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Future Facts: Unveiling Mental Health Issues in the Digital Age

Linnea Daniel, Sondre Robin, and Matthew Aleksander[*]

Psychology Department, University of Tromsø N−9037, Tromsø, Norway

*Corresponding author: m.aleksa1@psyk.uit.no

Abstract

The digital age has revolutionized communication, information access, and social interaction, but it has also introduced new mental health challenges. The pervasive use of social media, constant connectivity, and the pressure to maintain an online presence contribute to increased levels of anxiety, depression, and loneliness. Future Facts: Unveiling Mental Health Issues in the Digital Age explores these emerging issues and the complexities of addressing mental health in a digitally dominated world. Research suggests that excessive screen time and social media use can harm self-esteem, body image, and sleep patterns, particularly among adolescents. Cyberbullying and online harassment exacerbate these effects, leading to severe emotional distress. Moreover, the digital age has blurred the boundaries between work and personal life, contributing to burnout and stress. Conversely, digital platforms offer new opportunities for mental health support through teletherapy, mental health apps, and online communities that provide peer support and resources. Understanding the dual impact of digital technology is crucial for developing effective interventions and policies to mitigate adverse effects while leveraging positive aspects. Future mental health strategies must incorporate digital literacy, promote healthy online habits, and ensure equitable access to digital mental health resources. Addressing these issues is essential for fostering a balanced relationship with technology and safeguarding mental well-being in the digital era.

1. Introduction

In the digital era, mental health issues are intertwined with technology's pervasive influence. From cyberbullying and social media comparisons to the potential of artificial intelligence in therapy, the future of mental wellbeing is inextricably linked to our online lives. While the internet provides access to vital information and support, it also harbors risks like addiction, harassment, and burnout [1]. By examining emerging trends and the role of artificial intelligence, we uncover practical strategies to navigate the digital landscape while safeguarding psychological well-being [2].

1.1 Access to Information and Support

The digital age has revolutionized access to mental health information and support services. With the ubiquity of smartphones and internet connectivity, individuals can now access a wealth of resources at their fingertips, breaking down barriers to seeking help (see Fig. 1).

- **Digital Platforms and Services**: A range of digital platforms offer tailored mental health services, including telepsychiatry, digital therapeutics, and wellness apps. These platforms democ-
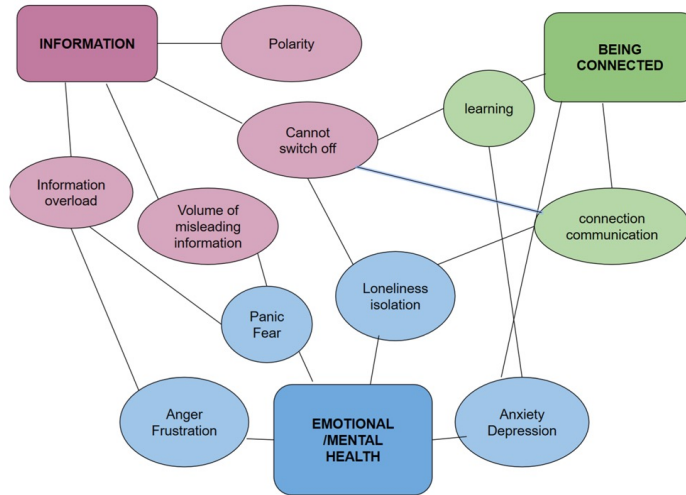
Figure 1. Matrix of interconnectedness of themes and subthemes.

ratize access to mental health support, reaching individuals in remote areas and providing more economical solutions compared to traditional therapy sessions.

- **Anonymous and Stigma-Free Support**: Digital platforms provide a safe, anonymous space for individuals to seek help without fear of judgment or social stigma. This can be particularly beneficial for those who may hesitate to seek in-person support due to cultural or societal barriers.

- **Integrated and Coordinated Care**: The future of mental health care envisions an integrated network of services with coordinated care, continuous monitoring, and early intervention. Electronic Health Records (EHRs) ensure seamless sharing of a patient's mental health history, facilitating a holistic approach to treatment.

