Behavioral Responses to Health Anxiety in Different Populations Were Analyzed Based on Social Media Platform Data

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Abstract: As an emerging field of social media platforms in recent years, the public has been paying more and more attention to their health issues, and at the same time, the problems of distorted information, varying quality of information, and public health anxiety have emerged one after another. Based on the questionnaire on "public's behavior towards obtaining health information on the internet" designed in this study, statistical correlation analysis and regression analysis were used to obtain the behavioral characteristics of social media users, and it was found that the negative emotions triggered by the public's access to the health information on the Internet tended to correlate significantly with the topic of the information they were concerned about, the type of publisher, and the subsequent behavior of the users after they had accessed the information and that the users' different demographic and behavioral characteristics correlated significantly with their behavioral characteristics before and after accessing the health information. This study suggests that these user behavioral characteristics are significantly related to the topic of the information, the publisher type, and the subsequent behavior after accessing the information. This study suggests that these user behavioral characteristics are important for social media managers to develop more.

1 INTRODUCTION

With the rapid development of science and technology and the continuous change of society, social media has gradually integrated into people's daily lives and become the main channel of information dissemination and social interaction. In this digital era, social media not only influences the way people communicate but also affects people's knowledge, concerns, and behaviors about health and fitness to a great extent. Globally, health and fitness are highly valued, not only in terms of individual quality of life but also in the overall health of the country and the sustainable development of society ("14th Five-Year" National Health Plan 2022). In 2022, the General Office of the State Council issued the "*14th Five-Year Plan for National Health*", making the popularisation of health knowledge, participation in health activities, and provision of health services key tasks in the future to promote the construction of "Healthy China" (American Psychiatric Association 2013). As an important health resource, health information plays an important role in improving citizens' health literacy

and promoting public health. Social media, as an emerging platform for information dissemination, has attracted attention in the health field due to its unique characteristics and wide audience. In the past, the promotion of health information mainly relied on traditional publicity channels, such as television, radio, and print media (Jourard and Lasakow 1958). However, with the rise of social media, the way to promote health information has been revolutionized. People can use social media platforms to popularise health-related knowledge, share health-related experiences, and search for relevant professional information.

According to the 2022 National Health Insight Report, the epidemic brought about a rapid increase in health literacy of 23%, which shows that the public's health awareness is increasing nowadays, and they pay more and more attention to their health status (Lebel et al 2020). However, while social media disseminates a large amount of health information, information of varying quality has emerged in large quantities, triggering problems such as distorted information and users' inability to accurately judge the information. At the same time, the public's

excessive concern for health and reduced tolerance for disease have led to an increasing prevalence of health anxiety. "Health anxiety refers to the worry and concern about one's health status, which is manifested in the preconceived notion of having a serious disease and excessive health-related behaviors in the absence of physical symptoms" (Bayrak 2020).

The purpose of this paper is to explore in depth the behavioral characteristics of public access to health information in the social media era and analyze its correlation with health anxiety. Taking TicTok, Xiaohongshu, and Weibo as the data collection platforms and their main user groups - youth and middle-aged groups - as an example, this paper adopts statistical research methods to explore the influencing factors of the behavioral characteristics of the public's access to health information and health anxiety and puts forward corresponding countermeasures and suggestions for mitigating the problem of health anxiety triggered by the social media platforms, and at the same time, enables the management of the social network platforms to better understand" the users' self-disclosure behaviors", to further optimizing the operation and service model (Landi et al 2020).

2 METHODOLOGIES

2.1 Research Method

The questionnaire "Survey on the Behaviour of Users in Obtaining Health Information" was developed in conjunction with the actual survey. The questionnaire includes the following four parts: First, demographics: including gender, age, education, spousal status, geography, family income, 6 topics. Second, the frequency and motivation of acquiring online health information: the frequency was divided into 5 levels from low to high, and the motivation was mainly application motivation. Third, the content tendency of acquiring online health information: the information content classification includes medical disease-related prevention and treatment, health care, fitness and healthy weight loss, and mental health, and the information type includes graphic information and video information. Fourth, the subsequent behaviour of acquiring online health information, including how the information is processed after reading, the application behaviour, and whether it is too much to produce health anxiety (Nikčević et al 2021).

