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UNDERSTANDING USERS' PERCEPTION AND TRUSTWORTHINESS IN DIGITAL HEALTH PLATFORMS: CASES OF MARHAM.PK AND WEBMD.COM

Original Article

Saima Hanif[1]*, Sehrish Mushtaq[2], Huma Tahir[3]

[1]PhD Scholar, Department of Mass Communication, Lahore College for Women University, Lahore, Pakistan.

[2]Assistant Professor, Department of Mass Communication, Lahore College for Women University, Lahore, Pakistan.

[3]Department of Mass Communication, Lahore College for Women University, Lahore, Pakistan.

Corresponding Author: Saima Hanif, PhD Scholar, Department of Mass Communication, Lahore College for Women University, Lahore, Pakistan, shahidsaima923@gmail.com

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ABSTRACT

Background: The rapid advancement of digital technologies has transformed numerous sectors, including healthcare. Digital health platforms are increasingly being utilized to deliver accessible, convenient, and timely medical services, especially in resource-constrained settings. As more individuals turn to online consultation platforms, understanding user perception, trust, and perceived effectiveness becomes essential to evaluate their long-term viability and integration into healthcare systems.

Objective: This study aimed to examine the general perception, credibility, and effectiveness of digital health platforms, focusing on WebMD.com and Marham.pk, while exploring gender-based differences in user responses.

Methods: A cross-sectional survey design was adopted, targeting users of WebMD.com and Marham.pk. Data were collected from 513 respondents through a structured, self-administered questionnaire. The instrument measured three core constructs—user perception, trustworthiness, and effectiveness—using Likert scale-based items. Internal consistency was confirmed through Cronbach's alpha, and both descriptive and inferential statistics were applied for analysis, including one-sample t-tests and Mann-Whitney U-tests.

Results: The study revealed a positive perception among users, with a mean perception score of 22.6 (SD = 3.4). Trustworthiness and credibility yielded a mean score of 35.5 (SD = 6.69), and effectiveness recorded a mean score of 25.8 (SD = 4.67), all significantly above neutral midpoints ($p = .000$). Gender-based analysis showed women demonstrated greater trust (mean rank = 257.38), while men scored higher in perception (mean rank = 265.27) and effectiveness (mean rank = 260.80), all with statistically significant results.

Conclusion: Digital health platforms like WebMD.com and Marham.pk are perceived as credible and effective tools for health management. Their future adoption and success depend on strengthening user trust and addressing concerns around data privacy.

Keywords: Credibility, Digital Health Platforms, Effectiveness, Mobile Health, Perception, Telemedicine, Trustworthiness.

INTRODUCTION

Digital media has revolutionized various aspects of modern life, and its integration into healthcare has emerged as a transformative force with the potential to reshape traditional medical practices. The adoption of digital technologies in medicine is not merely a technological shift but a critical response to the growing demand for accessible, efficient, and cost-effective healthcare solutions. This digital transformation, encompassing electronic medical records, teleconsultations, and mobile health applications, has gained substantial momentum in recent years, particularly in developed nations (1,2). In countries like Pakistan, where healthcare infrastructure remains underdeveloped and the ratio of physicians to patients is critically low—estimated at nine to ten physicians per 10,000 individuals—the role of digital platforms becomes even more significant (3). Compounded by a shortage of paramedical staff, hospital beds, and essential health facilities, these challenges necessitate alternative strategies to ensure healthcare delivery to underserved populations. The emergence of digital health platforms offers promising solutions, especially for internet users who face barriers in accessing in-person care. Online consultation is increasingly valued in an era where convenience and immediacy are prioritized (4,5). Despite their potential, digital health platforms face persistent concerns regarding credibility, data privacy, and clinical reliability. These concerns are further amplified by the lack of consistent regulatory frameworks, particularly in low- and middle-income countries. Nonetheless, the trajectory of healthcare globally indicates a growing reliance on digital modalities (6). Medical documentation, health records, and professional communications are now largely maintained on virtual platforms, enhancing both accessibility and coordination across healthcare systems (7). Open-source and mobile technologies have enabled the rapid dissemination of health information, empowering both patients and professionals to make informed decisions (8). Yet, the successful implementation of these technologies requires digital literacy, technological infrastructure, and workforce training—components that are still in developmental stages in many healthcare systems (9).

