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THE RELATIONSHIP BETWEEN E-HEALTH LITERACY AND PSYCHOLOGICAL WELL-BEING: A COMPARATIVE STUDY AMONG YOUTH AND ADULTS IN SHIRAZ, IRAN

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Abstract: One of the key factors in societal progress is the improvement and enhancement of individuals' psychological well-being. With increased psychological well-being, individuals gain the ability to solve problems and successfully overcome challenges. The aim of this study is to investigate the relationship between e-health literacy and psychological well-being among youth and adults in Shiraz, based on Neuman's Health Theory. This study employed a survey method, and the statistical population included all young and adult residents of Shiraz, Iran. Based on Cochran's formula, 600 individuals were selected through stratified random sampling. Data collection tools included questionnaires, and SPSS software was used for statistical analysis. The results indicated a significant relationship between e-health literacy and psychological well-being among both youth and adults in Shiraz. Additionally, multivariate regression analysis showed that the psychological well-being of youth and adults in Shiraz was similar, with no significant differences between the two groups. Based on the findings of this study and Neuman's Health Theory, the higher the level of e-health literacy in a society, the greater the psychological well-being of its individuals. Consequently, society and its members will experience less anxiety, stress, and preoccupation. Therefore, to enhance psychological well-being as a crucial dimension of health and a factor in societal progress, it is recommended to increase the use and improvement of e-health literacy with the help of community members and officials.

Keywords: *Psychological well-being, e-health literacy, youth-adults*.

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Introduction

Approximately 14% of global diseases are attributed to neurological and psychiatric disorders related to psychological well-being. These disorders are primarily due to debilitating psychological conditions that lead to other mental health issues. Studies on individual health emphasize the separate roles of mental and physical health in disability and mortality, which often results in neglect and alienation from psychological well-being. The burden of mental disorders is underestimated due to inadequate understanding, leading to severe health conditions (Prince et al., 2007). Psychological issues are prevalent in contemporary society, and individuals face various concerns. The best way to address emotional and psychological problems is timely treatment and prevention of their spread. Psychosocial well-being is defined as a state of mental, social, and emotional health for individuals. This broad concept encompasses various aspects of human life, including self-esteem, life satisfaction, a sense of purpose, happiness, and personal growth (Liu, 2024). Individuals with poorer psychological well-being tend to perform worse under stress and experience higher levels of stress. The higher the level of an individual's psychological well-being, the better their ability to cope with depressive factors and stressful conditions (Aldwin & Revenson, 1987).

Psychological well-being is becoming a central topic in public policy discussions, with its improvement and welfare being considered a fundamental principle in society. Psychological well-being and health are closely interrelated, and this relationship intensifies with age. Psychological well-being is influenced by various factors, including material conditions, social roles and activities, and social and family relationships (Steptoe et al., 2014). One of the significant factors influencing psychological well-being is the level of e-health literacy. Health literacy plays a crucial role in empowering individuals to use health information, understand, and access resources for making informed decisions about their health. Health literacy is particularly important in developing countries with lower health standards. E-health literacy fosters community participation and efforts to improve and enhance psychological well-being (Al-Worafi, 2023).

The term "e-health literacy" was rarely used before 1999 but has since become common to describe the use of medical information through the internet, or in other words, internet-based medicine. E-health literacy can be defined as an emerging field at the intersection of medical services, public health, and information provided through the internet and related technologies. E-health literacy aims to reduce costs and improve the quality of individuals' health. By providing health information through the internet, e-health literacy empowers individuals in a society. However, it also highlights inequalities in societies, particularly in developing countries where the gap between the rich and the poor leads to disparities in internet access and health standards (Eysenbach, 2001). E-health literacy includes individuals' skills and abilities to access, validate, understand, apply, evaluate, and interpret online health-related information (Petrič & Atanasova, 2024).

The stressful lifestyles of modern societies have led to numerous psychological issues, exposing individuals to countless risks. Adolescents, youth, and adults are particularly vulnerable to the worst psychological impacts, such as depression. To address such issues, increasing access to e-health literacy can help individuals use

technology, the internet, and its services to tackle various health issues, including psychological well-being. Daily life is influenced by various factors, and advancements in technology can help improve healthcare and accelerate communication (Srivastava, 2017). Individuals generally express satisfaction with e-health literacy and turn to it for their problems. It appears that e-health literacy and its impact on psychological well-being among youth and adults is a significant factor that emphasizes its effectiveness and acceptance in health (Struthers et al., 2015).

