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Original Research

How social media influencers shape medical and health product purchases: A Cross-sectional analysis

Farah Kais Alhomoud

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Abstract

Background: Social media influencers significantly influence health-related consumer behavior in Saudi Arabia, driving engagement with wellness products while raising concerns about misinformation and safety. Identifying the factors that motivate such purchases is crucial for guiding policy and public awareness. **Objectives:** This study aimed to assess the prevalence, determinants, and perceived risks of purchasing health-related products promoted by social media influencers among adults in Saudi Arabia, and to identify the main predictors influencing buying behavior. **Methods:** A cross-sectional online survey was conducted between January and April 2025 among Saudi adults aged ≥ 18 years using convenience and snowball sampling via WhatsApp. Data were analyzed with IBM SPSS v28. Descriptive statistics summarized participant data, while Chi-square and logistic regression analyses identified significant associations and predictors of purchasing behavior ($p \leq 0.05$). **Results:** The sample (n = 244) consisted predominantly of young adults aged 18–35 years (n = 179; 73.4%) and females (n = 173; 70.9%). Instagram (n = 84, 34.6%) and TikTok (n = 79, 32.5%) were the most frequently used purchasing platforms. The most influential factors were lower cost and discounts (n = 173; 71%; p = 0.006), convenience over pharmacies (n = 146; 60%; p = 0.002), and greater product variety (n = 152; 62%; p = 0.011). Logistic regression showed that participants motivated by affordability were 2.8 times more likely to purchase via social media (OR = 2.80; 95% CI: 1.24–6.33; p = 0.013), and those valuing variety were 2.5 times more likely (OR = 2.55; 95% CI: 1.03–6.29; p = 0.042). Although 63 (26%) expressed concern about unsafe products, 109 (45%) about limited information, and 110 (45%) about unverified sources, these factors did not significantly reduce purchasing intent. **Conclusions:** Health product purchasing via social media in Saudi Arabia is widespread and primarily driven by affordability, convenience, and variety, rather than demographics or perceived risk. Despite moderate safety concerns, consumers remain highly engaged. Enhanced regulatory oversight, transparent influencer marketing, and targeted digital health literacy initiatives are essential to ensure safer, evidence-based online health consumption.

Keywords: Social Media, Health Products, Influencers, Consumer Behavior, Perception, Saudi Arabia

INTRODUCTION

Social-media influencers have transformed consumer marketing by cultivating authentic relationships with their followers, thereby enabling brands to engage audiences in more personal and trust-based ways. This phenomenon is increasingly influential in healthcare, where reputation and credibility are foundational. In the pharmaceutical and medical-device spheres, influencer marketing leverages the reach and perceived authenticity of individuals to both promote products and educate patients[1,2].

Within healthcare, influencers who maintain a strong digital presence often function as perceived credible sources of information. Research suggests that trustworthiness and relatability contribute to the marketing effectiveness of influencers, with many consumers responding more favorably to them than to conventional advertising[3,4]. For example, Boehringer Ingelheim's "Create Your Change" campaign engaged diabetes-focused influencers and achieved over 22 million impressions, empowering patients to adopt healthier behaviors[1]. By translating medical information into more accessible formats, influencers are playing a growing role in patient education, awareness raising, and brand promotion as social media platforms become significant sources of health and medication-related advice. However, the use of influencer marketing in healthcare is not without its challenges. Ethical concerns arise when influencers fail to disclose paid partnerships or exaggerate the benefits of medical products, posing risks of misrepresentation and consumer harm[3-6]. Influencers must balance promotional aims with accurate representation of both benefits and risks, and the preservation of informed consumer decision-making remains a critical issue. More broadly, reviews of influencer marketing in healthcare suggest that the evidence for positive health-outcome effects remains limited, and further regulatory and ethical frameworks are required to guide this practice[7-9].

In the Kingdom of Saudi Arabia (KSA), social media influencers have become significant agents in shaping consumer behavior in the health sector. Platforms such as YouTube are documented as playing a pivotal role in influencing health attitudes among Saudi residents[10]. This influence is amplified by the Kingdom's very high internet penetration rate (99% of the population actively online)[11]. Nonetheless, the proliferation of unverified claims or endorsements of unregulated medical products by influencers also poses serious public health risks[8,9].

Given these dynamics, this study examines the influence of social media influencers on purchasing decisions for health-related products and medical devices in Saudi Arabia.

