

## **Personal mobile devices and mental health: A double-edged sword?**

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### **Abstract**

It has been well documented that there is a correlation between the (over) use of social media and the rise of mental health disorders, especially dependency, depression, anxiety, narcissism, and other behaviour- and mood disorders. The use and functionality of personal mobile devices seized the opportunity to offer individualised and personalised therapeutic services such as applications for mindfulness, exercises to manage depression and anxiety and even to facilitate meditative practices (spirituality). One is then left undecided whether the use of personal mobile devices can be counted as a vice or a blessing. This article will explore impact the use of personal mobile devices have on mental health and the question of being human. It does so within the science and religion discourse.

### **Keywords**

*Technology; mental health; theology; religion; personal devices*

## **1. Introduction**

It is hard to imagine a time when we did not have personal mobile devices like cell phones. It has been astonishing to see the rapid advancement in cell phone technology since the first devices were launched. Since the 1990s, the technology has developed from the big, brick-like devices used solely for making telephone calls, to smaller (and lighter) multifunctional devices of which only one of the uses is that of making telephone calls. With the advent of applications (apps for short), amongst many other functionalities, came the ability to navigate the internet, send instant messages, take photos and document one's life on social media platforms. Furthermore, applications ranging from the most practical to the absurd are being developed, showing no limit to human imagination or innovation. So

doing, mobile devices have crept into almost every crevice of our existence, leaving very little space for life to be experienced without having a mobile device close at hand. Personal mobile devices such as cell phones draw the user into a world where it is enticing to find solutions to problems or to manage tasks while chanting the commonplace mantra: “There is an app for that ...” Indeed, there seems to be an app for virtually any activity or functionality that people come across. Let me illustrate by means of a few examples how wide-ranging some of these applications can be<sup>1</sup>:

If a person wants to play games to while away time, there are numerous applications that allow the user to either play games by themselves or to play in partnership or against users who literally may be located on the other side of the world. *There are apps for that.* If a person wants to interact with “somebody” without having to engage with an actual person, apps exist that allow a person to engage with an AI (Artificial Intelligence) companion, who can be designed according to the user’s preference. *There are apps for that.* If a person wants to throw their phone in the air and find out how high their device went, *there is an app for that.* If a person is out jogging and they want to know where the nearest ablution facilities are, *there is an app for that.* If a person wants to be woken up, not by a traditional alarm, but instead by being phoned by a random individual from anywhere in the world, *there is an app for that!*

Mobile devices have become an extension of one’s daily routine, activities, and connectedness. One only has to spend some time in a public space to witness the frequency with which people engage with their personal mobile devices. This article explores the impact (positive and negative) personal devices (like cell phones) have on mental health. It does so as part of a broader question, which drives my research focus, namely “What does it mean to be human?”. This article will also consider the use of personal mobile devices in what is called mTherapy, a reference to types of therapy that are accessible through the use of personal mobile devices. The discussion will then conclude by considering the relevance of this topic to the fields of Christian theology and ethics.

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1 These examples exist as real apps, which names I do not wish to include in this article, for ethical reasons.

## 2. What is the impact of mobile device usage on mental health?

In a previous paper, (Bentley, 2019), I already explored the impact social media (accessed mostly through mobile devices) has on human interaction. Focusing mostly on the user population of children up to young adults, the article drew largely on the work of Prof Jean Twenge, Professor of Psychology at San Diego State University, whose research points to a correlation between the frequency of social media engagement and the sharp rise in narcissistic behaviour among children and teens. It may be argued that correlation does not mean causation, but this observation has been supported by various other studies, such as by Davenport, Bergman, Bergman & Fearrington, (Davenport *et al.* 2014), Leung (Leung 2013), Heirman & Walrave (Heirman & Walrave 2008), Brochado, Soares & Fraga (Brochado, Soares & Fraga 2017), The University of Würzburg (University of Würzburg, 2017), to name but a few.