Moreover, the global rise of mobile health (m-health) applications has created a parallel market of health solutions that often lack standardized regulation. These apps frequently collect sensitive personal data, raising critical concerns about safety, efficacy, and ethical data handling (10,11). Platforms such as Marham.pk in Pakistan have introduced a new mode of healthcare access, particularly serving women and children through social media groups and website-based consultations. Similarly, WebMD.com serves as an international platform providing users with health-related content and self-guided medical advice. However, mixed public perceptions persist regarding the reliability and effectiveness of such platforms, largely due to concerns about professional credibility, misinformation, and data security (12). The World Health Organization has acknowledged the potential of digital platforms to connect remote patients with healthcare professionals but also emphasizes the importance of regulatory oversight and cybersecurity measures to build public trust (13). In light of these dynamics, the present study investigates users' perceptions, trust levels, and the perceived effectiveness of digital health platforms in Pakistan, focusing specifically on WebMD.com and Marham.pk. Employing a quantitative research design and structured questionnaire, this study aims to assess the credibility and utility of these platforms in addressing healthcare needs. By understanding public perception, the research seeks to inform strategies that enhance the trustworthiness and functional integration of digital health services in developing healthcare systems.

METHODS

This study employed a quantitative cross-sectional survey design to evaluate user perception, trustworthiness, and perceived effectiveness of digital health platforms, with a specific focus on WebMD.com and Marham.pk. The target population consisted of individuals who had prior experience using these platforms for health-related purposes. A total of 513 respondents were recruited using purposive sampling. Participants were required to be active users of either WebMD.com or Marham.pk and have access to the internet. Exclusion criteria included individuals without prior exposure to digital health services or those unwilling to provide informed consent. Data collection was facilitated through a structured, self-administered, closed-ended questionnaire. Ethical approval for this study was obtained from the institutional review board, and informed consent was secured from all participants prior to survey administration. The questionnaire included demographic questions and a five-point Likert scale measuring three primary constructs: general user perception, trustworthiness (credibility), and effectiveness of the platforms. Each of these variables was operationalized using previously validated scales that were adapted to suit the local context and language where necessary. User perception was assessed through a modified version of the scale developed by Zhuang, comprising six items rated from “strongly agree” to “strongly disagree.” The additive scale produced scores ranging from 6 to 30, with higher scores indicating more favorable perceptions. The internal consistency for this subscale, measured by Cronbach’s alpha, was 0.817, indicating good reliability.

Trustworthiness was measured using a scale developed by Buttner and Görlitz (2008), including ten Likert-scale questions. Scores ranged from 10 to 50, with higher values reflecting greater trust in the health platforms. The Cronbach's alpha for this subscale was 0.788, demonstrating acceptable reliability. Effectiveness was assessed using seven items based on the effectiveness and trustworthiness scale also proposed by Buttner and Görlitz (2008), with reference to online service response, interaction quality, and content relevance (14,15). Scores for this domain ranged from 7 to 35, with a Cronbach's alpha of 0.896, indicating high reliability. This variable was crucial in understanding how well these platforms met user expectations regarding service delivery and outcomes (16). To test the reliability and clarity of the instrument, a pilot study was conducted with 33 participants who were active users of either WebMD.com or Marham.pk. The pilot confirmed the internal consistency of all three scales, with Cronbach's alpha values exceeding the acceptable threshold of 0.60. These results validated the instrument, allowing for its final application in the full-scale study. Statistical analysis involved calculating descriptive statistics and reliability coefficients using SPSS software. Scores for each construct were computed using additive scaling, and higher scores indicated stronger agreement or more favorable responses regarding the respective domains. The study adhered to ethical research standards, including participant anonymity, voluntary participation, and confidentiality of responses.