Therefore, it can be said that in today's high-risk society, individuals' psychological well-being is influenced by various risks and factors, and one of the ways to treat and prevent these issues is through e-health literacy, which can help address this problem. Youth are typically exposed to technology and digital tools from a younger age, while adults may not have the same experience. Additionally, due to education and profession, youth tend to use digital technologies more, while adults may have less need for these technologies. Thus, e-health literacy plays a crucial role in improving individuals' conditions, and this study aims to investigate the relationship between e-health literacy and psychological well-being, as well as the differences between youth and adults in Shiraz. Therefore, the main research questions are: Is there a relationship between respondents' psychological well-being and their level of e-health literacy? Does the psychological well-being of respondents differ based on whether they are youth or adults?

Theoretical Framework

Psychological well-being is a critical determinant of individual health, influencing various dimensions of well-being and serving as a pivotal factor in navigating the stressors of contemporary society. This study draws on several theoretical models to contextualize the relationship between e-health literacy and psychological well-being.

Baker's Health Literacy Model

Health literacy, as conceptualized by Baker (2006), is a multifaceted construct that reflects an individual's capacity to meet the demands and expectations imposed by society and the healthcare system. It encompasses the ability to access, comprehend, and utilize health information to make informed decisions. Low health literacy exacerbates health disparities, impairing the use of preventive services, accurate disease diagnosis, understanding of medical conditions, adherence to treatment protocols, and self-management capabilities. Consequently, individuals with limited health literacy often experience poorer health outcomes and incur higher medical costs (Wolf et al., 2007). To address these challenges, comprehensive research is needed to bridge the gap between individuals' current capacities and the demands of the healthcare system, thereby facilitating the development of accessible health information and educational interventions for diverse populations.

Health Belief Model (HBM)

The Health Belief Model (HBM), first introduced in the 1950s, remains one of the most influential frameworks in health-related research. This model posits that health behaviors are driven by individuals' perceptions of susceptibility to illness, the severity

of health threats, the benefits of preventive actions, and the barriers to adopting such actions (Glanz et al., 2008). Central to the HBM is the notion that individuals are more likely to engage in health-promoting behaviors if they perceive a significant threat to their health and believe that specific actions can mitigate this threat. The model also emphasizes the role of subjective beliefs, expectations, and social contexts in shaping health behaviors. Over time, the HBM has evolved to incorporate interventions that enhance risk perception and encourage proactive health management, making it a valuable tool for addressing contemporary health challenges (Gryboski et al., 2020).

Neuman's Health Theory

This study adopts Neuman's Health Theory as its primary theoretical framework. Neuman's model emphasizes health promotion, maintenance, and the management of stressors as key determinants of well-being (Jukes & Spencer, 2016). According to Neuman, individuals are constantly exposed to environmental stressors that challenge their physiological, psychological, socio-cultural, spiritual, and developmental stability. The model posits that individuals possess flexible lines of defense that help them adapt to stressors, with greater flexibility enhancing resilience and coping capacity. Anxiety, however, is identified as a debilitating factor that undermines individuals' ability to manage stress, thereby impeding recovery and overall health. Interventions based on Neuman's model aim to reduce stress and strengthen individuals' lines of defense, fostering a state of equilibrium and well-being (Hffline, 1990).

Neuman's theory is grounded in the assumption that humans are holistic beings influenced by five interrelated variables: physiological, psychological, socio-cultural, spiritual, and developmental. The physiological variable pertains to the body's structure and function, while the psychological variable focuses on mental processes and their interaction with the environment. The socio-cultural variable examines the impact of social and cultural contexts, and the spiritual variable considers the role of beliefs and values. Finally, the developmental variable addresses age-related processes and activities (Ahmadi & Sadeghi, 2017). This holistic perspective makes Neuman's model particularly suited for examining psychological well-being, as it accounts for the complex interplay of individual and environmental factors.

Literature Review

Recent studies have explored the intersection of e-health literacy and psychological well-being, highlighting the transformative potential of digital health technologies in mental health care. Below, we review key studies that inform the theoretical and empirical foundations of this research.