2.2 Statistical Methods

SPSS 27. 0 was used to conduct statistical analysis to descriptively analyze the demographic characteristics, health information acquisition behaviors, and emotional feedback (Axelsson et al 2020). The Spearman correlation coefficient was used to analyze the correlation between information acquisition behaviors and users' demographic characteristics, the cross-tabular chi-square test was used to test the correlation between the tendency to acquire information content and whether or not to overproduce health anxiety, the subsequent behaviors of acquiring information and whether or not to overproduce health anxiety, and the correlation between the users' behaviors were analysed by Pearson correlation coefficient (Wheaton and Messner 2021). The factors influencing the emotional tendency produced by users were analyzed by binary logistic regression, and the regression relationship between user behaviors was examined by linear regression (Rumker et al 2020). This study was performed using a test level of $\alpha = 0.05$.

3 DATA RESULTS AND ANALYSES

3.1 Demographic Characteristics

The questionnaire was sent to 196 people and contained demographic characteristics in six latitudes: gender, age, education, spousal status, city level, and household income. The age group was divided into four age groups: 18-25, 26-35, 35-45, and 46-55 years old; education was divided into four subgroups: high school and below, undergraduate, postgraduate, and doctorate and above; and household income was divided into five income levels ranging from less than $150,000 to more than $1.05 million. The survey results show that the ratio of men to women is about 1:1, and the age of the respondents is mainly distributed between 18-25 years old and 46-55 years old, reaching 36.22% and 30.10% respectively. 56.63 percent of the respondents have attained the level of bachelor's degree. 60.71 percent of the respondents are married, and 39.29 percent of the respondents are unmarried. 60.71% of the respondents are married, 39.29% are unmarried, and 60.63% of the respondents have a bachelor's degree. 60.71% of the respondents are married. The proportion of respondents with a household income of less than 150,000 yuan was 55.10 percent, and the proportion of respondents with

a household income of 160,000-250,000 yuan was 20.41 percent.

3.2 Current Status of Online Health Information Behavior

Descriptive statistics on the frequency of access to health information, motivation, content, and user follow-up behavior of the respondents. Included among these, the Frequency of access was divided into Never, Rarely, Occasionally, Often, and Frequently.

Application motivation was divided into Access based on own needs, Substitute for others, and No access behavior. Information content was divided into Medical disease prevention and treatment, Health Care, Fitness and weight loss, and Mental health. User follow-up behavior was divided into Netroots, celebrities' recommendation behaviors, and products, Explanation of principles shared by ordinary accounts, Real-life health information works shared by ordinary accounts, and works of health bloggers. The type of information was divided into Graphic and Video. Information processing methods were divided into Like or favorite and no repeat viewing, like or favorite and will read again when needed, like or favorite or forward to people around you and there are multiple readings, only viewed and no subsequent behavior. Emotional feedback was divided into Negative (increases health anxiety) and Positive (helps health).

The results show that the frequency of their access to the most "often access" or "occasionally pay attention to ", reached 41.33% and 27.04% respectively. Access to health information according to their own needs is the main application of user access to motivation, reaching 65.82%. Health care is the most frequently accessed content, reaching 52.55%. More than half of the users will have to mark behavior for health information and read it twice. 71.43% of the users' emotional feedback presents a positive state, and 28.57% of the users' emotional feedback presents a negative state.

About the user behavior using a Likert scale way to count the distribution of different behavioral characteristics, the specific average of the user scores is shown in Table 1.

