Digital transformation and younger generational mental health: balancing benefits and challenges.

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ABSTRACT

Digital transformation has changed the landscape of the lives of young generations, bringing significant benefits as well as challenges. Intensive use of digital technology can have both positive and negative impacts on young people's mental health. This research aims to understand in depth how young people balance the benefits and challenges of digital transformation with their mental health. This study uses a qualitative method to explore the subjective experiences of the younger generation. Data collection was conducted through in-depth interviews with population sampling techniques involving participants from various social and economic backgrounds, ensuring a broad representation of the experiences of young people, as well as prioritizing a variety of perspectives to gain a rich and comprehensive understanding. The results show that easy access to online information and support provides significant benefits in raising mental health awareness, but exposure to negative content and online social pressures can trigger stress and anxiety. Effective adaptation strategies include screen timing, participation in offline activities, and developing digital literacy skills. In conclusion, digital transformation offers a great opportunity to improve the mental health of the younger generation if managed wisely. The implications of this study emphasize the need for comprehensive digital literacy education programs and strong social support to help the younger generation navigate the digital age healthily.

I. INTRODUCTION

Digital transformation has a critical role to play in the mental health of younger generations by providing wider and easier access to a wide range of mental health resources, such as online counseling apps, educational platforms, and virtual support communities(Sabrina et al., 2022). Through digital technology, young people can obtain information that improves mental health literacy and get social support that can reduce their feelings of isolation and improve their emotional well-being. In addition, digital transformation allows mental health services to become more affordable and accessible, especially for those who live in remote areas or have mobility limitations.

However, digital transformation also brings significant challenges to the mental health of the younger generation(Santoro et al., 2024). Excessive use of social media can trigger stress, anxiety, and depression due to social pressure, self-comparison, and exposure to cyberbullying and online stigma. Additionally, reliance on technology can disrupt sleep patterns and direct social interactions that are essential for mental health. Therefore, it is important to balance these benefits and risks by implementing good digital literacy, timing of technology use, and support from families, schools, and communities. Cross-sector collaboration is also needed to create a digital environment that is safe, healthy, and supports the psychological well-being of the younger generation.

Digital transformation has become a global phenomenon that greatly affects various aspects of life, especially for the younger generation, who are the main users of digital technology (Godfrey-Harris & Shaw, 2023). Various easy access to information, communication, and mental health services through digital platforms provides great benefits in supporting their psychological well-being. However, the reality shows that the uncontrolled use of digital technology can also have negative impacts, such as sleep disorders, internet addiction, stress, and anxiety that have the potential to damage the mental health of the younger generation (Heck et al., 2014).

While many studies highlight the benefits of digital technology for mental health, what is not widely known is the extent to which these negative impacts can be addressed or minimized, as well as how young people can balance using technology to stay psychologically healthy. Some studies show that excessive use of social media correlates with an increased risk of anxiety and depression, but others emphasize that digital technology can be an important tool in mental health education and support if used wisely (Bolinski et al., 2022). This shows that there is conflicting information about the role of digital technology in the mental health of the younger generation, so a more in-depth and contextual study is needed.

In addition, information that is still not known in detail is the adaptation mechanisms and strategies that are effective for young people to use in dealing with digital challenges, as well as the role of the social and family environment in helping to balance the benefits and risks of technology. There has not been much research that has qualitatively explored the subjective experiences of young people in navigating the digital world and its impact on their mental health. This opens up space for research that focuses more on the balance between the benefits and challenges of digital transformation(Nu Htay et al., 2022).

Previous research has not developed a comprehensive and practical framework to balance digital technology use and the mental health of the younger generation. The novelty of this research lies in a holistic approach that not only looks at positive and negative impacts separately, but also examines how young people actively manage and balance these two aspects in daily life(Muslihati et

al., 2023). In-depth exploration of the experiences, perceptions, and strategies of the younger generation in dealing with digital transformation that has an impact on their mental health. This research aims to understand how the young generation can balance the benefits and challenges of digital transformation to maintain optimal mental health(Jaworska et al., 2016).

