

A STUDY ON USER EXPERIENCE AND EFFECTIVENESS OF DIGITAL HEALTH TOOLS FOR MENTAL HEALTH IN MUMBAI METROPOLITAN REGION

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Abstract: This cross-sectional study investigates the user experience and efficacy of digital health tools for mental health, focusing on the influence of gender and age. With a sample size of 250 respondents, convenience sampling and Likert scales were employed to assess responses. The primary objectives were to evaluate the effectiveness of the tools, analyze the user experience, and identify barriers and facilitators across different genders and age groups.

The findings reveal notable gender-based differences, with females indicating higher perceived effectiveness. Additionally, age-related disparities were observed in the perceived effectiveness of digital health tools.

The study recommends incorporating personalization, user-friendly designs, and age-appropriate content to enhance these tools. Noteworthy limitations include potential sampling bias and reliance on self-reported data. Future research is advised to employ diverse sampling techniques, include objective measures, and explore longitudinal designs for a comprehensive understanding. The study's significance lies in providing insights for developers and policymakers to optimize digital health tools, accommodating diverse user needs and promoting favorable mental health outcomes.

Keywords: Digital Health Tools, Mental Health, User Experience, Effectiveness, MMR

JEL Classification: C83, I1, I10

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1. INTRODUCTION

The state of our mental health is an important factor in determining our overall well-being. It exerts an influence on our thoughts, feelings, and behaviors, and it has a significant bearing on how we deal with stress, how we connect with other people, and how we make decisions (About Mental Health, n.d.). When we talk about mental health, we are not just referring to the absence of mental illnesses. Individuals are considered to be in a state of mental health when they are aware of their capabilities, are able to properly manage the pressures that are often associated with life, can perform effectively and contribute to their community. The ability to effectively manage stress, maintain healthy interpersonal connections, make sound decisions, and improve overall well-being are all dependent on having strong mental health (Plumptre, 2023). According to Plumptre (2023), having a mental health condition that is not in good shape can lead to both mental and physical ailments, and it can also make it more difficult to find joy in life.

It is an enormous concern that over 200 million people in India are believed to be suffering from poor mental health. Regardless of how common mental health issues are, eight out of ten people do not seek treatment for them (Bhargava *et al.*, 2024). In order to include the general public in addressing these problems, professionals in India emphasise the importance of raising public knowledge regarding mental health (Srivastava *et al.*, 2016). According to India's National Policy on Mental Health (Duffy *et al.*, 2020), everyone in the country has the right to get mental healthcare.

When it comes to the management of mental health concerns, digital health solutions are becoming an increasingly important component. Although they come with a number of distinct challenges, they also come with a number of substantial opportunities (Smith *et al.*, 2023). When it comes to mental health care, the tools are revolutionizing the industry by providing individuals with ways that are both easily accessible and highly effective in managing their mental health. They have the potential to be especially beneficial in areas where there is a dearth of provision of mental health care services (Blumenfield, 2021). As a result of the COVID-19 pandemic, the necessity of employing digital health tools in mental health care has been brought to light, which has led to an increased reliance on virtual consultations (Blumenfield, 2021). It is necessary to undergo training and instruction for both patients and physicians in order to successfully

implement these strategies in clinical practice. Additionally, there is a need for organizational transformation. According to Smith *et al.* (2023), it is of the utmost importance to carry out appropriate research in order to assess the effectiveness of these technologies and to address certain ethical considerations that are associated with digital data.

According to Smith *et al.* (2023), digital health tools are becoming increasingly important in the field of mental health care. These tools offer possible solutions that can improve access to therapies as well as precision in the outcomes of those treatments. The goal of this research is to gain a more in-depth understanding of the user experience and the effectiveness of these tools in the treatment of mental health illnesses.

“Mental health is a state of mental well-being that enables individuals to cope with life stresses, realize their abilities, and learn effectively” – World Health Organization (Mental health. 2022)

“Mental health encompasses emotional, psychological, and social well-being, influencing thoughts, feelings, actions, and stress management” – Centers for Disease Control and Prevention (About Mental Health, n.d.)

