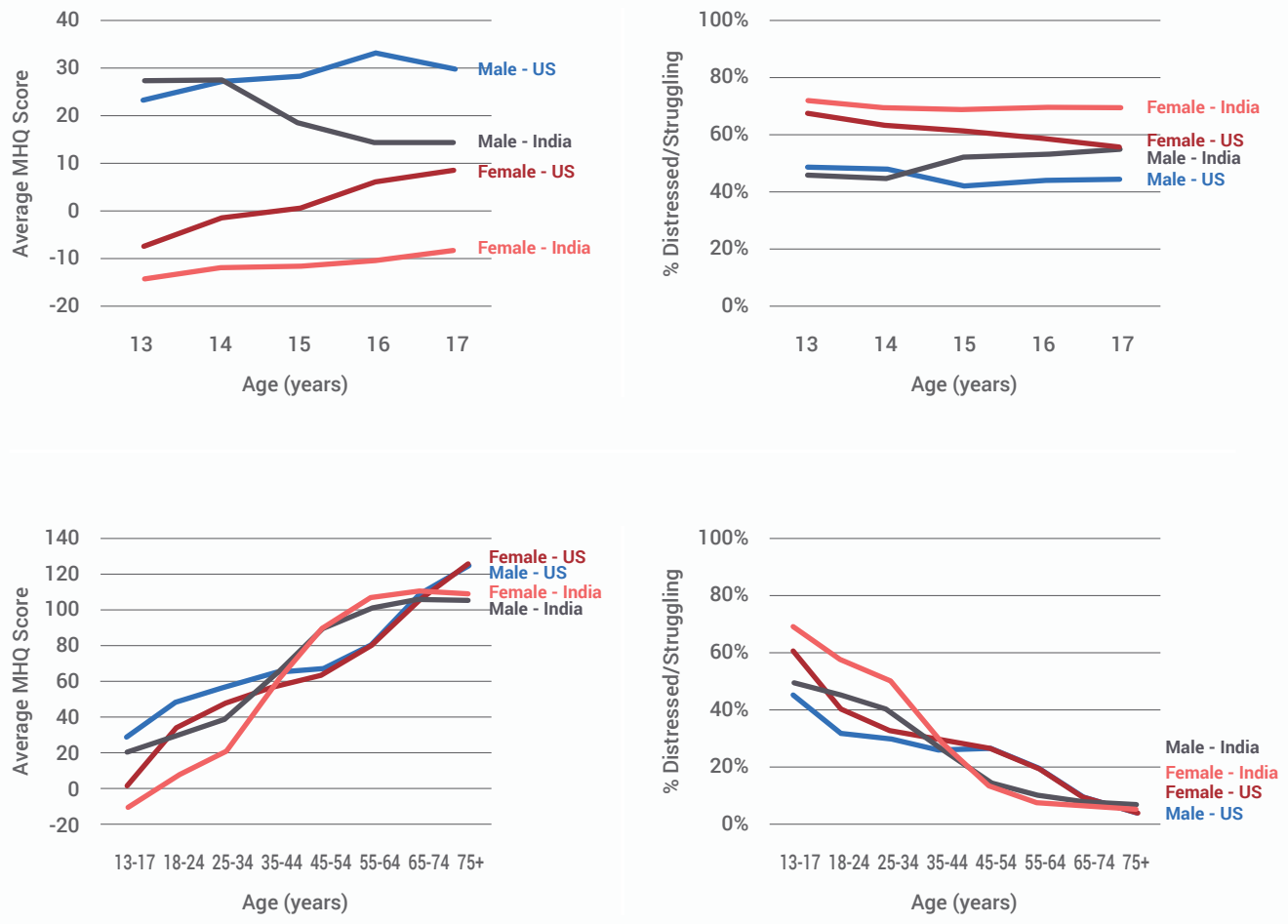


Figure A2

Top 12 most prevalent problems for males and females in the United States and India.