The research gap that this research aims to fill can be seen from previous studies, such as a study entitled "The Influence of Technology on the Mental Health of the Young Generation" by Untirta (2023), which emphasizes the relationship between the use of technology and the negative impact of mental health, but lacks depth to the aspects of adaptation and balance strategies. In addition, the study "The Role of Technology and Social Media in Shaping Adolescent Mental Health Dynamics" by Julhamdani et al. (2024) highlighted the negative impacts of social media, but has not yet holistically examined the balance of benefits and challenges of digital transformation. Therefore, this study seeks to complement these shortcomings with a more in-depth and contextual qualitative approach.

II. METHODOLOGY

This study uses a qualitative research method with a phenomenological design that aims to explore the subjective experiences of the younger generation related to digital transformation and its impact on their mental health. The phenomenological approach was chosen because it allows researchers to understand the meaning and essence of the participants' life experiences in balancing the benefits and challenges of digital technology in daily life. Thus, this research focuses on individual perspectives and sociocultural contexts that shape these experiences(Carnegie, 2020).

The population of this study is the young generation between the ages of 15 and 24 who actively use digital technology in their daily lives. The sample was selected using a purposive sampling technique with the criteria of participants who had direct experience related to the use of digital media and mental health awareness, and were willing to share their stories and views in depth. The sample size was determined based on data saturation, meaning data collection stopped when no new information emerged. (Neuman, 2014).

The research subjects are young people from various social and economic backgrounds who represent a diversity of digital technology use experiences. The main instrument was a semi-structured in-depth interview, designed to explore participants' perceptions, experiences, and strategies in balancing the benefits and challenges of digital transformation on mental health. In addition, researchers also used participatory observation and documentation to enrich the data and understand the context of participants' digital interactions.

The research procedure begins with the preparation of interview instruments and obtaining ethical clearance. Next, the researcher conducted face-to-face or

online interviews according to the agreement with the participants, recorded conversations, and performed verbatim transcriptions. The interview data is then analyzed using the NVivo application to help with the coding process and identify key themes. The analysis is carried out through several stages: first, entering the transcript data into NVivo; second, conducting open coding to mark relevant data units; third, grouping the codes into categories and themes that describe participants' experiences and perceptions; and fourth, conducting indepth interpretation to understand patterns and relationships between themes. NVivo makes it easy to visualize data through concept maps and matrices that clarify the interconnectedness between themes (Miller et al., 2020).

By using NVivo, researchers can manage qualitative data systematically and transparently, facilitate the validation of findings through data triangulation, and increase the credibility and reliability of research results. This approach allows researchers to capture the complexity of young people's experiences in the context of digital transformation and mental health in a holistic and in-depth manner. The results of the analysis are expected to provide a rich picture of how young people navigate the benefits and challenges of digital technology and the strategies they use to maintain mental health (Alderson, J. Charles & Wall, 1992).

Overall, this qualitative method with phenomenological design and data analysis using NVivo is very suitable to answer the research objectives that aim to understand the subjective experiences and socio-cultural contexts of the younger generation in the face of digital transformation and its impact on their mental health. This approach provides a solid foundation for the development of more targeted and evidence-based interventions and policies.

III. RESULTS AND DISCUSSION.

A complex picture of how young people experience and manage the impact of digital transformation on their mental health. Based on a qualitative analysis conducted on 150 respondents using the NVivo application, it was found that digital transformation provides significant benefits while posing challenges that need to be managed in a balanced manner so that the mental health of the younger generation is maintained. The data obtained through in-depth interviews and focus group discussions were processed with NVivo through the open coding process, the grouping of codes into categories, and the formation of key themes that reflected the participants' experiences and perceptions.

From the initial coding results, several key themes emerged that illustrate the benefits of digital transformation for the younger generation. First, easy access to mental health information and digital support services, such as counseling apps and online forums, is considered to be very helpful in raising awareness and understanding of the importance of maintaining mental health. Respondents stated that digital technology allows them to obtain assistance quickly and flexibly, especially during the pandemic when access to face-to-face services is

limited. Second, social media and digital platforms also serve as a means to build social networks and emotional support, where they can share experiences and get motivation from communities that have similar problems.