Digital mental health tools include various technologies aimed at enhancing mental well-being, including self-help applications and platforms, virtual care platforms and therapy extensions offering services like chatbots, video content, written material, gamified activities, and cognitive exercises (Marsh & McLennan Companies, 2020).

1.1. Objectives of the Study

The following research objectives are developed to achieve and provide guidelines for conducting the study;

1. To evaluate the effectiveness of digital health tools in improving mental health outcomes
2. To understand the user experience of digital health tools for mental health
3. To identify the barriers and facilitators to the use of digital health tools for mental health

2. REVIEW OF LITERATURE

Mental health awareness is extremely important in India in order to combat stigma and ensure that treatment is provided in a timely manner (Srivastava

et al., 2016). Digital mental health solutions are becoming increasingly popular worldwide, particularly in India, where the use of smartphones and health apps is increasing (Sinha *et al.*, 2018). A number of programmes have been launched by the Government of India with the goal of enhancing accessibility, affordability, and engagement in mental health care (Mahapatra *et al.*, 2024). Indian nurses are utilising digital learning platforms to improve their abilities in community mental healthcare, demonstrating the effectiveness of digital tools in this area (Govindan *et al.*, 2024).

Digital health solutions, including mobile and connected technologies, contain the capacity to transform mental healthcare by enabling the accumulation of patient data in real time, enhancing the process of data management, and improving clinical administration (Roberts, 2018; Hollis, 2015). An assortment of technological progressions, including sensors for smartphones and peripheral devices, virtual reality, and video games, may be utilized to aid in the detection, prevention, promotion, and intervention of mental health problems (Balcombe, 2021). Evaluation of novel technologies requires a greater degree of participation from both patients and clinicians in order to guarantee that they address unmet needs and enhance clinical outcomes (Hollis, 2015). Additional investigation is required to evaluate the effectiveness and suitability of digital health interventions, specifically in relation to marginalized communities (Philippe, 2022).

Cognitive training, computerized therapy, synchronous and asynchronous communication, and computerized therapy are among the digital health approaches that have demonstrated potential in the treatment of mental health disorders (Philippe, 2022). The significant utility of the instruments has been demonstrated by the increased accessibility of mental health care in low-income and middle-income countries. Further research is required in order to thoroughly assess the effectiveness, analyze the costs, and examine the potential hazards that may be linked to these interventions (Naslund, 2017). Although empirical support exists for the efficacy of mobile mental health applications in the treatment of anxiety and depression, the dependability of online mental health programmes has been called into question (Marshall, 2019). Additional research is required to comprehensively understand the effectiveness and integration of digital health tools in clinical settings as a method to enhance mental health services (Mohr, 2017). Sasseville (2021) presented additional evidence that email

and web-based therapies are efficacious in treating mental health issues among patients who are chronically ailing. Ito-Jaeger (2021) underscored the favorable effects that digital video interventions have on elevating the mental health literacy of young individuals. Additional research is required in order to assess the costs, efficacy, and possible hazards associated with these instruments.

Numerous variables impact user engagement with digital mental health products. Lo (2022) emphasizes the significance of user engagement by identifying critical characteristics including content utility, privacy, and usability (Chan, 2021). The significance of personalization arises from the user preference for applications that are customized to suit their specific requirements (Chan, 2021). Participation is hindered by technological obstacles, significant mental health concerns, and a lack of customization. On the contrary, factors such as enhanced health understanding, increased social connectivity, and a perception of agency are conducive to increased engagement (Borghouts, 2021). The findings emphasize the criticality of digital mental health assistants that are individualized, intuitive, and foster social connection.

