

Self-Diagnosis and Self-Medication Using Digital Health Information And AI-Assisted Platforms Among Software Employees

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ABSTRACT

Background: The increasing availability of digital health information and artificial intelligence (AI)-assisted platforms has significantly influenced health-seeking behaviour. Individuals increasingly rely on these platforms for symptom interpretation and treatment decisions, which may lead to self-diagnosis and self-medication practices.

Objectives: To estimate the proportion of software employees practicing self-diagnosis and self-treatment using digital health information and AI-assisted platforms, and to determine factors influencing these practices.

Methods: A cross-sectional study was conducted among 75 software employees using a pre-tested semi-structured electronic questionnaire. Participants were selected using a non-random chain-referral sampling method. Data were analysed using SPSS version 25. Descriptive statistics were expressed as frequencies and percentages. Associations were analysed using Chi-square or Fisher's exact test, and prevalence ratios with 95% confidence intervals were calculated.

Results: The majority of participants were aged 21–25 years (53.3%) and male (68%). Overall, 58.7% practiced self-diagnosis using digital health information and AI-assisted platforms, while 21.3% reported self-treatment practices. Most participants (70.7%) sometimes searched for health information when experiencing symptoms, and 48% searched for drug-related information online. About 20% reported adverse drug reactions. No statistically significant association was observed between socio-demographic variables and self-diagnosis or self-treatment practices ($p>0.05$).

Conclusion: A considerable proportion of software employees rely on digital health information and AI-assisted platforms for self-diagnosis, with a smaller proportion engaging in self-treatment. While digital platforms are widely used for preliminary health understanding, most individuals continue to prefer professional medical consultation.

Keywords: Self-diagnosis, Self-medication, Digital health information, Artificial intelligence, Health-seeking behaviour

INTRODUCTION

The rapid expansion of digital technologies has substantially transformed the way individuals access health information and make decisions regarding their health. In recent years, digital health information sources such as online medical databases, mobile health applications, telemedicine services, and artificial intelligence (AI) assisted health platforms have become widely accessible to the general population. These digital platforms enable individuals to obtain information about symptoms, diseases, diagnostic procedures, and treatment options without direct consultation with healthcare professionals. Consequently, many individuals increasingly rely on digital health information and AI-assisted platforms to understand symptoms and guide their health-related decisions [1].

Globally, the use of digital health resources has increased considerably with the widespread availability of smartphones and improved internet connectivity. It has been reported that a large proportion of adults search for health-related information through digital platforms before seeking professional medical advice [2]. Individuals who actively obtain health information using digital technologies are often described as “e-patients,” reflecting their increasing participation in healthcare decision-making processes [3]. Although digital health information can enhance awareness and improve health literacy, interpretation of medical information without professional guidance may lead to misunderstanding of symptoms and inappropriate health decisions.

One of the important consequences of the growing use of digital health information is the practice of self-diagnosis, in which individuals attempt to identify diseases or medical conditions based on personal interpretation of symptoms without professional medical consultation. Similarly, self-treatment or self-medication refers to the use of medicines on one’s own initiative or based on advice obtained from non-professional sources without consulting a

qualified healthcare provider [4]. Self-medication may include the use of previously prescribed drugs, over-the-counter medications, herbal preparations, or treatments suggested through digital health platforms. Although responsible self-care may be beneficial for minor ailments, irrational self-medication can lead to several health risks such as adverse drug reactions, drug interactions, masking of serious diseases, and antimicrobial resistance [5,6]. In recent years, the emergence of AI-assisted health platforms and digital symptom checkers has further influenced the way individuals interpret health information. These tools use machine learning algorithms to provide possible diagnoses or health advice based on symptoms reported by users. Such technologies aim to improve accessibility to health information and assist individuals in preliminary health assessment. However, studies evaluating AI-based symptom checkers have demonstrated considerable variation in their diagnostic accuracy and reliability [7]. Therefore, excessive reliance on AI-generated health information without professional consultation may result in misinterpretation of symptoms, unnecessary anxiety, and inappropriate treatment practices.

Another phenomenon associated with extensive searching for health information through digital platforms is cyberchondria, which refers to heightened anxiety resulting from repeated searches for medical information online. Individuals may become convinced that they are suffering from serious illnesses after interpreting symptoms through digital sources, even when the symptoms are minor or unrelated. This behaviour may influence health-seeking practices, resulting either in unnecessary fear or inappropriate self-treatment [8].