Farah Kais Alhomoud*. Department of Pharmacy Practice, College of Pharmacy, Imam Abdulrahman Bin Faisal University, Dammam, the Kingdom of Saudi Arabia.
fkalhomoud@iau.edu.sa

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Specifically, it aims to identify the key determinants of consumer preference and behaviour, while also examining perceived risks associated with such purchasing. The findings aim to generate recommendations for regulatory authorities, emphasising the necessity of robust frameworks to monitor and guide influencer activity. Such measures are crucial for safeguarding consumers and promoting informed decision-making in the evolving digital health ecosystem of the KSA.

MATERIALS AND METHODS

Study Setting, Recruitment, and Data Collection

This cross-sectional study was conducted between January 2025 and April 2025, targeting Saudi residents aged 18 years and above who use social media platforms at least once a week. Recruitment was done using convenience and snowball sampling methods, primarily through WhatsApp Messenger. The survey was disseminated online, ensuring anonymity and convenience for participants. An information page detailing the study purpose, target participants, and inclusion criteria is attached to the survey, and informed consent was obtained through a click-wrap agreement. This approach aimed to maximize engagement and response rates while maintaining ethical standards.

Sample Size

A distribution of the online survey (n = 523 accesses) indicated that 55% (286/523) of respondents reported using social media platforms to purchase health-related products. Based on this proportion (p = 0.55), a 95% confidence level (Z = 1.96), and a 5% margin of error (d = 0.05), the required sample size was calculated using the single-proportion formula[12]:

This yielded a minimum required sample size of 381 participants. A total of 244 participants completed the survey, corresponding to an estimated margin of error of approximately ±6% at the 95% confidence level. The final sample size was therefore considered acceptable for exploration analysis.

Study Instrument

The questionnaire was designed following an extensive review of published literature to address the study constructs and objectives[3,4,6,7,9,10,13,14]. Two academic pharmacists with expertise in pharmacy practice and survey design independently reviewed the initial draft to evaluate the clarity, content relevance, and alignment with the research aims. Their feedback guided refinements that improved the logical flow, question structure, and readability of the instrument. The reliability analysis indicated that while the Factors Influencing Risks domain achieved an acceptable level of internal consistency ($\alpha = 0.70$), the Factors Shaping Consumer Behavior domain demonstrated moderate reliability ($\alpha = 0.50$). The final questionnaire included four key sections: (1) sociodemographic information (age, gender, region, education, income); (2) social media usage patterns (platforms, frequency, exposure to influencers); (3) consumer behaviour factors (cost, convenience, product variety); and (4) perceived risks related to product safety and quality. These sections were designed to capture participants' characteristics, online engagement, purchasing motivations, and risk perceptions.

Ethics and Dissemination

This study received ethical clearance from the Institutional Review Board of Imam Abdulrahman Bin Faisal University (approval number: IRB-2025-05-0035) on January 19, 2025. Data collection was conducted through the QuestionPro online platform, where participants provided electronic consent using a click-to-agree format before beginning the survey. To maintain privacy, no personal or identifying details were requested, and all responses were anonymized automatically upon submission. Each participant was issued a unique barcode to ensure secure and exclusive access to the survey. Informed consent was obtained from all participants, confirming compliance with ethical requirements and the protection of their rights throughout the study. All information was stored on password-secured devices, with access limited to the research team, in accordance with the ethical and data protection policies of Imam Abdulrahman Bin Faisal University. Furthermore, the study was conducted in accordance with the ethical standards outlined in the Declaration of Helsinki.

Data processing and Analysis

Quantitative data analysis was performed using IBM SPSS Statistics version 28. Descriptive statistics, including frequencies and percentages, were used to summarize participants' demographic characteristics, social-media usage patterns, and purchasing behaviors. Chi-square tests were conducted to examine the associations between participants' demographic characteristics, including age, gender, region of residence, living area, education level, employment status, and monthly income, and their social media purchasing behavior, to examine associations between categorical variables. In addition, Cramer's V was calculated to measure the effect size and determine the strength of associations observed in the Chi-square analyses (values 0.1–0.2 = small, 0.2–0.4 = moderate, > 0.4 = strong). All analyses were two-tailed, with statistical significance set at $p \leq 0.05$. A binary logistic regression analysis was performed to identify predictors of purchasing health-related products through social media. The dependent variable was whether participants reported using social media to buy health or medical products (Yes = 1, No = 0). Independent variables included participants' demographic characteristics (age, gender, education level, employment status, and income), as well as several behavioral and perceptual factors, such as lower costs and discounts, convenience over pharmacies, product availability, product variety, and perceived adequacy of information provided by influencers. All variables were entered simultaneously using the Enter method, with statistical significance set at $p \leq 0.05$.