3.3 Correlation between Information Access Behavior and Demographic Characteristics

The results of Spearman correlation coefficient analysis show that users' behaviours vary according to different demographic characteristics. Among them, the user's education, family income, and the city level they belong to are all significantly positively correlated with the user's belief in the health information obtained from the Internet ($P < 0.05$), in which the more flourishing the city, the higher the degree of belief in the health information, which is analysed for the following two reasons, the first is that the Internet habits are different between different city levels, and some underdeveloped cities may not be so dependent on the Internet, so their degree of belief will be lower, and the second reason is that the developed cities are less dependent on the Internet. The second reason is that the overall acceptance of developed cities is higher, so the public will be more willing to accept some new types of information, while the acceptance of less developed cities will be lower. There is a significant positive correlation between users' education and family income and their willingness to buy the health products recommended in the work. There is no significant correlation between the users' education, family income, and the city level they belong to, and the frequency of obtaining health information, and the frequency of forwarding the information after obtaining it, and the degree of belief ($P > 0. 05$), see Table 2.

Table 1: Average distribution of user behavior characteristics.

Behavior	Mean score (Likert matrix scale)
Make relevant adjustments in lifestyle habits	2.75
Direct purchase of health products recommended in the work	3.24
Investigate further or seek professional advice on issues of interest	3.14
Frequency of forwarding health-related information obtained from social media networks to people around me.	3.16
Level of trust in health information obtained from the internet	3.99

Table 2: Formatting sections, subsections and subsubsections.

		Age	Education	City Level	Household income
Frequency of access to health information	Pearson Correlation	.070	.014	.042	.008
	Significance (two-tailed)	.329	.846	.558	.907
How often do I forward the health information I get from social media networks to the people around me?	Pearson Correlation	-.033	.002	.078	-.028
	Significance (two-tailed)	.649	.973	.279	.699
How much do I trust the health information I get from social media networks?	Pearson Correlation	-.151	.213	.176	-.196
	Significance (two-tailed)	.058	.007	.026	.013
The extent to which I have made adjustments to my lifestyle habits based on health information obtained from social media networks.	Pearson Correlation	-.080	.032	.045	-.031
	Significance (two-tailed)	.266-	.658	.530	.668
My willingness to buy the products recommended in health information works directly.	Pearson Correlation	.117	.191	.183	-.079
	Significance (two-tailed)	.102	.007	.010	.273
My willingness to conduct further research or consult a professional to find out more about a problem.	Pearson Correlation	-.039	.068	.067	-.010
	Significance (two-tailed)	.585	.347	.354	.891

3.4 Correlation Between Information Acquisition and Processing Behaviors and Health Anxiety

The cross-tab chi-square test was used to investigate the correlation between the motivation for access, the type of information accessed, and the demographic characteristics with subsequent emotions. Analysis of the data shows that there is a significant difference in the emotions generated by the different topics of health information that users pay attention to (P < 0.05), where the main body of health information is divided into four categories, including prevention and treatment of medical diseases, health care, fitness and weight loss, and mental health, in which the proportion of negative emotions generated by users paying attention to the topic of prevention of medical diseases is significantly higher than that of the other three groups, as shown in Table 3. This study suggests that the reason may be that the information in this area is more serious, and the possibility of exaggeration is also higher, more likely to make users feel fearless. There is a significant difference between the different publisher types that users tend to follow in terms of their emotions (P < 0.05), with publisher types divided into health information shared by netroots and celebrities(stars), ordinary accounts with explanations of the principles of information, ordinary accounts with real-life experience, and professional health bloggers, in which the proportion of negative emotions generated by users who tend to follow health information shared by celebrities and Internet celebrities is significantly higher than that of the other three groups. significantly higher than the other three groups. There is a significant difference in the emotions generated by users of different age groups (P < 0.05), and this paper divides age into four groups: 18-25 years old, 26-35 years old, 36-45 years old, and 46-55 years old. Among them, the proportion of negative emotions generated by users in the age group of 26-35 years is significantly higher than that of the other three groups, which may be analyzed as this age group is often in the stage of the greatest pressure of work and life, and also in the stage of some significant changes in the state of the body, so it may be easier for users in this age group to pay too much attention to their health and thus more prone to generate negative emotions of health anxiety. In this study, the degree of users' willingness to buy works was divided into five measures according to the Likert scale, and the data showed that the degree of users' willingness to buy works had a significant difference in the emotions generated by users (P < 0.05).