Mobile health (mHealth) technologies have emerged as a powerful tool to improve access to mental health support. These asynchronous mobile technologies, such as apps, text messaging, email, and online forums, aim to improve health outcomes through convenient, patient-driven access to self-management tools and peer support. The app ecosystem is constantly evolving, with over 10,000 apps related to mental health released in 2020 alone [3, 4, 5].

However, it's crucial to address challenges around privacy, data security, and the digital divide to ensure equitable access to these digital mental health resources. Strategies to boost digital literacy, such as training peer specialists as digital navigators, are essential to bridge the gap [6].

2. Digital Therapeutics and Mental Health Apps

The digital age has ushered in a new era of mental health interventions, with mobile apps and digital therapeutics emerging as powerful tools to support psychological well-being. These innovative solutions leverage technology to provide accessible and personalized care, offering a range of benefits and considerations (see Fig. 2).

- **Mobile phone and internet programs using coaching, therapist guided and self guided techniques have been shown to be effective at reducing depressive symptoms and anxiety in controlled clinical trials**. However, these digital tools can supplement other traditional therapy techniques in that they provide evidence based interventions. **Predictive Analytics:**
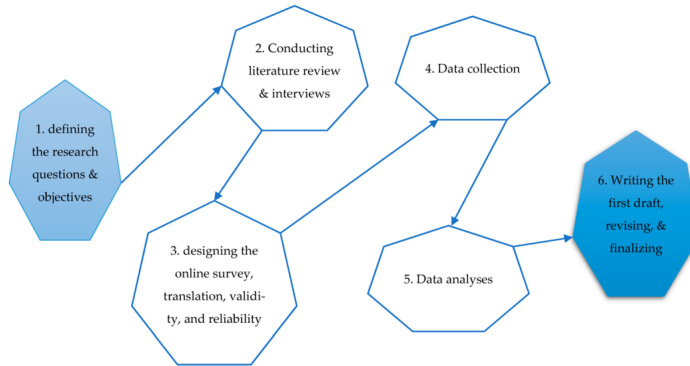
Figure 2. The methodological process in this research. Source: Researcher's own work.

Smartphone apps to predict mental health status of users have been built using gamified social mobile applications and social media data. These tools analyse user behaviour and engagement patterns and may be able to identify those at risk and help intervene early.

However, there are challenges to be addressed:

- **Sustained Engagement**: Despite the potential benefits, there is an absence of sustained engagement with digital tools, as evidenced by high attrition rates in clinical studies. Maintaining long-term user commitment remains a hurdle.
- **Implementation Barriers**: Bridging the gap between the preliminary development stages of mental health status prediction tools and their implementation in clinical settings presents obstacles. Integrating these technologies into existing healthcare systems requires careful consideration.

To maximize the impact of digital therapeutics and mental health apps, a collaborative approach is crucial:

- **User-Centered Design**: Clinician and patient input and feedback are essential when designing these tools to improve engagement and usability. Incorporating end-user perspectives can enhance the effectiveness and adoption of digital interventions.
- **Ethical Considerations**: Extra care is required in the development and implementation of digital tools for vulnerable groups like children and adolescents, who are more susceptible to manipulation via digital platforms. Robust ethical frameworks and safeguards must be in place to protect these populations.

By addressing these challenges and leveraging the strengths of digital technologies, the mental health landscape can harness the power of innovation to provide accessible, personalized, and effective care for individuals in need [7, 8].

2.1   Reducing Stigma through Online Advocacy

Online advocacy and interventions have emerged as powerful tools in the fight against mental health stigma. A systematic review found that online anti-stigma interventions demonstrated a significant reduction in public stigma towards individuals with various mental health conditions. The meta-analysis revealed that participants in online intervention groups experienced a notable decrease in public stigma compared to non-online, waitlist control, and no-intervention groups [9, 10].

Significantly, the review highlighted that online interventions were equally effective as traditional

in-person interventions in reducing public stigma. This effectiveness is attributed to the integration of educational and social contact-based approaches within these online programs. While online interventions offer advantages such as wider reach and lower costs, potential challenges like high dropout rates need to be addressed [11].