The key factors that impede or promote the utilization of digital health technologies in the domain of mental health have been identified by a multitude of studies. Borghouts (2021) posit that impediments to advancement encompass personalization, substantial mental health concerns, and technological complexities. Conversely, social connectedness, increased health consciousness, and a sense of control can facilitate progress. Carolan (2018) identifies time constraints as a substantial obstacle, notwithstanding the dual effectiveness of digital interventions' expediency, adaptability, and anonymity as facilitators and barriers. Berardi (2021) undertakes a comprehensive examination of these components within mental health systems, underscoring the necessity for a more holistic comprehension of the obstacles and enablers that impede and enable the integration of digital technologies at the organizational, individual, and systemic levels.

2.1. Hypothesis of the Study

The hypotheses formulated for the present study is as follows;

1. (H_0): There is no significant difference between male and female individuals in terms of the effectiveness of digital health tools for

improving mental health, user experience, barriers to use, and facilitators to use.

2. (H_0): There is no significant linear relationship between the effectiveness of digital health tools in improving mental health and the user experience of these tools.
3. (H_0): There is no significant difference in the perceived effectiveness of digital health tools for improving mental health, user experience, barriers to use, and facilitators to use across different age groups.

3. RESEARCH METHODOLOGY

Research methodology is the methodical and logical framework used to study and analyse data to answer research questions. According to Kothari (2004), research methodology is a method to analytically explain the research problem.

3.1. Data Collection

Collecting secondary data entailed reviewing publicly available sources such as scholarly papers and journals. The information was gathered from multiple sources such as the National Health Portal, World Health Organisation, reports, and journals that are publicly available. Primary Data collection involved the use of Likert scales to gauge respondents' perceptions of various aspects related to digital health tools. Likert scales were chosen for their ability to capture nuanced responses, providing a range of options for participants to express their opinions on the effectiveness, user experience, barriers, and facilitators of these tools.

3.2. Sample

The study utilised a sample size of 250 individuals to examine the efficacy and user experience of digital health aids in managing mental health disorders. The participants were chosen by convenience sampling, which involved selecting persons who were readily available and eager to take part in the study.

3.3. Variables

The study focused on several key variables, including:

- Effectiveness of digital health tools in improving mental health

- User experience of digital health tools for mental health
- Barriers to the use of digital health tools
- Facilitators to the use of digital health tools
- Gender
- Age

3.4. Data Analysis

Statistics were analysed in order to determine the correlations and variances that exist between the variables. For the purpose of analysing gender differences in the efficacy, user satisfaction, impediments, and enablers of digital health technology, independent samples t-tests were utilised. Welch's one-way analysis of variance was utilised in order to assess the age-related differences in these characteristics. In order to evaluate the relationship between the user experience and the perceived efficacy of digital health technologies, a linear regression analysis was carried out.

4. SIGNIFICANCE OF THE STUDY

This study has significance given that it has the potential to enhance our knowledge of how successful and user-friendly digital health technologies are in treating mental health issues. This study could offer useful insights to guide the development and utilization of digital health technologies, considering the rising occurrence of mental health problems. It could aid in recognizing obstacles and enablers to their use, which is essential for enhancing their acceptance and efficiency.

5. SCOPE OF THE STUDY

This study aims to assess the efficacy of digital health tools in enhancing mental health results, exploring user experiences with these tools, and recognizing the obstacles and enablers to their utilization. The study will conduct a cross-sectional analysis to offer a picture of these qualities at a particular moment in time.

6. RESULT AND FINDINGS

The results and findings involve the data analyzed to derive meaningful insights on variables like gender and age; effectiveness, user experience, barriers and facilitators to the use of digital health tools for mental health.

Table 1: Gender & Age

Gender	Counts	% of Total
Female	151	60.4 %
Male	99	39.6 %
Age	Counts	% of Total
Under 30	30	12.0 %
31-40	111	44.4 %
41-50	82	32.8 %
Above 50	27	10.8 %

Source: Primary data collected and interpreted by the researcher

The data reveals the demographic distribution of participants based on gender and age in the study. Notably, a significant proportion, constituting 60.4%, is represented by female participants, while males make up 39.6% of the total sample. In terms of age groups, the majority of participants fall within the 31-40 age range, accounting for 44.4% of the total. The age group of 41-50 follows closely, comprising 32.8% of the participants. Individuals under the age of 30 constitute 12.0% of the sample, and those above 50 make up 10.8%.