Professionals working in the software and information technology sector represent a population group with high levels of digital literacy and frequent exposure to digital technologies. Due to their familiarity with digital tools and easy access to digital health information platforms, software employees

may be more inclined to search for medical information through digital sources and AI-assisted platforms for symptom interpretation and treatment decisions. Understanding their practices related to digital health information seeking, self-diagnosis, and self-treatment is therefore important in order to identify potential risks and promote responsible health behaviour.

Despite the increasing use of digital health platforms and AI-assisted technologies, limited studies have examined the extent to which software professionals rely on such platforms for self-diagnosis and self-treatment. Therefore, the present study was undertaken to estimate the proportion of software employees practicing self-diagnosis and self-treatment using digital health information and AI-assisted platforms, and to determine the factors influencing these practices.

METHODOLOGY

Study Design: A cross-sectional study was conducted to assess the practices of self-diagnosis and self-treatment using digital health information and AI-assisted platforms among software employees.

Study Setting and Population: The present study was conducted among software employees working in various information technology companies. Software professionals were selected as the study population because of their high exposure to digital technologies and frequent use of digital platforms for obtaining information.

Inclusion Criteria: Individuals working as software employees and willing to participate in the study were included.

Exclusion Criteria: Individuals who were not citizens of India or those who were unwilling to participate in the study were excluded.

Sample Size: A pilot study was conducted to estimate the required sample size for the study. Based on the pilot findings, the

estimated proportion of self-diagnosis practice was found to be 57%. Considering this proportion ($p = 0.57$), relative precision of 20%, and a confidence level of 95%, the minimum required sample size was calculated to be 73. However, a total of 75 participants were included in the final analysis.

Sampling Technique: A non-random chain-referral sampling method (snowball sampling) was adopted for selecting the study participants. Initially, a few eligible software employees were identified and invited to participate in the study. These participants were then requested to refer other software professionals within their professional network who met the eligibility criteria.

Data Collection Tool: Data were collected using a pre-tested semi-structured electronic questionnaire. The questionnaire consisted of sections related to socio-demographic details, practices related to self-diagnosis using digital health information and AI-assisted platforms, and self-treatment practices. The questionnaire also included items assessing participants' behaviour regarding searching for symptoms, drug information, and their healthcare-seeking preferences.

Data Collection Procedure: Data were collected using a pre-tested electronic questionnaire administered either in person or through telephone-based interviews. Participants were informed about the purpose of the study before participation. Informed consent was obtained from all participants prior to data collection, and confidentiality of the information provided by the participants was maintained.

Ethical Considerations: Ethical approval for conducting the study was obtained from the Institutional Ethics Committee prior to the commencement of the study. Participation in the study was voluntary, and

confidentiality of the collected data was ensured throughout the study period.

Statistical Analysis

The collected data were entered and analysed using Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics were presented in the form of frequencies and percentages. Prevalence ratio with 95% CI were calculated. The association between variables was analyzed using Chi-square test or Fisher's exact test as appropriate. A p-

value of less than 0.05 was considered statistically significant.

RESULTS

The majority of the participants belonged to the 21–25 years age group (53.3%), followed by 26–30 years (21.3%). Males constituted 68% of the study population, while females accounted for 32%. Most participants were undergraduates (73.3%), and about 66.7% had work experience of less than 5 years. Nearly 46.7% reported having a doctor in their family or close relatives (Table 1).

Table 1: Socio-demographic characteristics of study participants

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	21–25	40	53.3
	26–30	16	21.3
	31–35	10	13.3
	36–40	5	6.7
	41–45	4	5.3
Gender	Male	51	68
	Female	24	32
Education	Undergraduate	55	73.3
	Postgraduate or above	20	26.7
Work experience (years)	0–5	50	66.7
	6–10	14	18.7
	>10	11	14.7
Doctor in family / relatives	Yes	35	46.7
	No	40	53.3

The majority of participants (70.7%) sometimes searched for health information using digital platforms when experiencing symptoms, while 20% always performed such searches. More than half of the participants (56%) sometimes visited medical websites or online forums for health information. Overall, 44 participants (58.7%)

practiced self-diagnosis using digital health information or AI-assisted platforms, while 16 participants (21.3%) reported self-treatment based on digital platforms. Nearly 48% sometimes searched for information about medicines online, and 20% reported experiencing drug reactions due to self-medication (Table 2).