Successful campaigns to address mental health stigma have focused on three main strategies :

1. **Education-based strategies**: Providing accurate information and dispelling myths about mental health conditions.
2. **Contact-based strategies**: Facilitating direct or indirect contact with individuals who have experienced mental health challenges, promoting empathy and understanding.
3. **Advocacy strategies**: Encouraging individuals to speak out and advocate for change, challenging negative attitudes and stereotypes.

The "Action Minded" campaign exemplifies the integration of these strategies in a digital media campaign. Featuring video and photo testimonials, advocacy-focused content, and community engagement, the campaign reached over 90,000 followers, generated over 23 million impressions, and resulted in significant improvements in beliefs associated with susceptibility, societal integration, and confidence in supporting someone with a mental health condition [12].

Future factssuggest that online interventions can be an effective approach for reducing public stigma towards individuals experiencing mental health conditions. However, addressing potential challenges and leveraging the strengths of digital technologies will be crucial in maximizing their impact [13].

3. Social Media and Comparison Culture

The pervasive use of social media has been linked to an increase in mental health concerns, particularly among young people. One key factor contributing to this is the opportunity for social comparison that these platforms provide. Users often present idealized versions of themselves, curating a "digital self" that may not reflect their real-life experiences. This can lead to unrealistic comparisons and a reduction in self-esteem, as people tend to make upward comparisons, comparing themselves to those who appear better off [14, 15, 16, 17] (see Fig. 3).

Figure 3. Value generation process for digital and novel interventions in a global context, with short summary of long-term societal and economic implications.

- Social comparison theory suggests that people have a tendency to make upward comparisons, comparing themselves to those who appear better off, which can reduce self-esteem.

- Self-presentation theory suggests that people curate an idealized "digital self" on social media, which may not reflect their real-life experiences, contributing to unrealistic comparisons.

Studies have shown that upward comparisons are more common on social media, and these negative comparisons partially mediate the association between problematic social media use and depression [18]. Girls and women may be particularly affected by social media comparison due to factors like the targeting of beauty-related ads, the popularity of "fitspiration" and "thinspiration" accounts, and the prevalence of cyberbullying as explained in Table 1 [19, 20].

Table 1. Impact of Social Media Comparison

Impact of Social Media Comparison	Description
Psychological Well-being	Social comparison orientation in social networking sites (SNSs) can decrease psychological well-being due to unfavorable social comparison or envy.
Self-esteem	Self-esteem had a significant negative parallel mediation effect in the relationship between social comparison orientation and psychological well-being.
Perceived Social Support	Perceived social support and self-esteem had a negative sequential mediation effect in the relationship between social comparison orientation and psychological well-being.

While social media can be a tool for maintaining connections and reducing loneliness, especially among older adults, it can also contribute to feelings of loneliness when used as an escape from social interactions or when used excessively around friends and family. It's important to be mindful of how social media feeds make you feel, as even short periods of lowered mood, self-doubt, or anxiety can add up over time. Additionally, the neurological processes at play, such as the dopamine hits from likes, shares, and comments, can be compelling and contribute to unhealthy social media use [21].

4. Digital Burnout and Information Overload

In the digital age, the constant influx of information and connectivity can take a toll on our mental well-being. Negative consequences from technology overuse can impact an individual behaviorally, affectively, and cognitively. Detrimental impacts on adults, adolescents, and children from continual connectivity include lowered social skills, self-motivation, emotional intelligence, and empathy, as well as increased conflict with others, ADHD, and depression in younger populations [22, 23] (Fig. 4).

Information overload occurs when the flow and amount of information is too much for our brains to process, leading to confusion, indecisiveness, stress, and mental fatigue [24, 25]. It can impact mental health in the following ways:

- **Psychological stress and anxiety**: The constant barrage of information can create a sense of overwhelm and anxiety, leading to increased stress levels.
- **Sleep complications**: The blue light emitted by digital devices can disrupt sleep patterns, and the constant urge to check for new information can lead to insomnia.
- **Struggles with attention and concentration**: Information overload can make it challenging to focus and concentrate on tasks, leading to decreased productivity and increased frustration.
- **Social comparison and dented self-esteem**: Exposure to curated and idealized content on social
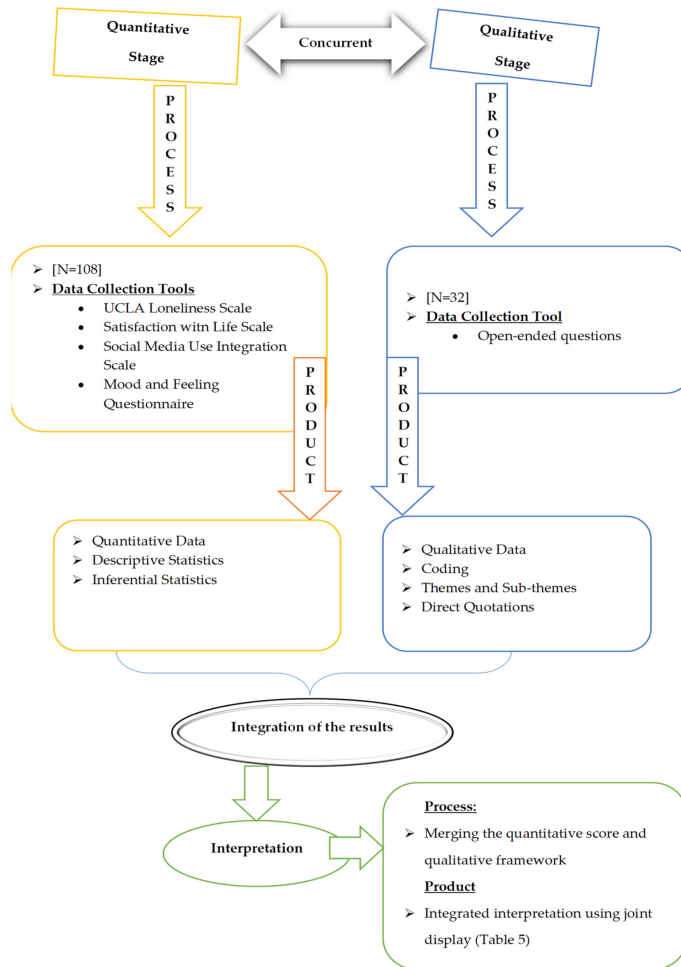
Figure 4. The process diagram of the research.

media can fuel unrealistic comparisons and negatively impact self-esteem.

To cope with information overload, consider the following strategies:

1. **Digital detox**: Periodically disconnecting from digital devices and limiting exposure to information can provide a much-needed break for the mind.
2. **Embracing mindfulness and meditation**: Practices like mindfulness and meditation can help cultivate focus and reduce the impact of information overload.
3. **Strategic information management**: Prioritizing and filtering information sources can help manage the flow of information more effectively.
4. **Healthy lifestyle habits**: Maintaining a balanced lifestyle with regular exercise, proper nutrition, and adequate sleep can improve overall mental resilience.

Furthermore, digital burnout is a growing problem, with 87% of American office workers spending an average of 7 hours per day staring at screens, and over 50% reporting fatigue or depression from digital overload. Symptoms of digital burnout include feelings of energy depletion or exhaustion, increased mental distance from one's job, and reduced professional efficacy. Excessive screen

time, especially before bed, can lead to insomnia, sleep disturbances, and increased vulnerability to anxiety, low mood, and irritability [26].

Constantly checking news and social media feeds can feed into anxiety by creating a false belief that having more information can provide control over the future. The unrealistic expectation of being accessible 24/7 due to technology can also negatively impact mental health. To combat digital burnout, consider strategies such as not responding to messages immediately, leaving work devices at work, reducing the number of online accounts and social media platforms, and being selective about news consumption [27].

