

Demand for online platforms for medical word-of-mouth

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Abstract

The choice of medical services affects an individual's treatment and health. However, few studies have focused on medical electronic word-of-mouth (eWOM), which has the greatest impact on such choices. This study was performed to explore the need for and general public's attitude toward medical eWOM and provide a reference for government, media, and medical practitioners.

In this study, 84% of the respondents had experience using online evaluation platforms to search for eWOM, and those who were satisfied with the online evaluation platforms substantially outnumbered those who were dissatisfied. The respondents generally believed that there is a need for physician evaluation platforms, although a difference remained between respondents who needed the online evaluation platforms (72.0%) and were willing to reference them (72.0%) and those who trusted them (46.5%) and were willing to provide their opinions (55.0%). These results could signify that despite the public's need, the public remains doubtful of the information provided by these online evaluation platforms.

Keywords

Medical word-of-mouth, electronic word-of-mouth, online platform demand, general public, Taiwan, quantitative survey

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Introduction

According to Nelson,¹ goods are divided into search goods, experience goods, and credence goods. Search goods enable consumers to easily identify the characteristics and prices of products and substitutes, and comparability exists between the products and their alternatives. An example of a

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search good is clothing. Experience goods refer to products or services of which the quality and features can only be determined through observation after purchase, such as food and drinks, hairdressing services, beauty treatments, and concerts. Credence goods are products or services of which the characteristics or effects are difficult to ascertain, even after a short period of consumption; an example is vitamin tablets. Medical care falls between experience and credence goods.¹

For most online consumers, detailed product information is deemed crucial during the purchase of search goods. When purchasing experience goods, consumers require advertisements or information regarding others' experiences using the product.² Because of the debate over the legitimacy of medical advertising, the public naturally relies on others' usage experiences—namely, word-of-mouth (WOM)—when choosing medical care.

As the general population has become more affluent, the essentialness of and demand for health care has increased; additionally, because the risk associated with medical services is higher than that associated with general services, patients' cost-sharing is anticipated to rise from a service perspective.³ Decisions regarding medical services have become increasingly important, and reducing uncertainty and risk has therefore become the top priority for patients. WOM provides a unique solution for the intangible problems associated with services.⁴

Despite the permeation of society by medical WOM, little research has focused on this topic. In addition, increasing numbers of customers are using the Internet to seek out others' experiences using certain products to reduce the risks and uncertainties of purchasing. This has contributed to the steady growth in the impact of online WOM on consumer purchase behaviors. Therefore, the present study was performed

to investigate the opinions and attitudes of the users toward online platforms for medical WOM and the decisive factors affecting users' willingness to use such platforms.

Literature review

Word-of-mouth

WOM is the main informal communication channel for consumers and has been studied by numerous scholars.⁵ Gelb and Sundaram⁶ believed that WOM is an interpersonal resource that allows the consumer to engage in interpersonal communication or obtain recommendations of a noncommercial nature regarding products, brands, or services. WOM dissemination plays a crucial role in customers' consumption behavior and affects their short- and long-term purchase decisions.⁶

Although the mass media has long been a crucial marketing tool for businesses, scholars have begun to emphasize the crucial nature of WOM communication for enterprises.⁷ Bristor⁴ regarded WOM as a type of marketing tool and observed a mutual influence between WOM and sales. Keaveney⁸ proposed that WOM messages strengthen the effects of mass media, enhancing the lower-level cognition and emotion caused by the mass media and thereby improving original, less favorable impressions, causing consumers to develop behaviors and ideas of commitment regarding a product or service. In other words, mass media such as newspapers, magazines, and television can effectively familiarize consumers with products, although no marketing tool has as great an impact as WOM when consumers are making actual purchase decisions.⁸

Electronic word-of-mouth

The emergence of the Internet has enabled customers to collect product information

and browse other consumers' discussions, endowing them with the capacity to share their own experiences, opinions, and relevant knowledge, thus forming electronic WOM (eWOM).⁹

Like conventional WOM, eWOM affects people's decision-making on consumption. A prior study showed that people will refer to others' opinions online when they are making consumption decisions.¹⁰