Table 2: Behaviour related to digital health information and AI-assisted platforms

Behaviour related to digital health information	Category	Frequency (n)	Percentage (%)
Searching digital health information when noticing symptoms	Always	15	20
	Sometimes	53	70.7
	Never	7	9.3
Visiting trustworthy medical websites / forums	Always	19	25.3
	Sometimes	42	56
	Never	14	18.7
Self-diagnosis using digital health information or AI-assisted platforms	Always	6	8
	Sometimes	38	50.7
	Never	31	41.3
Panic after reading serious symptoms online	Always	9	12
	Sometimes	33	44

	Never	33	44
Searching for drug information online	Always	14	18.7
	Sometimes	36	48
	Never	25	33.3
Self-treatment based on digital platforms	Always	1	1.3
	Sometimes	15	20
	Never	59	78.7
Drug reactions due to self-medication	Sometimes	15	20
	Never	60	80

The prevalence of self-diagnosis using digital health information and AI-assisted platforms was slightly higher among females (70.8%) compared to males (52.9%). Participants with 0–5 years of work experience also showed slightly higher

prevalence (60%) of self-diagnosis. However, none of the socio-demographic variables showed a statistically significant association with self-diagnosis ($p > 0.05$) (Table 3).

Table 3: Association between demographic variables and self-diagnosis using digital health information and AI-assisted platforms

Variable	Category	Self-diagnosis n (%)	No self-diagnosis n (%)	PR	95% CI	p value
Age	21–30	33 (58.9)	23 (41.1)	1.02	0.58–1.79	0.99
	31–50	11 (57.9)	8 (42.1)	Reference	—	
Gender	Female	17 (70.8)	7 (29.2)	1.34	0.85–2.12	0.21
	Male	27 (52.9)	24 (47.1)	Reference	—	
Education	PG or above	13 (65.0)	7 (35.0)	1.15	0.72–1.84	0.6
	UG	31 (56.4)	24 (43.6)	Reference	—	
Experience	0–5 yrs	30 (60.0)	20 (40.0)	1.2	0.63–2.27	0.75
	6–10 yrs	7 (50.0)	7 (50.0)	Reference	—	
	>10 yrs	7 (63.6)	4 (36.4)	1.27	0.61–2.66	
Doctor in family	No	26 (65.0)	14 (35.0)	1.26	0.80–1.98	0.25
	Yes	18 (51.4)	17 (48.6)	Reference	—	

PR – Prevalence Ratio, CI – Confidence Interval

The prevalence of self-treatment using digital health information and AI-assisted platforms was higher among participants aged 21–30 years (26.8%) compared with older participants. Self-treatment was also slightly more common among males (25.5%)

compared to females (12.5%). However, no statistically significant association was observed between demographic variables and self-treatment practices ($p > 0.05$) (Table 4).

Table 4: Association between demographic variables and self-treatment using digital health information and AI-assisted platforms

Variable	Category	Self-treatment n (%)	No self-treatment n (%)	PR	95% CI	p value
Age	21–30	15 (26.8)	41 (73.2)	5.06	0.69–37.8	0.06
	31–50	1 (5.3)	18 (94.7)	Reference	—	
Gender	Female	3 (12.5)	21 (87.5)	0.49	0.16–1.50	0.24
	Male	13 (25.5)	38 (74.5)	Reference	—	
Education	PG or above	3 (15.0)	17 (85.0)	0.64	0.21–1.91	0.53
	UG	13 (23.6)	42 (76.4)	Reference	—	
Experience	0–5 yrs	12 (24.0)	38 (76.0)	2.64	0.36–19.2	0.55
	6–10 yrs	3 (21.4)	11 (78.6)	Reference	—	
	>10 yrs	1 (9.1)	10 (90.9)	0.42	0.05–3.25	
Doctor in family	No	8 (20.0)	32 (80.0)	0.87	0.33–2.28	0.79
	Yes	8 (22.9)	27 (77.1)	Reference	—	

As shown in Table 4, the prevalence of self-treatment using digital health information and AI-assisted platforms was higher among participants aged 21–30 years (26.8%) compared with older participants. Self-treatment was also slightly more common among males (25.5%) compared to females (12.5%). However, no statistically significant association was observed between demographic variables and self-treatment practices ($p > 0.05$).