RESULTS, FINDINGS AND IMPLICATIONS

At the outset of our study, we aimed to assess the prevalence of using social media platforms to purchase medical products. Participants who started filling out the survey (n = 523) were first asked whether they use social media for this purpose.

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Among them, 286 respondents (54.7%) answered "Yes," while 237 answered "No" and were therefore automatically excluded from the subsequent sections. Of the 286 participants who reported using social media to purchase medical products, 244 completed all required questions, yielding an overall response rate of 86%.

Participant Demographics and Associations with Social-Media Purchasing

The sample of 244 participants was predominantly composed of young adults aged 18–35 years (n = 179; 73.4%) and female participants (n = 173; 70.9%). A large proportion of respondents were university graduates (n = 154; 63.1%) and unemployed (n = 151; 61.9%). No statistically significant relationships were detected between demographics and social media purchasing ($p > 0.05$) (Table 1). Chi-square analyses were performed for all demographic variables (age, gender, region, living area, education, employment status, and income) to determine whether these characteristics were associated with social media purchasing behavior.

Social-Media Practices and Influencer Engagement

The results showed that Instagram (34.6%) and TikTok (32.5%) were the most frequently used platforms for purchasing health-related products through social media. In contrast, Facebook (1.6%) was the least used platform, followed by WhatsApp (4.5%) and YouTube (7.4%).

In terms of purchasing frequency, 133 participants (54.7%) reported buying products through social media "sometimes." More than half of the respondents (n = 135; 55.6%) followed influencers who directly influenced their purchasing decisions. The most influential categories of influencers were public figures (n = 54; 22.2%), sports personalities (n = 54; 22.2%), and food influencers (n = 50; 20.6%). A total of 136 participants (56.0%) reported making their most recent influencer-driven purchase within the past six months (Table 2).

Participants were asked two multiple-choice questions and were allowed to select more than one option; therefore, the total percentages exceeded 100%. The first question addressed the type of products purchased, offering the following options:

Table 1. Participant Demographics and Association with Social-Media Purchase Behavior (N = 244)

Variable	Category	Numbers (n)	Percentages (%)	χ^2 (p-value)
Age	18–35 years	179	73.4	0.045
	36–53 years	47	19.3	-0.978
	≥ 54 years	18	7.4	
Gender	Female	173	70.9	0.423
	Male	71	29.1	-0.515
Region of residence	Eastern	206	84.4	1.056
	Central	25	10.2	-0.901
	Southern	6	2.5	
	Western	5	2	
	Northern	2	0.8	
Living area	Urban	231	94.7	0.097
	Rural	13	5.3	-0.755
Education level	University degree	154	63.1	3.259
	High school or less	46	18.9	-0.196
	Postgraduate studies	44	18	
Employment status	Unemployed	151	61.9	0.889
	Employed	93	38.1	-0.346
Monthly income	< USD 1,500	126	51.6	0.686
	USD 1,500–4,000	61	25	-0.709
	> USD 4,000	57	23.4	

Note: χ^2 = Chi-square test statistic

p-value = probability value (significant if ≤ 0.05).

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Table 2. Social-Media Practices, Influencer Impact, Products Purchased, and Advertisement Influence

Variable	Category / Item	Numbers (n)	Percentages (%)
Primary platform used	Instagram	84	34.6
	TikTok	79	32.5
	Snapchat	27	11.1
	Twitter (X)	20	8.2
	YouTube	18	7.4
	WhatsApp	11	4.5
	Facebook	4	1.6
Frequency of use for purchasing	Sometimes	133	54.7
	Rarely	86	35.4
	Always	24	9.9
Follow influencers who influenced purchase	Yes	135	55.6
	No	108	44.4
Most influential type of influencer	Public figures	54	22.2
	Sports	54	22.2
	Food	50	20.6
	Fashion	45	18.5
	Thought leaders	24	9.9
	Travel	7	2.9
	Rights activists	3	1.2
	Automotive	3	1.2
	Artistic	2	0.8
	Handicraft	1	0.4
Last purchase due to influencer	≤ 6 months ago	136	56
	> 6 months ago	107	44

Skincare / dermatological products, Vitamins & supplements, Herbal/alternative medicines, Fitness/wellness devices, OTC medications, Personal protective equipment, and Medical devices. Among these, skincare and dermatological products (69.3%) and vitamins and supplements (60.2%) were the most commonly purchased, while personal protective equipment (10.7%) and medical devices (9.0%) were the least selected.