This article will not elaborate further on the intricacies of how these studies joined the dots between negative social behaviour and the prevalence of mobile device usage, or the use of social media. It is, however, noteworthy to mention the conclusions drawn by Heirman & Walrave (2008:1–6) on why negative social behaviour such as cyberbullying seems to increase with the use of mobile devices, accompanied by social media. This study argued that these technologies and functionalities:

- allow for a certain level of anonymity. Users can hide behind a digital persona which may be hard to link to their person, giving rise to more aggressive, unfiltered, and persistent negative behaviour.
- give a bully 24/7 access to the victim and vice versa. There is therefore no reprieve from the negative behaviour, leaving the victim with little to no safe space.
- lack in offering non-verbal communicative feedback (cues) that help to moderate behaviour. “Seeing tears, shaking heads, staring eyes, a frown, a bored expression and other more or less subtle face-to-face-cues can slam the breaks on what people are saying or doing” (Heirman & Walrave 2008:6).

Stevens, Nurse & Arief (2021:367) came to similar conclusions, adding that victims of cyber harassment more frequently experience heightened

levels of harmful mental health conditions, such as depression, anxiety, suicidal ideation and panic attacks. On the topic of Depressive and Anxiety Disorders, Thomée (2018:2692) found that in children and teens a correlation exists between prolonged use of personal mobile devices (coupled with social media platforms) and depressive symptoms. This study defined prolonged use as spending more than 2 hours per day on mobile devices, primarily engaging in social media platforms. Another mental health concern that is on the rise is that of mobile device dependency. Bhattacharya et al. studied the prevalence of dependence on personal mobile devices (not only among children and teens) and found that dependence symptoms as described in DSM-IV, and subsequently DSM-V and DSM-VTR can be identified. The phrases “Nomophobia” (no-mobile phobia), “Phubbing” (snubbing a person who is physically present in favour of a phone), “Ringxiety” (anxiety sparked by the ringing of a mobile device or an alert tone indicating a notification) and “Phantom ringing” (imagining that one’s phone is ringing or a notification alert is received, when it did not happen), are all common phrases that are indicative of dependency-like behaviour (Bhattacharya, Bashar, Srivastava & Singh 2019:1297–1300). Coupled with this the lack of being truly present in social contexts, being preoccupied with mobile devices instead of engaging with others and one’s environment (George & Odgers, 2015:840). Although users may claim that they are able to “multitask” in these situations, the opposite is actually true, with strong evidence of impairing cognitive performance whilst “multitasking” (George & Odgers 2015:844). From these studies, it certainly appears as if personal mobile devices are taking over not only one’s life, but one’s attention and capacity to engage socially and interpersonally (through physical presence). It is no wonder that we find a decreased ability for younger generations to identify non-verbal cues, leading to increased social anxiety and miscommunication!

It should nevertheless be asked whether mobile devices themselves are to blame for these mental health concerns, or whether the blame is to be placed elsewhere, for example on the user? Should people be more aware of their attachment to their mobile devices? Should users be more attentive to how much they allow their personal mobile devices to dictate their social interactions, their functionality or even their mental health? Perhaps we should enquire as to what exactly about mobile device usage may be causing

these mental health concerns? Two unrelated studies (Lissak 2018:152; Thomée 2018:5) independently found that the biggest contributing factor to negative mental health outcomes amongst children and teens, referring specifically to Depression and Anxiety disorders relates to the impact mobile devices have on sleeping patterns. Bedtime mobile use tends to lead to later bedtimes, resulting in less sleep time. Blue light stimulation of the brain leads to lower sleep quality. Quantity and quality of sleep are therefore affected. Less sleep leads to reduced daytime functioning, due to tiredness. This, in turn, leads to higher levels of perceived stress, higher levels of anxiety, increased feelings of depression on overall lower levels of mental wellbeing.

Odgers & Jensen (2020a:145) concur with these findings, explaining that mobile devices should not be demonised. Instead, the secondary effects of prolonged mobile device use, like poor sleeping habits, the type of social interaction (decreased physical presence in interactions) and forms of communication (lacking non-verbal cues), should be the focus of how we address the functionality and use of personal mobile devices.