Table 2: Effectiveness of digital health tools in improving mental health

Effectiveness of digital health tools in improving mental health	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
Using this tool has effectively reduced my [specific mental health symptom].	3.6 %	3.2 %	10.0 %	42.0 %	41.2 %	4.14
I am experiencing significant improvement in my overall mental well-being since using this tool.	3.2 %	3.2 %	14.8 %	46.0 %	32.8 %	4.02
I am likely to recommend this tool to someone with similar mental health challenges.	4.4 %	3.6 %	14.4 %	36.4 %	41.2 %	4.06
Using this tool has brought me closer to achieving my mental health goals.	4.0 %	4.0 %	14.0 %	44.4 %	33.6 %	4
This tool has significantly improved my quality of life.	4.8 %	2.4 %	25.2 %	35.2 %	32.4 %	3.88

Source: Primary data collected and interpreted by the researcher

Table 2 presents the effectiveness of digital health tools in improving mental health, as perceived by participants based on specific statements. The

majority of respondents, ranging from 42.0% to 46.0%, agreed or strongly agreed that these tools effectively reduced specific mental health symptoms, contributed to significant improvement in overall mental well-being, and brought them closer to achieving their mental health goals. Additionally, a substantial percentage, varying from 36.4% to 41.2%, expressed the likelihood of recommending the tool to someone facing similar mental health challenges. The mean ratings for each statement, ranging from 3.88 to 4.14, further indicate a positive overall perception of the effectiveness of these digital health tools. In conclusion, the data suggests that participants generally find these tools beneficial in addressing mental health concerns, showcasing a favorable response across various aspects of mental well-being and quality of life.

Table 3: User experience of digital health tools for mental health

<i>User experience of digital health tools for mental health</i>	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>	<i>Mean</i>
Learning to use this tool was very easy for me.	3.2 %	4.4 %	21.6 %	41.2 %	29.6 %	3.9
The instructions for using this tool were clear and helpful.	4.0 %	4.0 %	11.2 %	37.6 %	43.2 %	4.12
This tool is accessible to me considering factors like affordability, internet access, and device compatibility.	4.0 %	2.8 %	13.2 %	37.6 %	42.4 %	4.12
The features of this tool cater well to my specific needs and preferences.	3.2 %	3.6 %	15.2 %	40.8 %	37.2 %	4.05
I am overall satisfied with my experience using this tool.	4.8 %	3.6 %	12.0 %	46.4 %	33.2 %	4
I would definitely recommend this tool to others looking for digital mental health support.	1.6 %	6.0 %	16.0 %	37.2 %	39.2 %	4.06
This tool was very useful in managing my mental health symptoms.	2.4 %	4.8 %	12.8 %	38.0 %	42.0 %	4.12
This tool helped me develop new coping mechanisms or strategies for managing my mental health to a great extent	1.6 %	4.8 %	14.0 %	34.8 %	44.8 %	4.16

Source: Primary data collected and interpreted by the researcher

Table 3 provides insights into the user experience of digital health tools for mental health, reflecting participants’ perceptions across various dimensions. A significant portion, ranging from 37.2% to 46.4%, expressed agreement or strong agreement with statements indicating satisfaction with the learning process, clarity of instructions, and overall accessibility of the tools, considering factors like affordability, internet access, and device compatibility. Moreover, participants found the features of the tools well-suited to their specific needs and preferences, with agreement levels ranging from 37.2% to 40.8%. The mean ratings, ranging from 3.9 to 4.16, indicate a generally positive user experience. In conclusion, the data suggests that participants had favorable experiences using these digital health tools for mental health, with high satisfaction levels and a perception that the tools were useful in managing mental health symptoms and fostering the development of coping mechanisms.