Table 3: Emotional feedback --whether or not to overproduce health anxiety.

		Negative	Positive	Total
Information content	Medical disease prevention and treatment	47.7%	52.3%	100%
	Health Care	22.3%	77.7%	100%
	Fitness and weight loss	25.6%	74.4%	100%
	Mental health	20.0%	80.0%	100%
User follow-up behaviour of the respondents	Netroots, celebrities' recommendation behaviours and products	69.2%	30.8%	100%
	Explanation of principles shared by ordinary accounts	29.2%	70.8%	100%
	Real-life health information works shared by ordinary accounts.	19.6%	80.4%	100%
	Works of health bloggers	19.7%	80.3%	100%
Age	18-25years old	31.0%	69.0%	100%
	26-35years old	46.7%	53.3%	100%
	36-45years old	16.7%	83.3%	100%
	46-55years old	23.7%	76.3%	100%

However, there is no significant difference ($P > 0.05$) between the users' initiative and passivity in acquiring health information, the users' way of dealing with health information after acquiring it, the users' gender, marital status, education level, family income status, and the level of the city line of life on the emotions generated by the users.

3.5 Correlation Between Information Acquisition and Processing Behaviour

The Likert scale is used to classify user behaviours into degrees, including the frequency of acquiring health information, the frequency of forwarding the information after acquiring it, the degree of making relevant adjustments to lifestyle habits after acquiring health information, the degree of willingness to buy the products recommended in the health-related works, the degree of willingness to conduct further investigation or consult with relevant professionals after acquiring the information, and the degree of belief in the health-related information acquired through the Internet. Pearson correlation coefficient was used to analyze the correlation between users' health information acquisition behaviours, and the data showed that there was a significant positive correlation between users' health information acquisition behaviours ($P < 0.05$), see Table 4.

3.6 Regression Analysis of Information Access and Health Anxiety

Negative emotions after acquiring online health information were assigned as 0, and positive emotions after acquiring online health information were assigned as 1. Gender, marital status, the initiative of acquiring health information, the

Table 4: Formatting sections, subsections and subsubsections.

		Frequency of access to health information	How often I forward the health information I get from social media networks to the people around me.
The extent to which I have made adjustments to my lifestyle habits based on health information obtained from social media networks.	Pearson Correlation	.582	.618
	Significance (two-tailed)	.000	.000
My willingness to buy the products recommended in health information works directly.	Pearson Correlation	.379	.611
	Significance (two-tailed)	.000	.000
My willingness to conduct further research or consult a professional to find out more about a problem.	Pearson Correlation	.445	.584
	Significance (two-tailed)	.000	.000
How much I trust the health information I get from social media networks.	Pearson Correlation	.235	.433
	Significance (two-tailed)	.003	.000

motivation to apply it, the topic of the information, the type of information, the type of publisher, the user's subsequent processing behaviours, and the six user behaviours of the survey respondents were used as the independent variables in the biclassified logistic regression analysis, using the direct entry method to screen the independent variables, with a test level of 0. 05, in which gender, marital status, the initiative to obtain health information, application motivation, information topics, information types, publisher types, and user follow-up processing behaviour were set up as dummy variables, with the following categories: female, married, equal frequency of active searching and passive obtaining of information, no application motivation, mental health category topics, short video category works, health category works, and user behaviours, short video type works, health bloggers, and no follow-up processing behaviour as reference.