The second question explored the influence of advertisements, with options including: Searched for more information, Purchased the same product/device, Discussed with others, Saved the advertisement, Recommended to others, and Followed the influencer or brand. The most common actions reported were searching for more information (67.6%) and purchasing the same product (49.6%), followed by discussing the advertisement (35.7%), saving it (31.6%), recommending it to others (12.3%), and following the influencer or brand (9.4%).

Factors Shaping Consumer Behavior

Three factors showed statistically significant associations ($p < 0.05$) with participants' purchasing behavior. Lower cost and discounts were reported as influential by 173 participants (71%), while 51 (21%) were neutral and 20 (8%) disagreed ($p = 0.006$, Cramer's $V = 0.20$). A total of 146 participants (60%) agreed that convenience over pharmacies motivated their purchases, compared with 69 (28%) who were neutral and 29 (12%) who disagreed ($p = 0.002$, Cramer's $V = 0.23$). Similarly, a wider variety of products was considered an important factor by 152 participants (62%), while 70 (29%) were neutral and 22 (9%) disagreed ($p = 0.011$, Cramer's $V = 0.19$). Other factors, including unavailability in local markets (n = 133; 55%) and the perception that influencers provide more information than pharmacists (n = 95; 39%), were not statistically significant ($p > 0.05$) (Table 3).

Factors Influencing Perceived Risk

Concerns that products may be unsafe were expressed by 63 participants (26%), while 148 (61%) were neutral and 33 (13%) disagreed ($p = 0.001$, Cramer's $V = 0.24$). Perceptions of low product quality were reported by 66 participants (27%), while 113 (46%) remained neutral and 65 (26%) disagreed ($p = 0.019$, Cramer's $V = 0.18$). A lack of adequate information was identified by 109 participants (45%), while 93 (38%) were neutral and 42 (17%) disagreed ($p = 0.009$, Cramer's $V = 0.21$). Similarly, purchases from unverified sources were acknowledged by 110 participants (45%), compared with 83 (34%) who were neutral and 51 (21%) who disagreed ($p = 0.012$, Cramer's $V = 0.19$). A larger proportion, 195 participants (80%), agreed that

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influencer-promoted products may cause adverse reactions, although this association was not statistically significant (p = 0.15). Overall, effect sizes across the risk variables (Cramer's V = 0.18–0.24) indicate a moderate association between perceived risk and purchasing behavior (Table 4).

Predictors of Social-Media-Based Purchasing Behavior

The overall model was not statistically significant ($\chi^2(17) = 18.544$, p = 0.355), indicating that the combined predictors did not significantly improve the prediction of purchasing behavior compared to the constant-only model. The model explained approximately 20.6% of the variance in purchasing behavior (Nagelkerke $R^2 = 0.206$) and demonstrated good fit according to the Hosmer–Lemeshow test ($\chi^2(8) = 7.337$, p = 0.501).

The logistic regression model identified two significant predictors of social-media-based purchasing behavior. Participants who reported that lower cost and promotional discounts influenced their decisions had nearly three times higher odds of purchasing health products through social media (OR = 2.80, 95% CI: 1.24–6.33, p = 0.013). Similarly, those who valued a wider variety of products exhibited more than double the odds of purchasing via social platforms (OR = 2.55, 95% CI: 1.03–6.29, p = 0.042). All other parameters were not statistically significant predictors (p > 0.05) (Table 5).

Other demographic and perceptual variables, such as convenience, perceived safety, or the amount of information provided by influencers, were not statistically significant (p > 0.05). The model correctly classified 94.7% of cases, mainly due to the imbalance in the distribution of participants who reported using and not using social media for purchasing health-related products.