Table 4: Barriers to the use of digital health tools for mental health

<i>Barriers to the use of digital health tools for mental health</i>	<i>No</i>	<i>Yes</i>	<i>Mean</i>
Difficulty navigating the interface	14.8 %	85.2 %	1.85
Technical problems or glitches	32.0 %	68.0 %	1.68
Lack of clarity in instructions or features	66.8 %	33.2 %	1.33
Features not well-suited to my needs	24.8 %	75.2 %	1.75
Cost/subscription fee	64.0 %	36.0 %	1.36
Lack of internet access or compatible device	60.0 %	40.0 %	1.4
Other	62.8 %	37.2 %	1.37

Source: Primary data collected and interpreted by the researcher

Table 4 outlines the perceived barriers to the use of digital health tools for mental health, shedding light on the challenges reported by participants. A notable majority, ranging from 60.0% to 85.2%, identified barriers such as difficulty navigating the interface, technical problems or glitches, features not well-suited to their needs, and the lack of internet access or a compatible device. Additionally, a significant percentage expressed concerns related to the cost or subscription fees (64.0%) and lack of clarity in instructions or features (66.8%). The mean ratings, ranging from 1.33 to 1.85, indicate that participants perceive these barriers to varying degrees, with difficulty navigating the interface being the most prominently reported obstacle. In conclusion, the data underscores key challenges faced by users, including technical issues, financial considerations, and concerns related to interface

usability. Addressing these barriers could enhance the overall effectiveness and user experience of digital health tools for mental health.

Table 5: Facilitators to the use of digital health tools for mental health

<i>Facilitators to the use of digital health tools for mental health</i>	<i>No</i>	<i>Yes</i>	<i>Mean</i>
Easy-to-use interface	39.6 %	60.4 %	1.6
Informative and engaging content	33.2 %	66.8 %	1.67
Personalized features and recommendations	28.8 %	71.2 %	1.71
Tracking and monitoring capabilities	40.8 %	59.2 %	1.59
Supportive community or messaging features	56.0 %	44.0 %	1.44
Reminder and scheduling tools	64.4 %	35.6 %	1.36
Other	83.6 %	16.4 %	1.16

Source: Primary data collected and interpreted by the researcher

Table 5 provides insights into the facilitators that contribute to the use of digital health tools for mental health, outlining factors that enhance user engagement. A substantial percentage of participants, ranging from 60.4% to 83.6%, identified facilitators such as an easy-to-use interface, informative and engaging content, personalized features and recommendations, and tracking and monitoring capabilities. The mean ratings, ranging from 1.16 to 1.71, suggest that users perceive these facilitators positively, with an easy-to-use interface being the most prominently endorsed factor. On the other hand, features like supportive community or messaging features and reminder and scheduling tools received lower mean ratings but still had a significant percentage of users endorsing them. In conclusion, the data indicates that users value digital health tools that offer user-friendly interfaces, personalized features, and informative content. Incorporating these facilitators into the design and functionalities of such tools could potentially enhance user satisfaction and engagement, thereby optimizing the effectiveness of digital health tools for mental health.

6.1. Testing of Hypothesis

In the present study, the following hypotheses were tested and the interpretations were drawn;

1. **(H₀): There is no significant difference between male and female individuals in terms of the effectiveness of digital health tools for improving mental health, user experience, barriers to use, and facilitators to use.**

Interpretation: The independent samples t-tests were undertaken to investigate gender disparities in utilising digital health aids for mental health. The four main topics being examined were the efficacy of these tools, user satisfaction, obstacles to usage, and factors that promote usage.

The t-test showed a statistically significant result ($t = 2.19$, $df = 248$, $p = 0.03$) indicating a difference in how males and females perceive the efficiency of digital health tools in promoting mental health. The t-test results revealed a significant difference ($t = 2.21$, $df = 248$, $p = 0.028$) in user experience based on gender, suggesting that gender influences users’ experiences with mental health digital tools.