RESULTS

The analysis of descriptive and inferential statistics revealed notable trends in users' responses regarding their interaction with digital health platforms such as WebMD.com and Marham.pk. To assess users' general perception, six items were analyzed using a five-point Likert scale. A substantial proportion of respondents expressed agreement with the usability and utility of these platforms. Specifically, 47.57% agreed that these platforms are easy to use, while 59.65% believed they help individuals understand what it is like to live with a health condition. Additionally, 54.0% reported that such platforms help them assess whether their symptoms require medical attention, and 54.78% agreed on their round-the-clock accessibility. Further, 51.66% felt they learned something new, and 49.90% felt at ease while using digital health platforms. A one-sample t-test confirmed that the mean general perception score ($M = 22.6$, $SD = 3.4$, $n = 513$) was significantly greater than the neutral benchmark of 18, $t(512) = 30.42$, $p = .000$, with a large effect size ($d = 1.35$), indicating a generally positive perception. With respect to credibility, 45.03% of users agreed they would create an account on such platforms for consultation, while 44.44% felt confident their data remained private. A total of 40.35% expressed trust in these platforms, and 53.02% felt the platforms gave them confidence in managing their health. Similarly, 51.46% agreed they would use these platforms in deciding whether to see a doctor, and 47.37% for decisions on medications.

The mean credibility score ($M = 35.5$, $SD = 6.69$, $n = 513$) significantly exceeded the neutral value of 23, $t(512) = 42.34$, $p = .000$, with a large effect size ($d = 1.86$), suggesting a high level of perceived credibility and trust in these platforms. Effectiveness was also strongly supported by participant responses. Over half of the respondents (52.83%) valued the medical advice received on these platforms, and 51.46% considered the advice appropriate. Additionally, 54.58% agreed the platforms helped improve their understanding of personal health, while 49.32% felt more inclined to practice self-care. The mean effectiveness score ($M = 25.8$, $SD = 4.67$, $n = 513$) was significantly above the neutral midpoint of 15, $t(512) = 52.48$, $p = .000$, with a large effect size ($d = 2.31$), affirming the perceived effectiveness of digital platforms in supporting healthcare engagement. To assess potential gender differences, a Mann-Whitney U-test was conducted across all three domains. Women scored significantly higher in credibility (mean rank = 257.38) compared to men, showing a moderate effect size. Conversely, men scored higher in both general perception (mean rank = 265.27) and effectiveness (mean rank = 260.80), although with a small effect size. These results indicate subtle but noteworthy gender-based variation in digital health platform usage experience.

Table 3.1: General Perception regarding Digital Health Platforms

Sr. No	Question	SD	DA	N	A	SA
1	Digital health platforms like WebMD and MARHAM are easy to use	1.55%	2.79%	37.43%	47.57%	10.72%
2	The digital health platforms can help the public to know what it is like to live with a health problem	.39%	2.72%	20.27%	59.65%	16.96%
3	The digital health platforms can be useful to help people decide if their symptoms are important enough to go to see a doctor	.78%	3.31%	21.64%	54.0%	20.27%
4	It can be calming to know that I can access health-related platforms at any time of the day or night	.78%	1.94%	22.03%	54.78%	20.47%
5	I have learnt something new from the health-related platforms	.78%	4.48%	25.93%	51.66%	17.15%
6	I feel at ease when working with digital platforms of health	.78%	2.53%	33.33%	49.9%	13.45%