Table 3. Factors Shaping Consumer Behavior (N=244)

Statement	Agree	Neutral	Disagree	χ^2	Cramer's V
	n (%)	n (%)	n (%)	(p-value)	
Lower cost and discounts	173 (71%)	51 (21%)	20 (8%)	10.18 (0.006)	0.2
Unavailability in local markets	133 (55%)	68(28%)	43 (17%)	3.42 -0.18	0.12
Convenience over pharmacies	146 (60%)	69 (28%)	29 (12%)	12.37 (0.002)	0.23
More information than pharmacists	95 (39%)	87 (36%)	62 (25%)	1.82 -0.32	0.09
Wider variety of products	152 (62%)	70 (29%)	22 (9%)	9.05 (0.011)	0.19
Note: χ^2 = Chi-square test statistic					
p-value = probability value					
Cramer's V = measure of effect size					

Table 4. Factors Influencing Perceived Risk (N=244)

Statement	Agree	Neutral	Disagree	χ^2	Cramer's V
	n (%)	n (%)	n (%)	(p-value)	
Products may be unsafe	63 (26%)	148 (61%)	33 (13%)	14.06 (0.001)	0.24
Low-quality products	66 (27%)	113 (46%)	65 (26%)	7.88 -0.019	0.18
Limited information available	109 (45%)	93 (38%)	42 (17%)	11.43 (0.009)	0.21
Risk of adverse reactions	195 (80%)	33 (14%)	16 (6%)	3.76 -0.15	0.12
Purchased from unverified sources	110 (45%)	83 (34%)	51 (21%)	8.91 -0.012	0.19
Note: χ^2 = Chi-square test statistic					
p-value = probability value					
Cramer's V = measure of effect size					

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Table 5. Binary Logistic Regression Predicting Social-Media-Based Purchasing Behavior (N = 244)

Predictor		p-value	OR	95% CI for OR
Demographics	Age	0.361	1.7	0.55 – 5.28
	Gender	0.634	1.47	0.30 – 7.12
	Education	0.771	0.86	0.31 – 2.37
	Employment	0.433	2.68	0.23 – 31.67
	Income	0.634	0.73	0.20 – 2.64
Perceived benefits	Lower cost & discounts	**0.013**	**2.8**	**1.24 – 6.33**
	Unavailability	0.236	0.56	0.21 – 1.46
	Convenience	0.145	0.31	0.07 – 1.50
	More information	0.622	1.23	0.53 – 2.87
	Product variety	**0.042**	**2.55**	**1.03 – 6.29**
Perceived risks	Safety concerns	0.842	0.87	0.22 – 3.51
	Low quality concerns	0.476	0.66	0.21 – 2.09
	Limited information	0.626	1.27	0.48 – 3.35
	Adverse reactions	0.156	2.22	0.74 – 6.68
	Unverified sources	0.521	1.31	0.57 – 3.03

p-value: Indicates whether the predictor is statistically significant (significant if $p < 0.05$).

OR: Odds Ratio. Values greater than 1 indicate increased odds of purchasing health products via social media; values less than 1 indicate decreased odds.

95% CI for OR: 95% Confidence Interval for the Odds Ratio. Significance is confirmed when the CI does not include 1.

DISCUSSION

The demographic profile of this study, mainly young, female, and university-educated participants, reflects the population most engaged in digital wellness and beauty markets in Saudi Arabia, consistent with Aljunaid et al. (2024), AlWatban et al. (2024), and Powell and Pring (2024)[6,10]. Despite a majority being unemployed, this group represents an active online consumer segment driven by affordability and self-care motivations. The absence of significant demographic associations ($p > 0.05$) suggests that purchasing medical or wellness products via social media has become a mainstream behavior cutting across age, gender, and income, echoing findings by Buglyó-Nyakas and Gál (2025) and Krisam and Altendorfer (2023)[7,9]. These results indicate that trust in influencers and perceived convenience, rather than demographic factors, are the key forces shaping social-media-based health purchasing in Saudi Arabia.