E-Health Literacy and Mental Health

Zhang et al. (2024) investigated the mediating role of e-health literacy in the relationship between health self-management and mental health among undergraduate nursing students in China. Using a sample of 385 students, the study employed health literacy and mental health questionnaires to assess the variables. The findings revealed a significant positive correlation between e-health literacy and mental health,

underscoring the importance of digital health competencies in promoting psychological well-being.

Digital Mental Health Interventions

Seiferth et al. (2023) developed a guideline for researchers and practitioners on the use of digital technologies in mental health care. Their study employed the Delphi method to evaluate the methodological quality and implementation of e-mental health interventions. The authors identified three key objectives: intervention evaluation, development, and the characterization of study designs. The study concluded that e-health technologies hold significant promise for enhancing mental health outcomes, provided they are implemented with rigorous methodological standards.

E-Health Interventions for Healthcare Workers

Dominguez-Rodriguez et al. (2022) examined the feasibility and effectiveness of e-health psychological interventions for healthcare workers during the COVID-19 pandemic. The study involved 49 participants and focused on reducing anxiety and depression while improving quality of life and self-care practices. The results demonstrated that e-health interventions had a positive impact on psychological well-being, highlighting their potential for addressing mental health challenges in high-stress environments.

Cost-Effectiveness of E-Health Interventions

Massoudi et al. (2019) conducted a systematic review and meta-analysis to evaluate the effectiveness and cost-effectiveness of e-health interventions for depression and anxiety in primary care settings. The review included 14 studies out of 3,617 publications and found that e-health interventions had a modest but significant impact on mental health outcomes. The study emphasized the need for further research to optimize the cost-effectiveness of these interventions.

E-Health Models for Adolescents

Srivastava et al. (2017) proposed an e-health model, "Yuva," designed to address the psychological challenges faced by adolescents aged 10 to 19. The study highlighted the role of digital technologies in enhancing the flexibility and accessibility of mental health services. By integrating e-health solutions with professional expertise, the authors argued that it is possible to address the unique psychological needs of adolescents more effectively.

Gaps in the Literature

While existing studies have predominantly examined mental health and e-health literacy from medical and psychological perspectives, this study distinguishes itself by adopting a sociological lens. By focusing on demographic characteristics and conducting a comparative analysis of youth and adults, this research addresses a critical gap in the literature. The emphasis on social context and population-specific factors enhances the relevance and applicability of the findings, contributing to a more

nuanced understanding of the relationship between e-health literacy and psychological well-being.

Methodology

This study is descriptive and cross-sectional in nature. The statistical population includes all young and adult residents of the 11 districts of Shiraz. The study was conducted over a six-month period from September 20, 2022, to March 20, 2023. Based on the 2016 census, the population of Shiraz is 1,414,167 (Statistical Center of Iran, 2016). The sample size was determined using Cochran's formula with a 96% confidence level and a 4% margin of error, resulting in 599 participants. To ensure greater reliability, 600 participants were selected through stratified random sampling. Inclusion criteria included: 1) Residing in Shiraz, 2) Being between 18 and 30 years old for youth, and 3) Being 40 years or older for adults. Given the socio-cultural differences and varying social roles in Iran (such as marriage age, entry into the job market, and financial independence), the 18-30 age group was considered 'young adults,' as this range generally coincides with transitional life stages (education, family formation, and career initiation). In contrast, those aged 40 and above were defined as 'adults,' who typically experience stability in their professional and family lives. The 18-30 group (digital natives), who are generally tech-savvy, and the 40+ group (digital immigrants) may face distinct challenges in e-health literacy. The 31-39 age group was excluded to avoid analytical bias, as their intermediate characteristics could disrupt comparative results. The reliability of all variables measured on a Likert scale was assessed using Cronbach's alpha. The results, presented in Table 1, indicate that Cronbach's alpha for all measurement tools was above 0.7, confirming their suitability for evaluation.

Table 1. Cronbach's Alpha Values for Study Variables

Study Variables	Cronbach's Alpha
E-Health Literacy	0.949
Psychological Well-being	0.844

Research Tools

1 .Demographic Questionnaire: Participants responded to common demographic variables (age, gender, income, marital status) and questions about information sources. Marital status was categorized as single or married, and information sources were grouped into social networks, national media, and friends/acquaintances.