Medical care behavior and medical information searching

According to Kotler and Anderson,¹¹ medical care behavior is a type of purchase behavior. Similar to purchase behavior, health care-seeking behavior often consists of the following series of processes from need recognition to results evaluation after the actual purchase: need confirmation, information searching, alternative assessment, purchase decision, and postpurchase behaviors.¹² Among these processes, information searching involves obtaining more distinct choices for comparison and can be divided into internal and external searching. Internal searching refers to consumers making judgments based on their past experience and knowledge; external searching refers to the external collection of information, including active searching for WOM.¹³ As stated by Bristol,⁴ most people tend to directly ask friends and relatives who have relevant experience with physicians or hospitals (active searching for WOM) to avoid searching blindly.

As use of the Internet to find health care information has become more common, patients now use the Internet to find physicians and medical facilities and to research medical conditions.¹⁴ Millions of people search for health-related information on the Internet each day, including information about prescribed treatments, unanswered questions after clinic visits, or diet and exercise regimens.¹⁵

Research method

This study was performed using a quantitative survey, which involves extraction of the required number of samples according to the population size and the study of the incidence and distribution of their social and psychological variables as well as the interrelationships among these variables.¹⁶ This was an exploratory study with the purpose of investigating and gaining insight into phenomena, concepts, and views that have not been previously studied. The questionnaire items were designed according to the research problems and were intended to provide a preliminary understanding of the respondents' opinions on the physician evaluation platforms as well as the differing interpretations of distinct groups on these platforms; the overall goal was to clarify the importance of eWOM in patients' choice of medical services. The survey was distributed in Taiwan using the online survey platform "Dosurvey" (<https://www.dosurvey.com.tw>). In total, 200 valid questionnaires were collected among 205 respondents, and descriptive statistics and chi-square analyses were performed using IBM SPSS Statistics for Macintosh, Version 22.0 (IBM Corp., Armonk, NY, USA).

This study was conducted in accordance with the Declaration of Helsinki. Ethics committee approval was unnecessary because this study mainly focused on the opinion of the general public, the survey did not contain privacy-sensitive material, and no work with humans was performed in the hospital. Likewise, neither verbal nor written consent was required because the survey data were gathered anonymously and contained no sensitive material.

Research results

Background

The recovered questionnaires indicated that men and women accounted for 40.5% and

59.5% of the participants, respectively. Most respondents (57.5%) were aged 21 to 30 years, followed by 31 to 40 years (11.0%), 41 to 50 years (23.5%), and 51 to 60 years (6.5%); respondents aged ≥ 61 years comprised the smallest group (1.5%). Most of the respondents had undergraduate degrees (52.5%), followed by graduate degrees (30.5%), high school degrees or less (15.5%), and PhDs (1.5%). Finally, students accounted for the majority of respondents (39.5%), followed by service industry workers (14.5%); specialists (12.5%); social workers (8.5%); business executives (8.0%); physicians (6.5%); business owners (2.5%); civil servants (2.5%); professional nurses (2.0%); agricultural, forestry, fishery, and animal husbandry personnel (1.5%); military personnel (1.0%); and pharmacists (1.0%). Therapists, clinical laboratory technicians, and care workers accounted for 0.0% of participants (Table 1).

Basic descriptive results

According to the recovered questionnaires, when asked whether they had any experience using online evaluation platforms (such as those for food, bed and breakfast, and travel evaluations), 84% of respondents' answers were affirmative whereas 16% of respondents had no such experience.

The preliminary survey indicated that the general public has become accustomed to using online evaluation platforms to search for eWOM.

When asked about their impression regarding online evaluation platforms, 1.5% of the respondents were highly dissatisfied, 4.0% were dissatisfied, 52.0% were neutral, 39.0% were satisfied, and 3.5% were highly satisfied. Removing the neutral respondents and adding those at both extremes yielded a 42.5% satisfaction rate and a 5.5% dissatisfaction rate.

Regarding respondents' willingness to reference physician evaluation platforms that included information such as service attitude, professionalism, background title, and patients' WOM, 1.0% of the respondents strongly disagreed, 2.0% disagreed, 25.0% were neutral, 53.5% agreed, and 18.5% strongly agreed. Excluding the neutral respondents, the sum of responses at both extremes yielded 72.0% agreement in contrast to mere 3.0% disagreement.