Table 3.2: Credibility of the Digital Health Platforms

Sr. No.	Question	SD	DA	N	A	SA
1	I would be likely to create an account on WebMD and MARHAM for health-related consultation	1.75%	8.96%	32.75%	45.03%	11.5%
2	The digital health platforms can help the public to know what it is like to live with a health problem	1.75%	14.42%	35.48%	37.04%	11.31%
3	Everything that I do on digital health platform remains private	1.36%	7.99%	32.55%	44.44%	13.65%
4	I can trust digital health platforms.	1.36%	5.65%	42.11%	40.35%	10.53%
5	The digital health platform is a reliable resource to help me understand what a doctor tells me	.78%	5.84%	29.43%	50.49%	13.45%
6	I would use the digital health platforms to make a decision to go and see a doctor	1.55%	4.28%	28.46%	51.46%	14.23%
7	I would use these health platforms to make decision about taking any medication	1.75%	10.14%	30.99%	47.37%	9.74%
8	I would use the digital health platforms to make a decision about seeking other types of treatment	1.94%	5.84%	29.24%	49.71%	13.26%
9	The platform gives me confidence that I am able to manage my health	1.36%	5.45%	26.9%	53.02%	13.26%
10	The digital health platform gives me the confidence to explain my health concerns to others	1.17%	3.11%	27.88%	52.44%	15.4%

Table 3.3: Effectiveness of the Digital Health Platforms

Sr. No.	Questions	SD	DA	N	A	SA
1	I value the advice given on the platform	.78%	4.28%	27.88%	52.83%	14.23%
2	I would be concerned about digital health platforms to check that the doctor is giving me appropriate advice.	1.17%	7.01%	26.9%	51.46%	13.45%
3	The platform includes useful tips on how to make life better.	1.55%	3.70%	29.04%	51.46%	14.23%
4	I feel more inclined to look after myself after visiting the health-related platform	1.36%	4.48%	31.58%	49.32%	13.26%
5	The platform helps me to have a better understanding of my personal health	.78%	3.70%	27.88%	54.58%	13.06%
6	When I use a digital health platform, I am in control and aware of my health issues	1.36%	6.43%	32.36%	47.37%	12.48%
7	Overall, I find the platform supportive.	.58%	2.53%	22.61%	54.58%	19.69%