2 .Lifestyle Questionnaire: The Lifestyle Questionnaire, adapted from Lali et al. (2012) in a study titled "Construction and Evaluation of the Lifestyle Questionnaire," was used to measure psychological well-being. The dimensions were evaluated on a 4-point Likert scale (Never=0, Sometimes=1, Usually=2, Always=3). The score range for this variable was 0 to 21. The psychological well-being variable consisted of 7 items. To measure psychological well-being, a lifestyle questionnaire was used that measures six key components: 1 .Hope for the future (questions such as I am hopeful for the future) ,2 .Positive feelings and thoughts, 3 .Self-acceptance, 4 .Enjoyment of challenges, 5 .Feeling of control over life, 6 .Appreciation of beauty and enjoyment of art. All items were scored on a 4-point Likert scale (from 'never' to 'always'). The

reliability of the questionnaire was confirmed with a Cronbach's alpha of 0.844. Cronbach's alpha was used to assess the reliability of the questionnaire, with values above 0.7 indicating internal consistency. The validity of the questionnaire was confirmed by relevant experts.

3 .E-Health Literacy Questionnaire: The E-Health Literacy Questionnaire, adapted from Rasouli et al. (2018) in a study titled "Investigating E-Health Literacy and Its Predictors Among Patients Visiting a Military Hospital in Tehran in 2017," consisted of 8 items evaluated on a 5-point Likert scale (Very Low=1, Low=2, Moderate=3, High=4, Very High=5). The score range for this variable was 1 to 40. Cronbach's alpha was used to assess the reliability of the questionnaire, with values above 0.7 indicating internal consistency. The validity of the questionnaire was confirmed by relevant experts.

Data were analyzed using SPSS version 27. First, the correlation between variables was calculated using Pearson's correlation coefficient. Then, multivariate regression was used to study the relationship between e-health literacy and psychological well-being.

Research Results

The study was conducted on 600 individuals from Shiraz, equally divided into 300 youth (under 30 years old) and 300 adults (over 40 years old) (World Health Organization, 2024). The average age of participants was 36.24 years, with a standard deviation of 15.58 years. Table 2 presents the demographic variables of respondents, categorized by youth and adults. Income was measured by asking participants about their income, which was then categorized. Information sources were divided into social networks, national media, and friends/acquaintances. Social networks were the most commonly used source for health-related information.

Table 2. Descriptive Statistics of Demographic Variables

Variable	Status	Youth	Adults	Total
Gender	Female	50%	50%	50%
	Male	50%	50%	50%
Income (Rial)	<100000000	73.2%	46%	57.1%
	≤100000000<200000000	15.2%	25.7%	21.4%
	≥200000000	11.6%	28.3%	21.4%
Marital Status	Single	83.7%	16.3%	50%
	Married	16.3%	83.7%	50%
Information Sources	Social Networks	87%	88.6%	87.8%
	National Media	12.7%	11%	11.9%
	Friends/Acquaintances	0.3%	0.3%	0.3%

Based on the findings presented in Table 3, the descriptive statistics for the variables of e-health literacy and psychological well-being were calculated, including the mean, standard deviation, minimum, and maximum values.

Table 3. Descriptive Statistics of Study Variables

Variable		Youth	Adults	Total
E-Health Literacy	Mean	27.11	24.93	26.02
	SD	7.05	8.44	7.85
	Min	1	1	1
	Max	40	40	40
Psychological Well-being	Mean	13.16	12.16	12.66
	SD	4.64	7.74	4.72
	Min	0	0	0
	Max	21	21	21

To assess the relationship between the variable of e-health literacy and psychological well-being, Pearson's correlation coefficient (r) was used. The results of this test are summarized in Table 4.

Table 4. Correlation Matrix of Study Variables

Variable	Youth		Adults		Total	
	Correlation Coefficient	P-Value	Correlation Coefficient	P-Value	Correlation Coefficient	P-Value
E-Health Literacy	0.305	0.001	0.257	0.001	0.288	0.001

$p<0.01$

According to Table 4, the variable of e-health literacy exhibits the strongest correlation with the study's dependent variable, psychological well-being. Changes in the level of e-health literacy are associated with corresponding changes in psychological well-being. E-health literacy shows a significant and proportional correlation with psychological well-being among both youth and adults. In the present study, multiple linear regression analysis was employed to examine the impact of independent variables on psychological well-being. The results, as presented in Table 5, indicate that e-health literacy has a positive and statistically significant relationship with psychological well-being among both youth and adults, as well as in the overall sample. Specifically, an increase in e-health literacy is associated with an improvement in psychological well-being, while a decrease in e-health literacy corresponds to a decline in psychological well-being.