It may appear from these findings that personal mobile devices are just not good for people's overall mental health, but this is not the entire narrative. As much as personal mobile devices may contribute to several mental health challenges, so too do they offer a wide range of benefits for those who live with these conditions. In fact, they offer a new opportunity to users for contributing to their own mental health journeys. If personal mobile devices are the medium of choice for social interaction among children and adolescents, then it could also be the medium through which mental health interventions can be facilitated (Odgers & Jensen, 2020b:346).

### **3. Therapy, benefits and drawbacks**

In the past decade, there has been a substantial growth in the market for mental health apps. "The global mental health apps market size was valued at USD 5.2 billion in 2022 and is expected to expand at a compound annual growth rate (CAGR) of 15.9% from 2023 to 2030." (Grand View Research, 2023). This makes the digital mental healthcare sector one of the most prolific globally. It heralds a new era of mental healthcare, where patients are deemed to have more control over the process of their mental health

journeys (Hilty, Chan, Hwang, Wong & Bauer 2018:325). But why is there such a growing demand for digital mental health apps? Is it only because people are increasingly using their personal mobile devices, also applying the mantra of “There is an app for that ...” when it comes to their own personal mental wellbeing?

While this may be the case, there are also other factors that are leading to a turn towards digital care. The first is that access to mental health services and treatment is a global problem. It is estimated that there are on average 9 psychiatrists per 100 000 people in developed countries and 0.1 for every 1 000 000 people in lower income countries (Vaidyam, Wisniewski, Halamka, Kashavan & Torous 2019:457). 45% of the world population live in countries with fewer than 1 psychiatrist per 100 000 people (Han, Zhang, Mascolo, André, Tao, Zhao & Schuller 2021:97). The second is that mental health services and treatment are costly. On average, in South Africa the cost of one consultation with a psychiatrist or psychologist (private sector), equates to the cost of a year’s subscription to a mental health app, with unlimited interactions. It makes sense that the market is ripe for mTherapy as it provides access to mental health services, is a cost-effective alternative, and is offered through a medium which is increasingly becoming an extension of our personhood: personal mobile devices.

To this end, apps are being designed, using different modalities to meet specific needs. Teles et al. (Teles, Rodrigues, Viana, Silva, Couthino, Endler & Rabêlo 2019:710) identify the following mental health app-modalities:

- Tests: Apps that provide digital versions of mental health questionnaires in order to identify mental health challenges.
- Educational: Apps that offer educational content about mental health conditions such as depression, providing information about symptoms, treatment and where to find assistance.
- Mood trackers: Apps that provide Ecological Momentary Assessment (EMA), enabling the user to perform a self-assessment and record their experiences, feelings and emotional state.
- Decision support: Apps that offer Ecological Momentary Intervention (EMI), giving the user immediate responses by mental health professionals, based on data supplied in mood trackers.

- Games: Apps that enable the user to manage their condition, using educational gamification techniques.
- Chatbots: Apps that simulate friendship/companionship through AI conversations.
- Self-help: Apps that provide guidance on how to manage symptoms of e.g., depressive disorder.
- Online counselling: Apps that connect the user with a licensed professional via remote communication functionalities.
- Alternative methods: Apps that provide alternative therapies such as Yoga, hypnosis, meditation, and diet trackers.
- Social networking: Apps that connect people who are journeying through the same mental health challenges, providing a form of group therapy.
- Disorder-specific apps: Apps that focus on specific mental health conditions, such as Postpartum depression.

Despite the vast variety of modalities, mental health apps can be divided into two broad categories: standalone apps, that allow users to journey on their mental health path without other assistance, and apps that are used as aids in conjunction with therapy (Prentice & Dobson 2014:282). As to the efficacy of apps in assisting a person in their mental health journey, there is divided opinion, with several caveats.

On the positive side, mental health apps show potential to be effective and have certainly increased treatment, or shall we rather say “management” accessibility (Donker, Petrie, Proudfoot, Clarke, Birch & Christensen 2013:9). When used in a disciplined and persistent manner, apps have shown to be effective in the management of especially depression and anxiety disorders (Hwang, Ha & Kim 2021:14–15). It must be noted that the functional word in this study is “management” and not “treatment”. Furthermore, with the advancement of technology and the employment of Artificial Intelligence in apps, chatbots are used effectively in suicide prevention and cognitive-behavioural therapy, mimicking humanlike responses to input received from the user. (Vaidyam *et al.* 2019:457). Such technologies offer care to those who would otherwise not have sought assistance, either out of the associated stigma attached to seeking mental

health assistance or the cost associated with receiving professional mental healthcare (Vaidyam *et al.* 2019:459)<sup>2</sup>.