When asked again whether they believed that there is a need for such platforms, 1.5% of the respondents strongly disagreed, 2.5% disagreed, 24.0% were neutral, 57.0% agreed, and 15.0% strongly agreed. Excluding the neutral respondents, the sum of responses at both extremes yielded 72.0% agreement and merely 4.0%

Table 1. Respondents' background information

Background	(%)	Professional background	(%)	
Sex	Male	40.5	Students	39.5
	Female	59.5	Service industry workers	14.5
Age (y)	21–30	57.5	Specialists	12.5
	31–40	11.0	Social workers	8.5
	41–50	23.5	Business executives	8.0
	51–60	6.5	Physicians	6.5
	>61	1.5	Business owners, civil servants	2.5
Education	High school	15.5	Professional nurses	2.0
	Undergraduate	52.5	Agricultural, forestry, fishery, animal husbandry personnel	1.5
	Graduate	30.5	Military personnel, pharmacists	1.0
	PhD	1.5	Therapists, clinical laboratory technicians, care workers	0.0

Table 2. Basic descriptive results

	Yes	No			
Experience using online evaluation platforms	84.0%	16.0%			
	Highly dissatisfied	Dissatisfied	Neutral	Satisfied	Highly satisfied
Impression regarding online evaluation platforms	1.5%	4.0%	52.0%	39.0%	5.5%
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Willingness to reference physician evaluation platforms	1.0%	2.0%	25.0%	53.5%	18.5%
Believe there is a need for such platforms	1.5%	2.5%	24.0%	57.0%	15.0%
Trust the evaluations on these platforms	2.5%	4.5%	46.5%	42.5%	4.0%
Willing to share their experiences	2.5%	6.0%	36.5%	43.5%	9.5%

disagreement. The distribution of this question was highly dependent on the previous question.

In terms of whether they trusted the evaluations on these platforms, respondents who strongly disagreed and disagreed accounted for 2.5% and 4.5%, respectively; 46.5% were neutral; and those who agreed and strongly agreed accounted for 42.5% and 4.0%, respectively. Excluding the neutral respondents, the sum of responses at both extremes yielded 46.5% agreement and 7.0% disagreement. These results indicate that the public's trust in online platforms is lower than their willingness to reference them.

Finally, in terms of whether they were willing to share their positive and negative medical care experiences and their evaluations of doctors on such platforms, respondents who strongly disagreed and disagreed accounted for 2.5% and 6.0%, respectively; 36.5% were neutral; and those who agreed and strongly agreed accounted for 45.5% and 9.5%, respectively. Excluding the

neutral respondents, the sum of responses at both extremes yielded 55.0% agreement and only 8.5% disagreement (Table 2).

Chi-square test and cross-analysis

In the chi-square test and cross-analysis in this study, samples were found to possess statistical significance after being compared with willingness, as follows: 1) sex versus willingness to reference physician evaluation platforms, 2) age versus impression of online evaluation platforms, 3) age versus willingness to reference physician evaluation platforms, 4) age versus experience in using online evaluation platforms, 5) education level versus need for physician evaluations, 6) occupation versus impression of online evaluation platforms, and 7) occupation versus trust in physician evaluation platforms.

Women who agreed to reference physician evaluation platforms accounted for 60.50% and men accounted for 43.21%. These results may indicate that women are