5. Cyberbullying and Online Harassment

The rise of digital platforms and social media has given rise to a concerning phenomenon – cyberbullying and online harassment. These harmful behaviors can have severe consequences on an individual's mental health and well-being (Fig. 5).
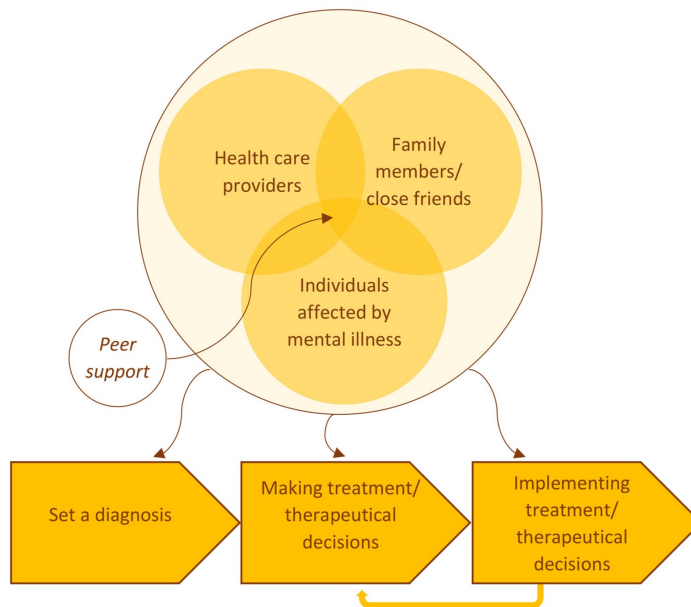
Figure 5. Extended model of shared decision making.

- **Cyberbullying**: Involves using digital technologies to intentionally harass, threaten, or humiliate someone. It can take various forms, such as sending hurtful messages, sharing embarrassing photos or videos, or spreading rumors online [28]. Cyberbullying can lead to feelings of anxiety, depression, low self-esteem, and even suicidal thoughts in victims.

- **Online Harassment**: Encompasses a broader range of behaviors, including stalking, hate speech, and targeted abuse based on gender, race, or other personal characteristics. Online harassment can create a hostile and intimidating environment, leading to psychological distress and social isolation.

The anonymity and perceived distance of online interactions can embolden perpetrators, while the potential for widespread dissemination amplifies the impact on victims. Furthermore, the permanence of digital content means that the harmful effects can linger long after the initial incident as explained in Table 2.

Table 2. Impact of Cyberbullying and Online Harassment

Impact of Cyberbullying and Online Harassment	Description
Mental Health	Victims often experience anxiety, depression, low self-esteem, and suicidal ideation.
Social Isolation	The harassment can lead to avoidance of social situations and withdrawal from social circles.
Academic/Professional Performance	The psychological distress can negatively impact academic performance or work productivity.

To address these issues, a multi-pronged approach is necessary. [29, 30]:

1. **Education and Awareness**:Promoting digital literacy and educating individuals, especially youth, about the consequences of cyberbullying and online harassment.
2. **Reporting and Support Systems**:Implementing robust reporting mechanisms and providing support resources for victims, such as counseling services and legal assistance.
3. **Legislation and Enforcement**: Strengthening laws and policies to hold perpetrators accountable and protect victims' rights.
4. **Fostering Empathy and Respect**: Encouraging a culture of empathy, respect, and responsible online behavior through community initiatives and educational programs.

By addressing cyberbullying and online harassment, we can create a safer and more inclusive digital environment where individuals can engage without fear of harassment or abuse [31].

6. Setting Digital Boundaries

In the digital age, setting healthy boundaries is crucial for maintaining mental well-being. Establishing limits and creating tech-free zones can help strike a balance between the benefits and potential drawbacks of technology. Here are some strategies to consider:

- **Time Limits and Tech-Free Zones**: Set reasonable time limits for screen time and designate specific areas or activities as tech-free zones. This could involve keeping phones out of sight during mealtimes or limiting login times for social media apps.

- **Screen-Free Days or Evenings**:Implement a "Screen-Free Sunday" or "Screen-Free Evenings" routine, where you take a break from all screens, including TV, to be fully present in the moment.

- **Mindful Device Usage**: When spending time with others, please turn your phone to silent mode and place it upside down to eliminate distractions and be fully engaged in the conversation. You can also delete email apps from your phone to set expectations for response times and avoid constant checking.

- **App Limits and Downtime**:Utilize features like "App Limits" and "Downtime" on your devices to restrict the time spent on social media and other apps. Unfollow or mute accounts that don't provide positive, encouraging, or inspirational content, as explained in Table 3.