There are however many concerns from mental healthcare givers regarding the use of mental health apps. The most frequent critique is that the use of mental health apps lack social (physical, interpersonal) interaction. Engaging with a therapist, who is physically present, allows the patient to experience real person empathy, receiving treatment that is individualised and suited specifically to the needs of the patient. Personal interaction with a therapist allows for physical and emotional cues through the therapeutic process, and the building of doctor-patient relationships, all of which form part of the therapeutic process (Norris, Swartz & Tomlinson 2013:382). Although the use of apps may have tremendous positive effects, clinicians are (and perhaps should be) reluctant to prescribe apps as a form of treatment (Marshall, Dunstan & Bartik 2020:27), and can rather suggest that these be used as a tool in conjunction with in-person therapy in the management of mental health disorders (Price, Yen, Goetter, Herbert, Forman, Acierno & Ruggiero 2014; Lui, Marcus & Barry 2017).

If a user is solely reliant on mental health apps, without the benefit of having in-person therapy, it will demand a great deal of self-motivation to use the apps consistently and continuously. This may prove to be a challenge if, for instance, a person experiences severe depressive or anxiety-related symptoms. Will a person who finds themselves in a very bad mental space garner the strength and motivation to turn to their apps for assistance? Will the apps convey the necessary skills to assist the person in managing their severe episodes? Can the apps be adaptive enough to cater for a person's immediate context and needs? These are all critical questions that show the tremendous risk attached to using mental health apps without seeking in-person therapy.

In addition to questions of efficacy, questions are being asked about the validity and legal standing of apps in mental healthcare. On an ethical level, it is noted that by using mental health apps, people are volunteering a large amount of personal data to web based companies, with very little

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2 Vaidyam *et al.* (2019:460) list a series of studies that have been done on the efficacy of using chatbots in therapy of mental health disorders, all with favourable outcomes.



existing legal regulation on how this data is stored or used (Vaidyam *et al.* 2019:463). How much privacy is therefore possible as digital data stands the risk of being compromised and used in an unethical manner? Associated with the legal requirements of apps, it is further noted that the vast minority of mental health apps do not offer disclaimers on the efficacy of their usage or provide contact with a therapist in situations where the apps prove to be insufficient in the treatment or management of mental health disorders (Prentice & Dobson, 2014:284). Even in situations where apps claim to offer contact with a person, it was found that fewer than 10% of online e-therapy providers were licensed psychologists (Norris *et al.* 2013:384). This is a cause of great concern and beckons the question whether the motivation for the development of mental health apps is truly to benefit the user, or if it exists as a market that can be exploited.

Furthermore, when used to self-treat mental health disorders, the user stands the risk of apps being inaccurate (by not considering the specific context of the user or their formal diagnosis) and thus can possibly give harmful information (Lui *et al.* 2017:207) that may be detrimental to the user's mental or physical health. Throw into the mix the issue of language barriers (where apps are not offered in the language of the user, and therefore the user engages with the apps in their second or greater language) (Norris *et al.* 2013:385), and one quickly notes the potential for harm that exists through misunderstanding or misinterpretation. What if an app seems to suggest a diagnosis which does not correlate with that of a trained mental health practitioner? Will the user show a bias in favour of their apps? It appears that for many people, doctor internet carries more authority than their human counterparts. Confirmation bias will play a role in which advice is followed.