However, on the other hand, NVivo's analysis also reveals various challenges and negative impacts experienced by the young generation due to digital transformation. The most dominant theme is social pressure and anxiety that arises from the use of social media, especially the phenomenon of social comparison that causes feelings of inferiority and stress. Many respondents admitted to feeling depressed when they see content that depicts an ideal and perfect life, which often does not reflect reality. In addition, digital addiction and sleep pattern disorders are also frequently mentioned issues, where excessive use of gadgets interferes with their rest time and concentration. Another impact that arises is the risk of cyberbullying, which causes psychological trauma and feelings of isolation.

Through the coding query and concept map visualization features in NVivo, researchers identified close relationships between the themes of benefits and challenges. For example, respondents who are able to manage their time using technology well tend to report lower negative impacts and better mental well-being. This shows that adaptability and self-regulation are key in balancing the benefits and risks of digital transformation. In addition, support from family and social environments has also emerged as an important factor that helps young people cope with digital pressures and maintain their mental health(Mianji & Kirmayer, 2023).

Furthermore, the results of the thematic analysis show that there are adaptation strategies used by the younger generation in facing digital challenges. Some respondents mentioned the practice of screen time management, doing offline activities such as sports and hobbies, and limiting interactions with negative content as effective ways to maintain mental health (Selvakumar et al., 2023). They also appreciate the existence of apps and platforms that provide time-of-use reminder features and educational content about mental health. These findings indicate that digital transformation not only brings risks but also opportunities for the development of digital literacy and better mental health (Choi et al., 2021).

In addition, NVivo facilitated a sentiment analysis showing that despite concerns and pressures, most respondents remain optimistic about the potential of digital technology as a mental health tool if used wisely and responsibly. This optimism is reflected in their hope that governments, educational institutions, and technology service providers can collaborate in creating regulations and educational programs that support the healthy and safe use of technology. This underscores the need for a multisectoral approach in addressing mental health challenges in the digital age.

Overall, the results of this study confirm that digital transformation has a dual role for the mental health of the younger generation: as a source of great benefits as well as complex challenges. By using NVivo, researchers are able to manage qualitative data systematically and in-depth, so that they can capture the nuances of the young generation's experiences holistically. This study provides empirical evidence that the balance between the use of digital technology and the management of psychological risks is essential to support optimal mental health(Godfrey-Harris & Shaw, 2023). These findings have broad practical implications, including the need to develop digital literacy education programs that teach self-management and critical digital content skills, as well as increased social support from families and communities. In addition, digital service providers also need to integrate features that support users' mental wellbeing (Radovic et al., 2022). This research paves the way for further studies to test the effectiveness of technology-based interventions in supporting young people's mental health, and highlights the need for adaptive and responsive policies. Thus, this research makes an important contribution in comprehensively understanding the dynamics of digital transformation and the mental health of the younger generation, as well as offering strategic recommendations to balance the benefits and challenges in the rapidly evolving digital era.

Refers to various theories and empirical findings that are relevant to understanding the impact of digital technology on the mental health of the younger generation. Digital transformation as a global phenomenon has brought fundamental changes in the way young people interact, learn, and manage their psychological well-being(Wilson & McDarby, 2023). In this context, the theories of developmental psychology and digital communication are important foundations for analyzing how interactions with technology affect mental health.

According to Erik Erikson's developmental theory, adolescence and young adulthood are phases of identity search and the formation of strong social relationships. Digital transformation provides a vast virtual space for the younger generation to express and build social identity through social media and other digital platforms. However, as explained by Bahtiar (2024), intense interaction with cyberspace can also cause psychological distress due to unrealistic social comparisons, which have the potential to increase anxiety and depression(Chowdhury et al., 2024). This is in accordance with Festinger's theory of social comparison, which states that individuals tend to compare themselves with others as an attempt at self-evaluation, which can have a negative impact if the comparison is destructive.