Table 3. Strategies and descriptions

Strategy	Description
Time Limits	Set reasonable time limits for screen time
Tech-Free Zones	Designate specific areas or activities as tech-free
Screen-Free Days/Evenings	Implement a routine to take breaks from all screens
Mindful Device Usage	Turn phones off or upside down when with others
App Limits and Downtime	Utilize device features to restrict app usage

With the rise of remote work and increased digital connectivity, setting boundaries has become even more crucial. Strategies like not responding to emails or messages outside of work hours, turning off notifications, deleting distracting apps during work hours, leaving non-essential group chats, and assertively communicating your boundaries can help maintain a healthy work-life balance [32].

For families with children, the Family Digital Wellness Guide[33] recommends five key strategies:

1. **Get Involved**: Co-play and co-view digital media with your kids.
2. **Model Good Digital Habits**:Demonstrate responsible device usage.
3. **Use Creative Apps**:Encourage the use of educational and creative apps.
4. **Create Opportunities for Mindful Engagement**: Foster mindful use of screens.
5. **Make Time for Breaks and Offline Fun**: Prioritize tech-free activities.

Establishing digital boundaries is an ongoing process that requires self-awareness, discipline, and open communication. By implementing these strategies, individuals and families can cultivate a healthier relationship with technology and prioritize their mental well-being in the digital age [34].

6.1   Curating Online Environment

In the digital age, curating a positive and uplifting online environment is crucial for maintaining mental well-being. Here are some strategies to consider:
uplifting, gratitude-focused, or creative hashtags and accounts to stay inspired. Surrounding yourself with positive content can have a profound impact on your mindset and emotional state.Be selective about the information you consume and share, evaluating the source and credibility. Fact-checking and verifying information can help prevent the spread of misinformation and reduce anxiety or distress caused by false or harmful content. Conduct a privacy checkup on your social media platforms to control what information is being shared.. Maintaining privacy and setting boundaries can protect your personal data and prevent potential misuse or exploitation. Use social media to enhance existing relationships and forge new connections, rather than for escapism. Engaging with others in a meaningful way can foster a sense of community and belonging, while excessive use for escapism can lead to isolation and disconnection [35, 36].

Here are some additional tips for curating a positive online environment as explained in Table 4:

- Be selective about who and what you follow - unfollow or block accounts that leave you feeling less-than.

- Consider taking a break from social media entirely, even if just for a week, to see how you feel. This break can help you reset and reevaluate your relationship with digital platforms.

- When returning, consider starting over with a more selective curation of your feeds.

Table 4. Curation Strategies

Curation Strategy	Description
Positive Accounts	Follow accounts that inspire, educate, and promote well-being
Unfollow/Mute	Unfollow or mute content that triggers negative emotions
Mindful Engagement	Before commenting, ask yourself: 'Is it true?', 'Is it necessary?', 'Is it kind?'
Presence	Capture experiences, but don't forget to be present

Additionally, consider reaching out to friends and family to brighten their day, limiting the number of people you follow to those who make you feel good and will be there for you, and deleting social media apps from your phone to prioritize time with loved ones. Incorporating mindfulness practices like meditation, prayer, stretching, or positive affirmations into your morning routine can also help set a positive tone for the day.

7. Conclusion

The digital age has ushered in a profound transformation in mental health, presenting both challenges and opportunities. While technology offers unprecedented access to information, support, and innovative interventions, it also carries risks of cyberbullying, social comparison, burnout, and information overload. As we navigate this evolving landscape, it is essential to strike a balance by curating a positive online environment, setting healthy boundaries, and leveraging the power of digital tools to promote overall well-being. By embracing strategies such as mindful device usage, tech-free zones, and selective content consumption, we can harness the benefits of technology while mitigating its potential drawbacks. Additionally, fostering digital literacy, promoting empathy and respect online, and advocating for robust support systems and legislation will be essential in creating a safer and more inclusive digital space. Ultimately, a holistic approach that integrates technological advances with mindful practices and a deep understanding of their impact on mental health will pave the way for a future where

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