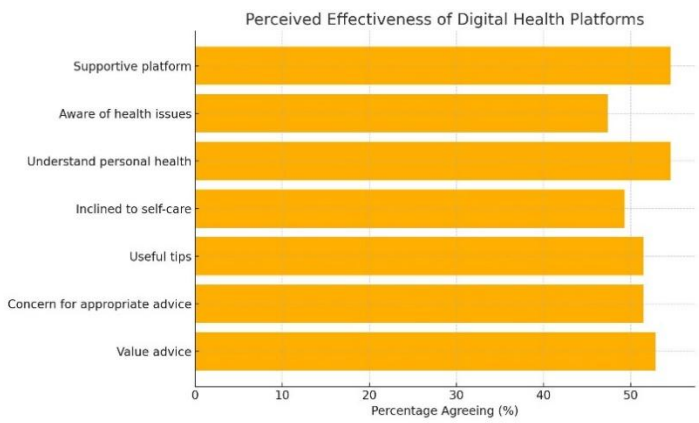

Figure 1 Perceived Effectiveness of Digital Health Platforms

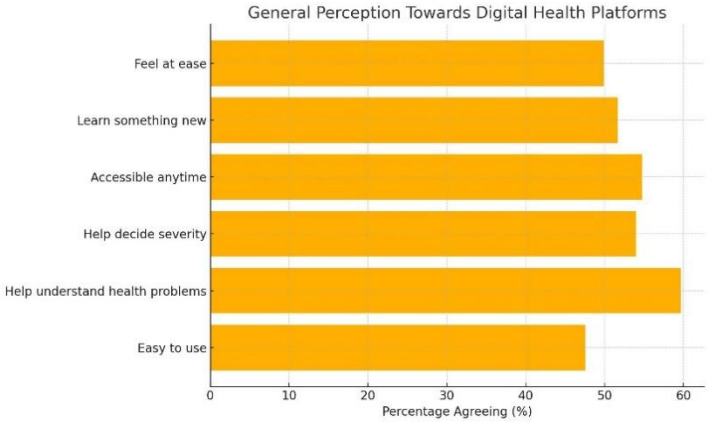

Figure 2 General Perception Towards Digital Health Platforms

DISCUSSION

The findings of this study provide meaningful insights into the perception, credibility, and effectiveness of digital health platforms, with WebMD.com and Marham.pk serving as focal case studies. The survey results revealed a generally positive perception among users, indicating that digital health platforms are perceived as user-friendly, informative, and accessible. This aligns with prior studies that have emphasized the usability of digital tools in delivering health information and services in a convenient manner, especially in low-resource settings (17-19). Users acknowledged the value of these platforms in understanding symptoms and making preliminary health-related decisions, which highlights the growing role of technology in augmenting traditional healthcare approaches (20). Trust and credibility, while positively rated, showed some ambivalence, particularly regarding data privacy and security. Although many participants expressed confidence in the platforms' ability to assist in health decision-making and managing their well-being, a sizable proportion remained cautious about sharing personal health data (21,22). This hesitancy reflects a broader concern seen in digital health research, where privacy, data protection, and ethical governance remain pressing challenges in user engagement. Despite the rising popularity of platforms like Marham.pk, user trust is not yet fully consolidated, signaling the need for stricter regulatory frameworks, transparent privacy policies, and visible endorsements from health authorities to build public confidence.

The study further underscored the effectiveness of digital health platforms in enhancing health literacy and providing timely advice. Respondents reported feeling supported and more proactive about their health after using such services, a finding consistent with emerging literature on mobile health (mHealth) interventions and telemedicine. However, the lack of professional regulation of online medical content and variability in service quality across platforms remains a limitation that may affect consistency in user outcomes. One of the strengths of this study lies in its use of a validated instrument and a large sample size, which adds reliability to the findings. The quantitative design allowed for objective assessment across clearly defined variables, and the inclusion of a pilot study ensured internal consistency and relevance of the instrument. Additionally, the study addressed a timely topic in the context of Pakistan, a country facing healthcare workforce shortages and infrastructural limitations, where digital health could serve as a critical alternative.

Nonetheless, the study had several limitations. The use of self-reported data may introduce response bias, and the sample was limited to internet users familiar with only two platforms, which may not be representative of the broader population. Moreover, demographic and socioeconomic factors beyond gender were not deeply analyzed, limiting the depth of subgroup analysis. The cross-sectional nature of the design also restricts conclusions about long-term engagement and behavioral change. Furthermore, while perceptions and intentions were measured, actual clinical outcomes and the quality of medical advice were not evaluated. Future research should explore longitudinal impacts of digital health platform use, incorporate a wider range of platforms, and include diverse population groups to enhance generalizability (23). It would also be valuable to integrate qualitative methods to capture more nuanced user experiences and examine how digital health usage influences real-life health behaviors and outcomes. Strengthening digital literacy among users and enhancing professional training in digital communication for healthcare providers are necessary steps toward maximizing the potential of these platforms. In conclusion, digital health platforms like WebMD.com and Marham.pk are increasingly recognized for their

potential to facilitate health access, awareness, and self-management, particularly in settings where traditional healthcare systems face operational challenges. While the perception and effectiveness are well established among users, concerns related to trust and data security warrant targeted policy attention to ensure safe and equitable digital health transformation.

CONCLUSION

This study concludes that digital health platforms hold substantial promise in transforming healthcare delivery, particularly in developing countries like Pakistan, where access to conventional healthcare remains limited. The findings indicate that users generally perceive platforms like WebMD.com and Marham.pk as accessible, informative, and supportive in managing health concerns. While users recognize their effectiveness in providing health advice and enhancing awareness, concerns around credibility and data privacy persist, highlighting the need for improved regulatory oversight and transparency. As mobile technology and social media continue to evolve, the integration of digital health solutions into mainstream healthcare has the potential to bridge gaps in service accessibility, empower patients, and support a more informed, health-conscious society.

AUTHOR CONTRIBUTION

Author	Contribution
Saima Hanif*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Sehrish Mushtaq	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Huma Tahir	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published

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