DISCUSSION

The present study assessed the practices of self-diagnosis and self-treatment using digital health information and AI-assisted platforms among software employees. A considerable proportion of participants reported using digital sources for interpreting symptoms and guiding health-related decisions, reflecting the increasing integration of digital technologies into routine health-seeking behaviour. In the present study, the prevalence of self-diagnosis was 58.7%, indicating that more than half of the participants relied on digital health information and AI-assisted platforms for identifying their health conditions. Similar patterns of digital health information usage have been reported in studies on eHealth behaviour and digital public health, where individuals actively seek online information prior to professional consultation [1,2]. The concept of “e-patients” further explains this behaviour, wherein individuals use digital platforms to participate in their own healthcare decisions [3].

The prevalence of self-treatment was 21.3%, which is comparatively lower than that reported in earlier studies on self-medication. Self-medication, defined as the use of medicines without professional consultation, has been widely documented in both developing and developed settings [4]. Although self-care practices may be acceptable for minor ailments, inappropriate use of medicines is associated with adverse outcomes such as drug reactions and antimicrobial resistance [5,6]. A large

proportion of participants reported searching for health-related information when experiencing symptoms. This finding is consistent with previous studies indicating that digital platforms are often used as the first source of health information before seeking medical care [7,8]. While such practices may improve awareness, they may also lead to misinterpretation of symptoms due to lack of clinical knowledge.

The present study also observed that a notable proportion of participants searched for drug-related information online, and some reported adverse drug reactions. These findings are in line with earlier research suggesting that individuals may initiate or modify treatment based on digital information, which may not always be reliable or evidence-based [9,10]. Anxiety-related responses associated with digital health information were also observed. A proportion of participants reported experiencing panic after reading about serious conditions online. This behaviour is consistent with the concept of cyberchondria, where repeated searching of health information leads to increased anxiety [11]. Similar findings have been reported in Indian studies, where individuals experienced confusion and psychological distress following exposure to online health information [12,13].

The increasing availability of AI-assisted health platforms and digital symptom checkers has further influenced self-diagnosis practices. These tools provide preliminary guidance based on symptom input; however, studies have reported variability in their diagnostic accuracy [14]. In India, the expansion of telemedicine and digital health services, particularly during the COVID-19 pandemic, has increased the utilisation of such platforms [15,16]. No statistically significant association was observed between socio-demographic variables and self-diagnosis or self-treatment practices in the present study. Similar findings have been reported in studies on eHealth literacy and digital health utilisation, where demographic characteristics were not

found to be strong determinants of digital health behaviour [17,18].

A majority of participants reported preference for consulting a doctor despite using digital health platforms. Previous studies have also shown that individuals use digital platforms primarily for preliminary understanding and continue to rely on healthcare professionals for confirmation and management [19]. The relatively lower prevalence of self-treatment observed in the present study compared to some earlier studies may be influenced by increased awareness regarding risks associated with self-medication and improved access to healthcare services among the study population [20]. The occupational background of participants, characterised by higher education and digital exposure, may also influence cautious health-related decision making. The observed patterns of digital health information use and AI-assisted platform utilisation reflect the changing dynamics of health-seeking behaviour, influenced by accessibility, convenience, and technological advancement [21].

CONCLUSION

The present study demonstrates that a considerable proportion of software employees utilise digital health information and AI-assisted platforms for self-diagnosis, with a relatively smaller yet notable proportion engaging in self-treatment practices. While digital platforms are frequently used for initial understanding of symptoms and health conditions, most participants continue to rely on qualified healthcare professionals for final decision-making. The findings highlight that digital health technologies are increasingly influencing health-seeking behaviour among technologically literate populations. At the same time, the occurrence of anxiety related to online information and instances of self-medication indicate the need for cautious use of such platforms. Strengthening digital health literacy, promoting critical appraisal of online health information, and ensuring

responsible use of AI-assisted tools are essential to minimise potential risks associated with unsupervised health decision-making.

Limitations

The study had a relatively small sample size, partly due to a high non-response rate, which may have reduced the precision of the estimates and limited the ability to detect statistically significant associations. The use of non-random sampling may have introduced selection bias and limits the generalizability of the findings. In addition, self-reported information on self-diagnosis, self-treatment and adverse drug reactions may be subject to recall and reporting bias.

Declaration

Ethical Approval: Approved

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