The findings indicate that Instagram and TikTok are the dominant platforms driving health-related product purchases in Saudi Arabia, consistent with Aljunaid et al. (2024)[10], who found that these platforms are the most influential in shaping digital health behaviors. The predominance of these visually oriented, influencer-driven platforms reflects a global trend noted by Powell and Pring (2024), Krisam and Altendorfer (2023) and Capriotti and Zeler (2024)[6,7,16], where credibility and engagement are increasingly valued over traditional marketing channels. The fact that more than half of the participants followed influencers and made purchases within six months underscores the rapid conversion power of influencer content in health-related marketing. Moreover, the popularity of skincare and supplement products mirrors international findings that wellness and beauty items dominate influencer-promoted health markets[9]. The observation that most participants searched for additional information after seeing ads suggests a growing consumer awareness and cautious engagement, aligning with calls by Miller and Goyal (2022) and Zengin (2023) for transparent[3,13], evidence-based influencer communication. Collectively, these results highlight that social media purchasing of health products in Saudi Arabia is both highly visual, influencer-driven, and increasingly informed, reflecting an evolution toward a digitally empowered yet discerning consumer base[17].

While the dominance of visually driven platforms such as Instagram and TikTok mirrors global patterns[3,6,11,14], the strength of this trend is notably amplified in Saudi Arabia due to its exceptionally high social media penetration and the cultural prominence of influencer-driven wellness and beauty content. This creates a more concentrated and rapid pathway from exposure to purchase compared with many Western markets.

The findings reveal that affordability, convenience, and product variety were the main drivers influencing consumers' social media purchasing behavior. Lower costs and promotional discounts emerged as the most influential factor, reflecting the price sensitivity observed in global digital health markets[7,9,18]. Similarly, convenience over traditional pharmacies underscores consumers' preference for accessibility and time efficiency, an outcome consistent with Aljunaid et al. (2024) and Alanezi et al. (2024)[10,19], who reported that ease of online transactions is a key determinant of engagement in Saudi Arabia's digital health sphere. The emphasis on a wider variety of products mirrors findings by Powell and Pring (2024)[6], suggesting that

consumers perceive online platforms as offering greater choice and personalization than physical outlets. Conversely, the non-significant influence of factors such as product unavailability or the perceived informational advantage of influencers over pharmacists implies that functional benefits, rather than informational trust, primarily motivate purchases. Overall, these results reinforce global evidence that online health-product purchasing is primarily shaped by economic and practical incentives rather than professional guidance, signaling a shift toward convenience-driven consumerism in Saudi Arabia's evolving e-health marketplace.

Although affordability and convenience are widely acknowledged as key drivers of online health-product purchasing globally[3,6,14], their influence appears particularly pronounced in the Saudi context. Saudi Arabia's younger, digitally active population relies heavily on social media as a primary channel for discovering and buying health-related products, which amplifies these effects[10]. The strong preference for skincare and supplement products observed in this study also reflects patterns reported in influencer-driven markets[4]. In contrast, international trends often show a greater emphasis on medical devices and fitness wearables within digital health commerce, highlighting distinct regional differences in consumer priorities[6].

The findings indicate that product safety, quality, and information transparency were the primary dimensions shaping participants' perceived risk toward influencer-promoted health products. Although most participants remained neutral, a substantial proportion expressed concern about product safety and limited information availability, with moderate associations observed (Cramer's V = 0.18–0.24). These results align with the concerns highlighted by Miller and Goyal (2022) and Zengin (2023)[3,13], who emphasized the ethical risks of misinformation and inadequate disclosure in influencer marketing[20]. The recognition of unverified purchasing sources further supports Powell and Pring's (2024) and Wang et al. (2023) observation that unregulated online promotions increase consumers' uncertainty about product authenticity and safety[6,21]. Despite 80% acknowledging that influencer-endorsed products could cause adverse reactions, the lack of statistical significance suggests that awareness does not necessarily deter purchasing, an effect also noted by Kaňková et al. (2024) in their study on health influencer advice[8]. Overall, these results underscore that risk perception is growing but not yet behavior-limiting, reflecting a global trend in which consumers are aware of potential harms, but continue to engage with influence-promoted health products due to convenience, trust, and perceived social validation[22,23].