The tests for barriers to use ($t = -1.29$, $df = 248$, $p = 0.198$) and facilitators to use ($t = -1.06$, $df = 248$, $p = 0.289$) did not show statistical significance. This indicates that there might not be a significant gender difference in the perceived barriers and facilitators to using digital health tools for mental health.

Based on statistical analyses, there is evidence supporting the premise that gender inequalities exist in the effectiveness and user experience of digital health tools for mental health. No major gender disparities were identified regarding perceived obstacles and aids in utilizing these technologies.

Table 6: Independent Samples T-Test

		<i>Statistic</i>	<i>df</i>	<i>P value</i>
Effectiveness of digital health tools in improving mental health	Student's t	2.19	248	0.03
User experience of digital health tools for mental health	Student's t	2.21	248	0.028
Barrier to the use of digital health tools	Student's t	-1.29	248	0.198
Facilitators to the use of digital health tools	Student's t	-1.06	248	0.289

Source: Primary data collected and interpreted by the researcher

2. **(H₀): There is no significant difference in the perceived effectiveness of digital health tools for improving mental health, user experience, barriers to use, and facilitators to use across different age groups.**

Interpretation: The One-Way ANOVA (Welch’s) analyses were undertaken to investigate age-related differences in factors connected to the use of digital health tools for mental health. The four main topics being examined were the efficacy of these tools, user satisfaction, obstacles to usage, and factors that promote usage.

The ANOVA analysis showed a statistically significant result ($F = 3.054$, $df_1 = 3$, $df_2 = 71.5$, $p = 0.034$), demonstrating significant variations in perceived effectiveness of digital health tools among various age groups. Post-hoc tests are required to determine the exact age groups that exhibit differences from one another.

The ANOVA analysis showed that there were no statistically significant age-related changes in the user experience of digital health tools for mental health ($F = 1.712$, $df_1 = 3$, $df_2 = 70.8$, $p = 0.172$).

The ANOVA analysis showed that there was no statistically significant variation in perceived barriers to the use of digital health technologies among different age groups ($F = 1.833$, $df_1 = 3$, $df_2 = 78$, $p = 0.148$).

The examination of factors influencing the usage of digital health tools did not produce a statistically significant outcome ($F = 0.751$, $df_1 = 3$, $df_2 = 76.4$, $p = 0.525$), indicating no substantial age-related variances in the perceived factors that aid in the use of these resources.

The ANOVA analyses show that there are age-related disparities in how useful digital health aids for mental health are viewed. No major variations were observed in user experience, obstacles to use, and factors that aid use among different age categories.

Table 7: One-Way ANOVA (Welch's)

	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>p</i>
Effectiveness of digital health tools in improving mental health	3.054	3	71.5	0.034
User experience of digital health tools for mental health	1.712	3	70.8	0.172
Barrier to the use of digital health tools	1.833	3	78	0.148
Facilitators to the use of digital health tools	0.751	3	76.4	0.525

Source: Primary data collected and interpreted by the researcher

3. (H_0): There is no significant linear relationship between the effectiveness of digital health tools in improving mental health and the user experience of these tools.

Interpretation: A linear regression analysis was performed to investigate the correlation between the efficacy of digital health tools in enhancing mental health and the user experience of these tools for mental health. The model demonstrates statistical significance with an F-value of 443 and degrees of freedom of 1 and 248, indicating a very significant relationship. The R^2 value of 0.641 suggests that around 64.1% of the variability in user experience may be attributed to the effectiveness of digital health technologies.

The omnibus ANOVA test confirms the model’s significance ($p < 0.001$), showing a significant difference in mean squares between the effectiveness of digital health tools and the residuals.

The model coefficients offer insights into the correlation between the variables. The intercept is 7.95 with a standard error of 1.1949 and a p-value less than 0.001, suggesting the anticipated user experience in the scenario when the efficacy of digital health technologies is negligible. The coefficient indicating the efficacy of digital health technologies is 1.22 ($SE = 0.0581$, $p < 0.001$), indicating a favourable correlation. An increase of one unit in the perceived effectiveness of digital health tools in improving mental health is projected to result in a 1.22 unit increase in user experience.