Among them, there is a significant difference for the four different treatments after obtaining health information, with Treatment 1 (the behaviour that users will only like or favorite and will not read it twice) generating 0.209 times more positive sentiment for each additional unit. Treatment 2 (behaviours where users will only like or favorite and read twice if necessary) produced 1.191 times more positive sentiment per unit increase. Treatment 3 (behaviours where users will like, favorite, and retweet) produces 1.277 times more positive sentiment per unit increase. For the degree of users' willingness to purchase products recommended in

health information works and the emotions generated by them, each unit increase in the level of willingness to make relevant adjustments in lifestyle habits after accessing health information produces 3.351 times more positive sentiment.

3.7 Regressivity Between Information Acquisition and Processing Behaviour

Each of the five subsequent behaviours of users' access to health information was taken as the independent variable, and the frequency of public access to health information was selected as the dependent variable, where the standardized coefficient Beta indicates the correlation between the dependent variable and the independent variable, and the constant denotes the longitudinal intercept between the dependent variable and the y-axis when the dependent variable is zero. The results show a primary linear regression relationship between all user behaviours. Among them, the frequency of users' attention to health information only shows a significant linear relationship with the frequency of users' willingness to forward health information to people around them and the degree of users' willingness to make adjustments to their lifestyle habits after obtaining health information, with linear regression equations of $Y=0.202X+1.681$ and $Y=0.365X+1.681$, respectively, and the linear regression equations of $Y=0.202X+1.681$ and $Y=0.365X+1.681$, respectively. The three behaviours

Table 5: Frequency of access to health information.

	B	Standardised Error	Standardized coefficient Beta	Significance	numbering
Constant	1.681	.266		.000	1, 2, 3, etc.
How often do I forward the health information I get from social media networks to the people around me?	.202	.090	.201	.027	1.1, 1.2, 1.3, etc.
The extent to which I have made adjustments to my lifestyle habits based on health information obtained from social media networks.	.365	.085	.374	.000	1.1.1, 1.1.2, 1.1.3, etc.
My willingness to buy the products recommended in health information works directly.	-.034	.090	-.035	.705	
My willingness to conduct further research or consult a professional to find out more about a problem.	.053	.080	.059	.512	
How much do I trust the health information I get from social media networks?	-.011	.074	.014	.878	

of the degree of users' willingness to recommend health products, the degree of users' willingness to further investigate or consult professionals who want to understand the problem, and the frequency of users' attention to health information and the degree of users' belief in health information do not have a significant linear regression relationship with the frequency of users' attention to health information, as shown in Table 5.

4 DISCUSSION

The commercial nature of social media brings confusion to the public's health needs is the objective background of this study, and it is important to consider whether the information that social media users pay attention to is the initial needs of the users themselves or the information environment that the corresponding managers and publishers of social media want the users to receive. Based on these unchangeable objective phenomena, in-depth research on the information acquisition and processing behaviour of social media users and the impact of acquired online health information on their behaviour is the focus of subsequent research.

5 CONCLUSION

This study found that there are corresponding behavioural patterns in users' access to health information. Users' frequency of accessing health information, education level, family income, and city level are all significantly correlated with the degree of belief in the health information they obtain online. Users' frequency of accessing health information, education level, and family income are all significantly related to their willingness to use the health products recommended in the work. The emotions generated by users after accessing health information on the Internet are an important influence on health anxiety, and user behaviour has a certain degree of relevance to the generation of related emotions. Among them, the subject of the information that the user pays attention to, the type of publisher that the user follows, the degree of willingness to buy the products recommended in the health-related works, and the age of the user significantly influence the generation of the related emotions. Therefore, the current situation of health information acquisition under different demographic characteristics should be further promoted according to the corresponding behavioural characteristics, and since the behaviour of users in acquiring health information significantly affects the emotions generated by users, managers of social media

platforms should appropriately guide the behaviour of social media users to reduce the occurrence of health anxiety.

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