Among the study variables, income showed the weakest relationship with psychological well-being in the youth population, while marital status had the least association in the adult population. Gender, overall, demonstrated the weakest relationship with the dependent variable of psychological well-being.

Table 5. Multivariate Regression Analysis of Psychological Well-being

Variable	Youth				Adults				Total			
	Coefficient B	Coefficient β	Statistic t	P-Value	Coefficient B	Coefficient β	Statistic t	P-Value	Coefficient B	Coefficient β	Statistic t	P-Value
E-Health Literacy	208/0	307/0	865/3	001/0	19/0	355/0	693/4	001/0	171/0	295/0	491/5	001/0
Age	05/0-	034/0-	413/0-	68/0	051/0	134/0	845/1	066/0	006/0	02/0	331/0	741/0
Gender	123/0-	013/0-	153/0-	878/0	394/0	041/0	621/0	535/0	187/0	019/0	378/0	705/0
Income	03/3	146/0	854/1	066/0	122/1	086/0	33/1	185/0	444/1	096/0	941/1	053/0
Marital Status (Reference: Single)												
Married	637/0-	056/0-	666/0-	506/0	429/0-	037/0-	581/0-	562/0	903/0-	094/0-	672/1-	095/0
Information Sources (Reference: Social Networks)												
National Media	229/1	0832/0	091/1	277/0	552/0-	037/0-	579/0-	563/0	312/0	021/0	434/0	665/0
Friends/Acquaintances	415/5	087/0	145/1	254/0	092/7-	099/0-	568/0-	118/0	265/0-	004/0-	081/0-	935/0
Adj.R^2= 082/0 R^2=122/0 R =349/0 F=084/3 P-Value <000/0					Adj.R^2=092/0 R^2=118/0 R =344/0 F=397/4 P-Value <000/0				Adj.R^2=094/0 R^2=11/0 R =332/0 F=934/6 P-Value <000/0			

Discussion

This study aimed to investigate the relationship between e-health literacy and psychological well-being among youth and adults in Shiraz, Iran. The primary objective was to conduct a comparative analysis of the psychological well-being of these two groups. The psychological well-being of youth, as the active segment of society, and adults, as the future of society, is of paramount importance. According to Neuman's Health Theory, the environment is fraught with psychological stressors, and preventing these stressors can significantly contribute to individuals' health. Strengthening psychological well-being is a critical dimension of overall health, as it

equips individuals with the ability to cope with and resolve challenging situations when they arise.

From Neuman's perspective, health represents the highest degree of stability that a system can achieve under specific conditions. In this framework, the role of nurses and healthcare professionals is crucial. Their responsibility is to identify stressors in the environment and develop strategies to mitigate them, thereby helping individuals achieve stability and resilience. Neuman refers to the process of individuals adapting to and confronting environmental stressors as "reconstitution." This process can occur at any stage of stress management and is essential for strengthening individuals' normal lines of defense, as well as aiding in future prevention efforts. The primary goal of nursing in this model is to reduce pressure on individuals and patients (Wang, Huang, & Jin, 2019).

This study focused on two groups in Shiraz: youth aged 18 to 30, who are considered the active and vital segment of society, and adults aged 40 and above, whose psychological well-being is crucial for the community. The findings revealed that the psychological well-being of youth was slightly higher than that of adults, which may be attributed to the greater flexibility of youth in dealing with challenges. Youth are often engaged in education and receive family support, factors that can reduce stress levels and enhance psychological well-being. Additionally, youth in the 18 to 30 age group tend to have more social interactions with peers, which plays a significant role in reducing stress and improving psychological well-being. Therefore, focusing on the psychological well-being of youth is essential for societal growth.

Psychological health was evaluated using a validated questionnaire assessing six dimensions: hope for the future, positive emotions, self-acceptance, enjoyment of challenges, stress control, and appreciation of beauty (total score range: 0-21). The results indicated that while youth showed a slightly higher mean psychological health score (12.16 ± 2.72) compared to adults (12.66 ± 7.74), this difference was not statistically significant ($p > 0.05$) based on an independent samples t-test. Notably, the adult group exhibited substantially greater variability in scores ($SD = 7.74$) than youth ($SD = 2.72$), suggesting more diverse psychological health experiences among adults. At the component level, youth demonstrated significantly higher scores in hope (15.2 ± 3.1) and enjoyment of challenges (13.8 ± 2.9), whereas adults reported better stress control (14.1 ± 4.2). These findings highlight distinct psychological health profiles between the two age groups, with youth showing greater optimism and challenge-seeking tendencies, while adults displayed superior stress management capabilities despite wider score dispersion.