The linear regression analysis indicates a robust and statistically significant positive correlation between the perceived effectiveness of digital health tools in enhancing mental health and the user experience of these products. Individuals who believe that digital health tools are beneficial in improving mental health are more likely to have a favourable user experience with these technologies.

Table 8: Model Fit Measures

			Overall Model Test			
Model	R	R ²	F	df1	df2	p
1	0.801	0.641	443	1	248	<.001

Table 9: Omnibus ANOVA Test

	Sum of Squares	df	Mean Square	F	p
Effectiveness of digital health tools in improving mental health	7022	1	7022.5	443	<.001
Residuals	3932	248	15.9		
Note. Type 3 sum of squares					

Table 10: Model Coefficients - User experience of digital health tools for mental health

			95% Confidence Interval			
Predictor	Estimate	SE	Lower	Upper	t	p
Intercept	7.95	1.1949	5.59	10.3	6.65	<.001
Effectiveness of digital health tools in improving mental health	1.22	0.0581	1.11	1.34	21.05	<.001

Source: Primary data collected and interpreted by the researcher

7. DISCUSSION

This study provides vital insights into the efficacy and user experience of digital health solutions for addressing mental health disorders. The convenience sample method was used to gather data from 250 individuals who are users of different digital products aimed at promoting mental well-being.

The study's results show a favourable impression of the efficacy of digital health technologies in enhancing mental health outcomes. Participants saw a notable decrease in particular mental health symptoms, enhancement in general well-being, and advancement towards mental health objectives. It is consistent with previous research that emphasizes the advantages of using digital therapies in mental health.

Furthermore, the user experience with these products was mostly positive. Participants regarded the tools user-friendly, with explicit instructions and customizable features. Digital therapies show promise as effective and user-friendly resources for controlling mental health symptoms, based on high satisfaction levels and pleasant experiences reported by users.

Gender disparities were noted in the efficacy and user satisfaction of digital health technologies. Female participants showed a more positive view of effectiveness and a more favorable user experience than male participants. This difference highlights the significance of taking into account gender-specific preferences and customizing digital interventions accordingly.

Age-Related Variances: Variations related to age were apparent in how digital health tools for mental health were viewed in terms of effectiveness. Effectiveness varied among age groups, but no significant variations were detected in user experience, barriers to use, or facilitators to use. These instruments' benefits are consistently observed across various age groups.

8. CONCLUSION

This study illuminates the efficacy and user experience of digital health solutions for mental health. Participants expressed favorable results, highlighting the capacity of these tools to enhance mental well-being. Gender and age disparities highlight the necessity for customized interventions to optimize effectiveness. The implications and recommendations offer practical insights for developers and stakeholders to improve the design and implementation of digital health products. This study establishes a

foundation for future research to enhance digital interventions and enhance mental health assistance in various populations, despite some restrictions.

9. IMPLICATIONS AND RECOMMENDATIONS

The study underscores the importance of personalized approaches in developing digital health tools. Developers are encouraged to tailor interventions to align with gender-specific preferences and the distinct needs of various age groups. Prioritizing user-friendly designs, including clear instructions and interfaces, is crucial for enhancing overall user experience. Marketing strategies should consider gender-specific approaches to better resonate with male and female users. Additionally, creating age-appropriate content can optimize the effectiveness of digital health tools by addressing the unique challenges faced by different age brackets.

10. LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

Several limitations warrant consideration. The use of convenience sampling introduces potential bias, limiting the generalizability of findings. Future research should explore more diverse sampling strategies for broader representation. Reliance on self-reported data may introduce biases, and incorporating objective measures, such as usage data, can offer a more comprehensive understanding of tool effectiveness. Longitudinal studies are recommended to assess the sustainability of effectiveness and user satisfaction over time. Further in-depth gender analysis, employing qualitative methods, can uncover nuanced preferences and experiences, informing targeted improvements for a more tailored user experience.

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