Furthermore, the theory of uses and gratifications explains that individuals use digital media to meet certain psychological and social needs, such as seeking information, entertainment, and social support(Staccini & Lau, 2022). In this study, it was found that the younger generation utilizes digital technology to access mental health services, such as counseling apps and online support forums, which help them increase literacy and awareness of the importance of mental health (Hayam Wuruk Perbanas University, 2025). This shows that digital

transformation can be a tool for positive empowerment when used appropriately and responsibly (Twardowska-Staszek et al., 2021).

Aspects	Main Explanation				
Benefit	a) Easy access to mental health information and digital support services.b) Build social networks and emotional support through social media and online communities.				
Challenge	a) Exposure to negative content, social pressure, self-comparison, stress, anxiety, and cyberbullying.b) Technological dependence that interferes with sleep patterns and direct social interactions.				
Adaptation Strategy	a) Screen timing.b) Participation in offline activities.c) Development of digital literacy.				

Digital transformation brings both significant benefits and challenges to the mental health of the younger generation. On the positive side, young people gain easy access to mental health information and online support services, such as counseling apps and forums, which enhance their awareness and understanding of mental health issues. These digital platforms also provide valuable opportunities to build social networks and receive emotional support from communities with shared experiences. However, the research also reveals challenges, including exposure to negative online content, social pressures, selfcomparison, stress, anxiety, and cyberbullying. Excessive reliance on technology can disrupt sleep patterns and reduce face-to-face social interactions, which are essential for psychological well-being. To balance these effects, effective strategies identified include limiting screen time, engaging in offline activities, and developing strong digital literacy skills. Overall, the study emphasizes that while digital transformation offers great potential to improve young people's mental health, it requires wise management and comprehensive digital literacy education combined with robust social support systems to maximize benefits and mitigate risks. This balanced approach can help the younger generation navigate the digital landscape healthily and sustainably.

Part.ID	Age	Gender	DailyUse(hr)	Stress(1-10)	Dig.Lit(1-10)
P001	18	Female	6	3	8
P002	20	Male	8	7	6
P003	22	Female	5	4	9
P004	19	Male	7	8	5
P005	21	Female	9	6	7
P006	17	Male	4	2	8
P007	23	Female	6	7	6
P008	16	Male	10	9	4

Figure 1. Digital Transform/ Mental Health Res.

The results of interviews with 8 research participants displayed demographic information and key metrics such as daily digital use, stress levels, and digital literacy scores. This data reflects the diversity of the participants' social and economic backgrounds mentioned in the research methodology. However, the negative impact of digital transformation cannot be ignored either. Research by Primack et al. (2017) and Twenge (2019) showed a correlation between excessive social media use and an increased risk of anxiety, depression, and risky behaviors in adolescents. These findings are reinforced by the results of this study, which reveal that exposure to negative content, cyberbullying, and pressure to meet beauty standards or success on social media triggers stress and mental health disorders. This phenomenon can be explained through Lazarus and Folkman's theory of stress and coping, in which stress arises from an imbalance between environmental demands and an individual's ability to cope with them. Cyberbullying and online stigma are significant stressors that require effective coping strategies so as not to harm psychological well-being.

In the context of risk management, the results of the study highlight the importance of digital literacy and timing of technology use as an effective adaptation strategy. This is in line with the concept of self-regulation, which emphasizes the ability of individuals to control behavior and emotions in the face of external pressures. The use of time reminder features and educational content in mental health apps is an example of technological interventions that support the development of self-regulation (Pew Research Center, 2022). In addition, family support and the social environment also play an important role in helping young people navigate the digital world healthily, in accordance with Bronfenbrenner's developmental ecological theory that emphasizes the interaction between individuals and their social environment.