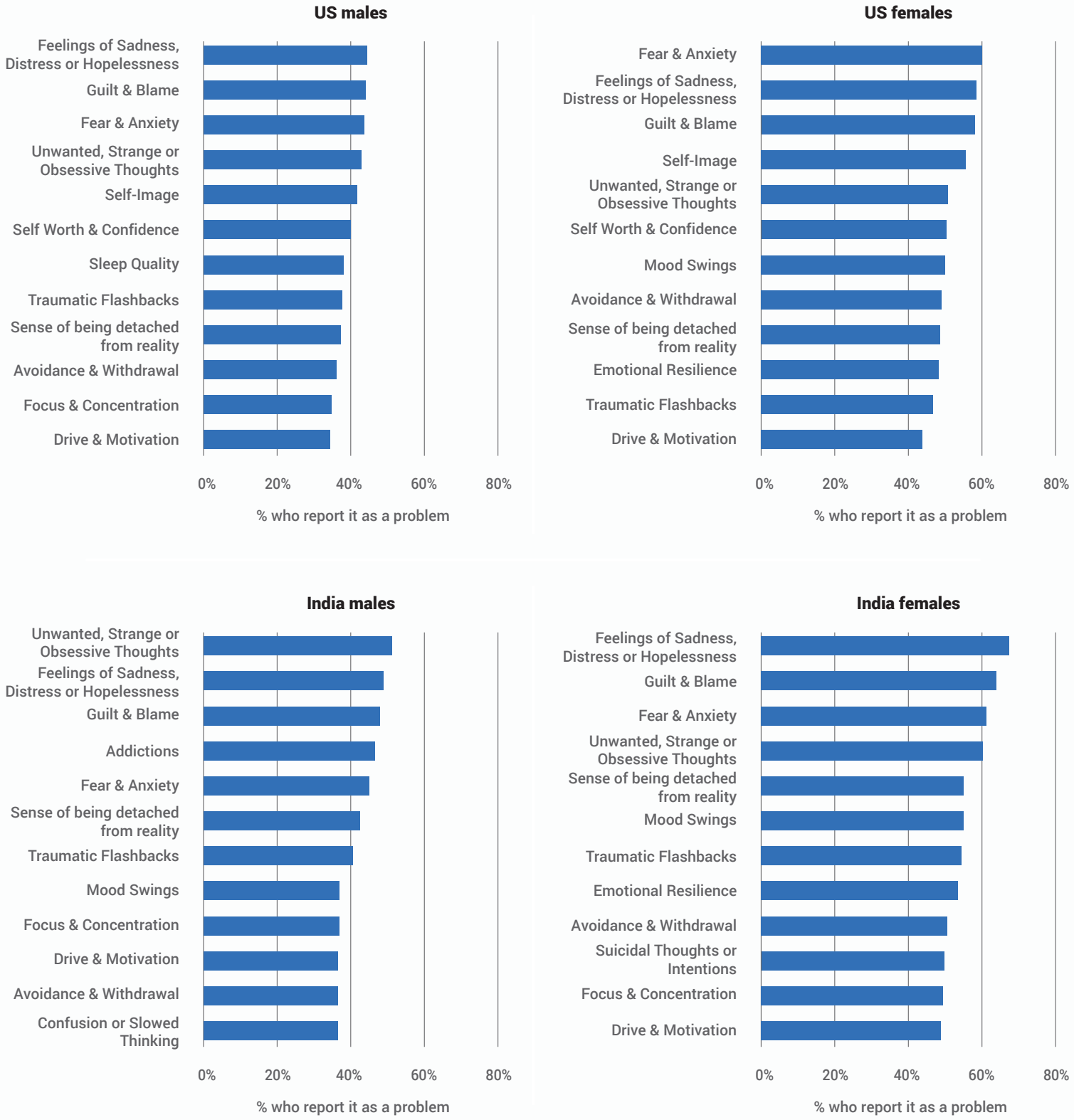


Figure A3

Age trend for males and females in India and the US separately for the 3 items shown to have the biggest difference overall between 13 and 17 years.