Despite participants expressing concerns about product safety, quality, limited information, and unverified sources, these risks did not significantly impact purchasing behavior, reflecting a well-documented phenomenon known as the risk paradox[24]. This paradox describes the tendency for consumers to continue engaging in potentially harmful or uncertain behaviors despite being aware of the associated risks. In the context of digital health purchases, several mechanisms may explain this pattern. First, consumers often experience optimism bias, assuming that negative consequences are unlikely to affect them personally, which reduces the behavioral impact of risk awareness. Second, affective and social drivers, such as trust in influencers, perceived authenticity, and the desire to align with social trends, can override cognitive risk evaluations. Third, convenience and economic incentives (e.g., discounts, ease of access, and product variety) act as immediate rewards that outweigh more abstract or distant concerns about harm. Finally, prior positive experiences with influencer-promoted products may reinforce habitual purchasing, further weakening the influence of risk perceptions. Together, these factors illustrate why risk awareness alone is insufficient to deter purchasing, highlighting the need for stronger regulatory messaging, more transparent product safety communication, and digital health literacy initiatives to bridge the gap between knowledge and behavior.

Strengths and limitations

While this study offers valuable insights into the influence of social media influencers on health-related purchasing behavior in Saudi Arabia, several limitations must be acknowledged. The cross-sectional design restricts the ability to infer causal relationships between exposure to influencers and purchasing outcomes. Additionally, self-reported data may be subject to recall bias or social desirability bias, which can lead to underreporting or overreporting of attitudes and behaviors. The use of convenience and snowball sampling, primarily through WhatsApp and other social media platforms, may have introduced selection bias, favored younger, digitally active individuals and limited generalizability to older or less tech-savvy populations. The moderate internal consistency of some questionnaire domains (e.g., $\alpha = 0.50$ for factors shaping consumer behavior) also suggests that future refinements to the instrument are needed to enhance reliability. Finally, the study focused exclusively on consumer perspectives, including the views of pharmacists, healthcare professionals, and regulatory authorities could have provided a more holistic understanding of influencer marketing's impact on health behavior and policy.

Recommendations

Building on these findings, several recommendations can guide future research and policy development.

- **Regulatory oversight:** Authorities such as the Saudi Food and Drug Authority (SFDA) and the Ministry of Health should establish clear guidelines for ethical and disclosure practices in health-related influencer marketing to ensure transparency, accuracy, and accountability.
- **The Saudi Food and Drug Authority (SFDA)-approved codes of conduct**: SFDA-approved codes of conduct for health influencers should be developed to ensure ethical promotion, transparent disclosure of paid partnerships, and accurate communication of product claims.
- **Consumer education:** Public awareness campaigns should emphasize critical appraisal of online health information and the risks associated with purchasing from unverified

sources.

- **Mandatory disclosure:** Influencers should be required to clearly disclose paid partnerships and provide accurate risk information for all health-related content, ensuring transparency and supporting informed consumer decision-making.
- **Professional verification:** Social media platforms should implement official verification badges for licensed healthcare professionals who post medical advice, ensuring that consumers can easily distinguish credible medical content from unverified sources.
- **Collaboration with healthcare professionals:** Encouraging partnerships between influencers and qualified pharmacists or health experts could improve the reliability of shared content and foster informed consumer decisions.
- **Methodological improvements:** Future studies should employ probability-based sampling across multiple regions and include mixed-methods approaches (quantitative and qualitative) to explore motivations and trust dynamics more deeply.
- **Digital literacy initiatives:** Integrating digital health literacy into community education programs, particularly targeting young adults, can empower consumers to distinguish between credible sources and misleading promotions.
- **Longitudinal research:** Conducting follow-up or cohort studies would help determine how perceptions, risks, and behaviors evolve in response to regulatory changes or social trends.

Overall, strengthening governance, promoting transparency, and enhancing consumer awareness will be crucial to strike a balance between innovation in digital marketing and the ethical and safe promotion of health products in Saudi Arabia's rapidly expanding e-health landscape.

CONCLUSION

This study highlights the increasing influence of social media influencers on shaping health-related purchasing behavior in Saudi Arabia. Instagram and TikTok emerged as dominant platforms where affordability, convenience, and product variety were key motivators for consumer engagement. Although concerns regarding product safety, quality, and misinformation were evident, these risks did not significantly deter purchasing behavior. Overall, the findings suggest that social media health marketing in Saudi Arabia is evolving into a mainstream, convenience-driven practice that balances trust and accessibility, yet still requires stronger ethical oversight and regulatory guidance to protect consumers and promote informed decision-making.

AUTHOR CONTRIBUTION

The author conceived and designed the study independently, developed the search strategy, performed the database searches, screened and analyzed the data, interpreted the findings, and drafted and approved the final manuscript.

CONFLICTS OF INTEREST

The author declares that there are no conflicts of interest.

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