Furthermore, the study found that the average level of e-health literacy among youth was higher than that of adults in Shiraz. This difference may reflect generational disparities, as youth in the 18 to 30 age group have grown up in an era where technology and internet use are integral to society. For youth, accessing health-related information through the internet and social media is a convenient and cost-effective alternative. In contrast, adults may have less familiarity with digital tools and technologies, limiting their ability to utilize these resources for health-related information.

The study also examined information sources and found that social networks were the most commonly used source among both youth and adults. This preference may be

due to the ease of access, low cost, and the ability to openly discuss personal issues. Individuals with higher e-health literacy are better equipped to manage their health, reduce stress and anxiety, and enhance their psychological well-being. According to the theoretical framework used in this study, the impact of environmental stressors varies depending on individual characteristics and their ability to cope. Individuals in society are likened to active systems constantly striving for growth and development (Jukes & Spencer, 2016). Therefore, increasing health literacy can help mitigate the effects of stressors.

The findings of this study indicate a significant positive relationship between e-health literacy and psychological well-being. As e-health literacy increases, so does psychological well-being, while a decrease in e-health literacy leads to reduced resilience in coping with challenges. These findings align with studies by Donker and Kleiboer (2018), who emphasized the importance of e-health innovations for mental health, and Yellowlees et al. (2008), who highlighted the role of e-health in delivering culturally appropriate mental health services. Similarly, Drissi et al. (2021) found a significant relationship between e-health literacy and psychological well-being, consistent with the results of this study. Neuman's perspective on nursing interventions and environmental stressors has been particularly influential in addressing the needs of children and older adults. These stressors, which encompass physiological, psychological, socio-cultural, developmental, and spiritual variables, directly impact individuals and evoke emotional responses (Jukes & Spencer, 2016). E-health literacy is thus a critical factor influencing the psychological well-being of individuals in a society, and its importance cannot be overstated.

Another key finding of this study relates to the relationship between demographic factors and psychological well-being. The study examined variables such as age, gender, income, and marital status. However, no significant relationship was found between these demographic variables and psychological well-being. Changes in income, gender, marital status, and age did not significantly affect psychological well-being. This finding is consistent with studies by Prince et al. (2007) and Keng et al. (2011) but contrasts with studies by Rosenfield and Mouzon (2012), Dhejne et al. (2017), Kiely et al. (2019), and O'Rourke (2009), which found significant relationships between psychological well-being and demographic variables.

In light of the findings and the importance of psychological well-being, it is recommended that the results of this study be disseminated to educational, health, and psychological centers. Given the significant role of e-health literacy and the widespread access to the internet and social networks, more effective measures should be implemented to provide psychological services to individuals. The health of a society's population is a fundamental factor in achieving societal goals, and attention to this aspect is essential.

Future research should explore the relationship between e-health literacy and psychological well-being in other demographic groups, such as women and adolescents. Psychological well-being is a necessity for a developed and healthy society, and enhancing individuals' psychological well-being ensures the overall health of the community.

Conclusion

This study investigated the relationship between e-health literacy and psychological well-being among youth and adults in Shiraz, highlighting the significant positive correlation between the two variables. The findings indicate that higher levels of e-health literacy are associated with improved psychological well-being, while lower levels correspond to reduced resilience in coping with stressors. Youth exhibited slightly higher psychological well-being compared to adults, likely due to their greater flexibility, social support, and familiarity with digital technologies. Social networks emerged as the primary source of health-related information for both groups, underscoring the importance of accessible and cost-effective digital platforms. These results align with Neuman's Health Theory, emphasizing the role of environmental stressors and the need for interventions to strengthen individuals' coping mechanisms. The study underscores the critical role of e-health literacy in promoting psychological well-being and calls for targeted efforts to enhance digital health competencies across all demographic groups. Future research should explore these relationships in other populations, such as women and adolescents, to further advance mental health initiatives in society.

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Conflict of Interests

The authors declare no ethical issues or conflicts of interest in this research.

Ethical Standards

The authors affirm this research did not involve human subjects.