It is not all doom-and-gloom. There is certainly space for mental health apps, but where and how are they to be used? In a study conducted by Chan & Honey (2022), the following observations are offered:

First, mental health apps prove to be helpful in symptom management and learning new skills. This said, it should be noted that mental health apps are not a replacement for in-person therapy but can be used as a data source to assist health care clinicians in the treatment programme of their patients. Second, apps increase mental health care accessibility as all that is required

is a personal mobile device and reliable internet connectivity. Third, mental health apps are user-friendly with the ability to integrate into a person's daily routine without causing too much disruption. Lastly, users seem to be generally satisfied with the level of assistance offered by mental health apps. It should however be noted as found in another study, that retention rates of users are rather low, with only 3% of users regularly using the apps after the first 30 days (Baumel, Muench, Edan & Kane 2019:1). Apps are nonetheless available according to the user's preference and needs.

The bottom line concerning personal mobile devices usage and mental health apps is therefore: "... there is potential for mobile digital mental health apps to be used in the multidisciplinary clinical setting but not as a replacement for face-to-face and traditional modalities such as traditional mental health care, rather as an adjunct for some consumers and as an alternative option for ongoing care" (Chan & Honey 2022:166).

Personal mobile devices usage therefore is a double-edged sword. On the negative, it may be the catalyst for the propagation of certain mental health challenges. On the other, it also provides a valuable and accessible tool to assist those who face mental health challenges. This, however, as noted should be conscious of the various ethical, practical, and longer-term methodologies of managing and treating mental health challenges.

But what about religion? Why is this discourse important for theology?

#### **4. Some theological considerations**

First of all, as theologians we have to be cognisant of what is taking place in terms of the question of being human. As the use of personal mobile devices is increasingly becoming an extension of our personhood, how does it impact on our understanding of Christian anthropology? More nuanced, how does it affect our understanding of *Imago Dei*? It is undeniable that our definitions of *being human* are changing, of which only one aspect is our ability to extend ourselves, our identities, health and selfcare through technologies such as personal mobile devices. With the rise of the digital self and the extension of one's personhood, including one's spirituality, is it possible, feasible or even moral to blur the lines between one's person and one's digital presence? One such question is raised by Pulis (2022:199–219),

who argues that notions such as salvation need to be reimagined in light of these developments. His research asks the question, in my words: Is there an app for salvation? This is not a new question. Houtman & Aupers (2010:1–31) wrote a fascinating chapter already in 2010 in which this notion was explored.

Second, how does the church respond to the increasing notion of the individualised self (a notion exacerbated by the self-surrender to the digital self) and the much-needed social component of being human? Does the communal nature of the church, both in its expressions of worship and social presence sufficiently speak to developing notions of the digital self?

I would like to suggest that theology and spirituality certainly have a role to play in our understanding of being human, but it cannot come at the expense of turning a blind eye to people's lived realities, including their realities becoming more digital. As much as technology is increasingly encroaching on our human identities, these technologies have limited abilities to ask fundamental questions about who we are. Spiritual disciplines, especially those that encourage self-reflection are essential in helping us understand who we are, what we use in our experience of being human and the effect it has on our humanity. I can imagine the reader thinking: "Practicing spiritual disciplines ... I'm sure there is an app for that". This may be true and perhaps the church could be more attentive on how it engages with congregations on the matter of practicing one's faith through the use of apps and mobile devices, but there are further considerations.

Besides offering a spiritual base for people, the Church offers the opportunity for in-person interaction, which is essential for social cohesion, learning to manage diversity and being part of something bigger than the self. If the increasing dependence on health apps are due to accessibility and affordability of health care services, then it would be incumbent on the church (which has a large social presence) to both offer mental health services by either facilitating counselling or to partner with mental health care services that provide immediate and affordable care.

The author admits that these are rather sweeping statements and generalisations concerning the place and function of religion (of which Christianity is only but one of many), each of which can be explored in greater detail. The point of this article is not to provide a theological answer

to these emerging challenges, but merely to hold up the existing realities and accompanying studies in the science and religion discourse and to ask: What does it mean to be human?

Needless to say, the emergence of the digital self, and extension of our dependence on personal mobile devices will leave no doctrinal stone unturned. It impacts on the manner in which we view ourselves, what we believe about being human and where we see ourselves journeying to. This relates to matters of health, consciousness, mental wellbeing and even spirituality. This article, thus for me, opens the door to a much larger research programme, critically asking the question of how the digital self is to be understood in light of the different Christian doctrines.

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