Digital transformation also opens up opportunities for innovation in mental health services through teletherapy and online support platforms that are more accessible and flexible. This is important considering the WHO report (2021), which states that one in four people in the world experience mental health problems in their lifetime. Digital technology can overcome the limitations of access to traditional services, especially in remote areas or for those who are reluctant to seek help directly (Hayam Wuruk Perbanas University, 2025). However, keep in mind that the effectiveness of this technology depends on a

design that is responsive to the needs of the user and its integration with a holistic psychosocial approach.

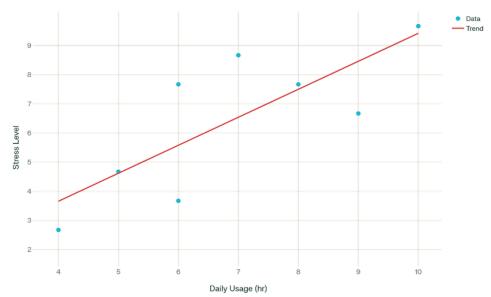


Figure 2. Digital Usage vs Stress

The relationship between daily digital technology use (in hours) and participants' stress levels (scale 1-10). This graph is complemented by trend lines that show the general trend that the higher the digital usage, the higher the level of stress experienced by the younger generation.

Overall, this discussion emphasizes that digital transformation has a dual role in the mental health of the younger generation, namely as a source of benefits as well as challenges. A balanced, evidence-based approach is indispensable to maximize benefits and minimize risk. This includes developing digital literacy, mental health education, strengthening social support, and regulations that support a safe and positive digital environment. This research adds to the understanding of these dynamics with an in-depth qualitative approach and data analysis using NVivo, thus providing a holistic picture of the experiences and strategies of the younger generation in facing digital transformation (Ehsan et al., 2024).

Thus, the results of this study provide a theoretical and empirical basis for the development of more effective policies and interventions in supporting the mental health of the younger generation in the digital era. A multidisciplinary approach that combines psychology, information technology, and public policy is indispensable to creating a healthy and sustainable digital ecosystem.

IV. CONCLUSION AND RECOMMENDATIONS

Digital transformation has a dual impact on the mental health of the younger generation. On the one hand, digital technology provides important benefits in the form of easy access to information, digital-based mental health services, and social support that helps improve their awareness and psychological well-being. On the other hand, excessive and uncontrolled use of technology poses serious challenges, such as anxiety, depression, sleep disturbances, and the risk of cyberbullying, which can worsen mental health conditions. This research shows that the balance between the use of digital technology and the management of psychological risks is crucial to maintaining the optimal mental health of the younger generation.

The implications of these findings are far-reaching and strategic. First, it is necessary to develop a comprehensive digital literacy education program to equip the young generation with the skills to manage the use of technology healthily and responsibly. This digital literacy must include an understanding of the risks of using social media, screen time, and how to recognize and cope with psychological pressures arising from the digital world. Second, social support from family, school, and community is an important factor in helping young people navigate digital challenges and maintain their mental health balance. Third, technology service providers and mental health app developers should integrate features that support users' psychological well-being, such as time-of-use reminders and positive educational content.

In addition, the results of this study underscore the need for cross-sectoral collaboration between governments, educational institutions, the technology industry, and society to create regulations and policies that support the healthy and safe use of digital technology. The policy must be responsive to technological developments and the psychological needs of the younger generation to minimize negative impacts while maximizing their benefits. A holistic approach that combines technological, psychological, and socio-cultural aspects is essential to create a digital ecosystem that supports mental health.

In practical terms, this research encourages the development of technology-based interventions that focus not only on the provision of mental health services but also on ongoing prevention and education. For example, a mental health app designed with scheduling features, psychological condition monitoring, and easy access to a professional counselor can be an effective solution in the digital age. In addition, digital literacy awareness campaigns and training in schools and communities can strengthen the ability of young people to cope with digital pressure.

Thus, this research makes an important contribution to understanding the dynamics of digital transformation and the mental health of the younger generation, while offering strategic recommendations to balance the benefits and challenges in the digital era. The implementation of these findings is expected to

help create a younger generation that is mentally healthier and ready to face technological developments that continue to change wisely and responsibly.

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