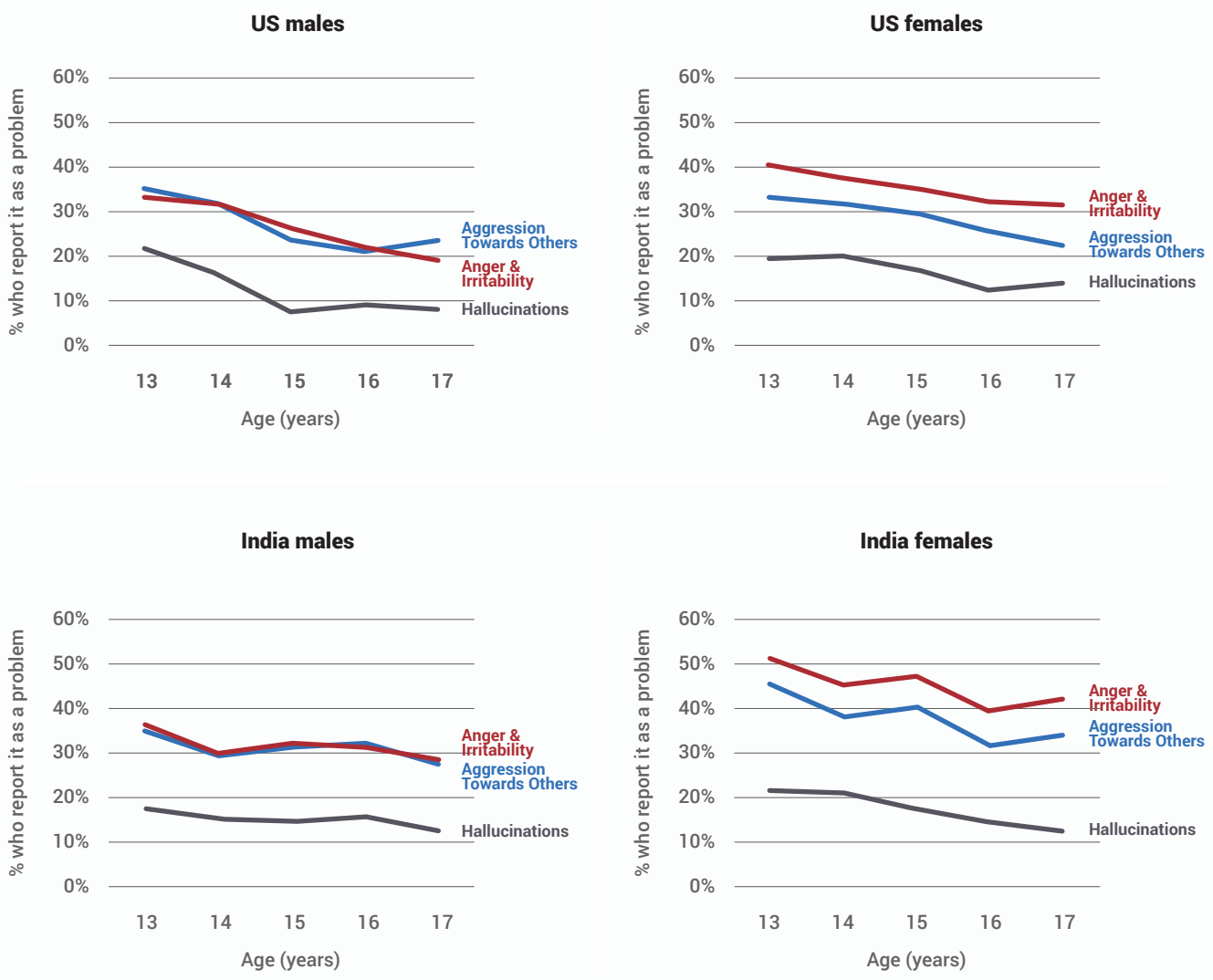
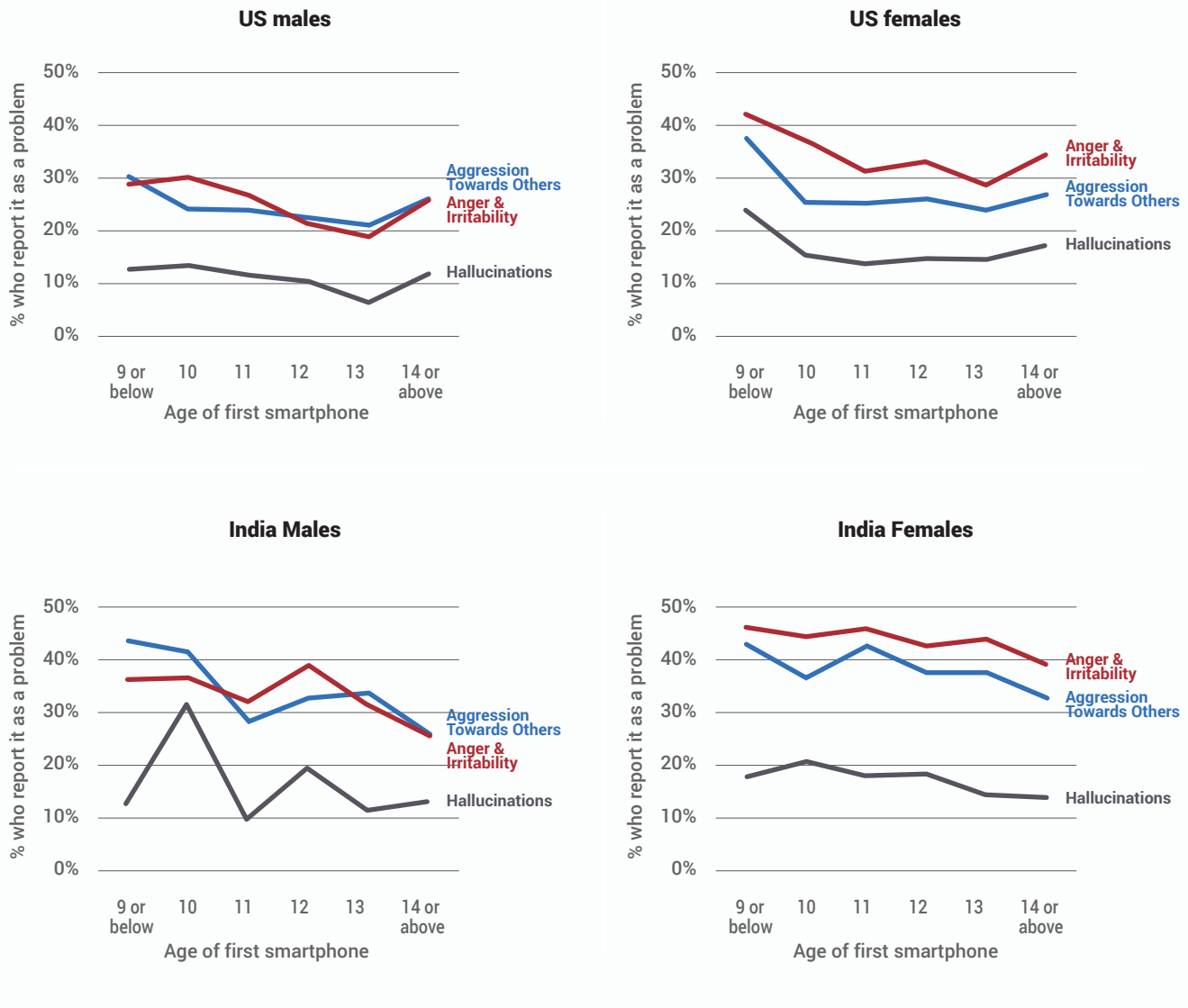


Figure A4

Age of first smartphone trend for males and females in India and the US separately for the 3 items shown to have the biggest difference overall in 13-17-year-olds who got their first smartphone before age 10 vs after age 13.



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