Table 3. Chi-square test and cross analysis

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Sex vs. willingness to reference physician evaluation platforms	Pearson chi-square significance: 0.048% (<0.05)					
	Male	2.47%	3.70%	30.86%	43.21%	19.75%
	Female	0.00%	0.84%	21.01%	60.50%	17.65%
Age vs. willingness to reference physician evaluation platforms	Pearson chi-square significance: 0.000% (<0.05)					
	21–30 y	0.00%	1.74%	15.65%	62.61%	20.00%
	31–40 y	4.55%	0.00%	36.36%	40.91%	18.18%
	41–50 y	0.00%	2.13%	29.79%	51.06%	17.02%
	51–60 y	7.69%	7.69%	69.23%	15.38%	0.00%
	≥61 y	0.00%	0.00%	33.33%	0.00%	66.67%
Education level vs. need for physician evaluation platforms	Pearson chi-square significance: 0.000% (<0.05)					
	High school	0.00%	6.45%	35.48%	32.26%	25.81%
	Undergraduate	0.00%	0.95%	25.71%	63.81%	9.52%
	Graduate	4.92%	1.00%	16.39%	59.02%	18.03%
	PHD	0.00%	33.33%	0.00%	33.33%	33.33%
Occupation vs. trust for physician evaluation platforms	Pearson chi-square significance: 0.002% (<0.05)					
	Physicians	15.38%	15.38%	46.15%	23.08%	0.00%
	Pharmacists	0.00%	0.00%	0.00%	100.00%	0.00%
	Nurses	0.00%	0.00%	50.00%	50.00%	0.00%
	Social workers	5.88%	5.88%	58.82%	5.88%	25.53%
	Business owners	0.00%	0.00%	40.00%	60.00%	0.00%
	Business executives	6.25%	0.00%	56.25%	31.25%	2.00%
	Specialists	0.00%	12.00%	48.00%	36.00%	4.00%
	Service industry	3.45%	0.00%	62.07%	34.48%	0.00%
	Agricultural, forestry, fishery, animal husbandry	0.00%	0.00%	0.00%	100.00%	0.00%
	Civil servants	0.00%	0.00%	60.00%	40.00%	0.00%
	Military	0.00%	0.00%	50.00%	0.00%	0.00%
	Students	0.00%	2.53%	37.97%	56.96%	2.53%
			Highly dissatisfied	Dissatisfied	Neutral	Satisfied
Age vs. impression of using online evaluation platforms	Pearson chi-square significance: 0.003% (<0.05)					
	21–30 y	0.87%	0.87%	48.70%	47.83%	1.74%
	31–40 y	4.55%	0.00%	54.55%	36.36%	4.55%
	41–50 y	0.00%	8.51%	55.32%	27.66%	8.51%
	51–60 y	7.69%	15.38%	69.23%	7.69%	0.00%
≥61 y	0.00%	33.33%	33.33%	33.33%	0.00%	
Occupation vs. impression of online evaluation platforms	Pearson chi-square significance: 0.000% (<0.05)					
	Physicians	0.00%	15.38%	53.85%	30.77%	0.00%
	Pharmacists	0.00%	0.00%	0.00%	100.00%	0.00%
	Nurses	0.00%	25.00%	25.00%	25.00%	25.00%
	Social workers	5.88%	11.76%	52.94%	17.65%	11.76%
	Business owners	0.00%	0.00%	100.00%	0.00%	0.00%
	Business executives	0.00%	0.00%	50.00%	37.50%	2.00%
	Specialists	0.00%	4.00%	72.00%	24.00%	0.00%
	Service industry	0.00%	3.45%	62.07%	34.48%	0.00%
	Agricultural, forestry, fishery, animal husbandry	0.00%	0.00%	0.00%	33.33%	66.67%
Civil servants	0.00%	0.00%	80.00%	20.00%	0.00%	

(continued)

Table 3. Continued

		Highly dissatisfied	Dissatisfied	Neutral	Satisfied	Highly satisfied
	Military	0.00%	0.00%	50.00%	50.00%	0.00%
	Students	2.53%	1.27%	41.77%	54.43%	0.00%
		Yes	No			
Age vs. experience in using online evalua- tion platforms	Pearson chi-square significance: 0.000% (<0.05)					
	21–30 y	90.43%	9.57%			
	31–40 y	90.91%	9.09%			
	41–50 y	76.60%	23.40%			
	51–60 y	46.15%	53.85%			
	≥61 y	66.67%	33.33%			

more willing than men to refer to physician evaluation platforms.

In terms of the respondents' impression of using online evaluation platforms, the results seemed to indicate a slight decline in satisfaction and a slight increase in dissatisfaction as age increased.

Regarding respondents' willingness to refer to physician evaluation platforms, the results also seemed to indicate a decline in agreement and a slight increase in disagreement as age increased.

In terms of whether respondents had any experience in using online evaluation platforms, the results indicated a decline in respondents who were experienced and an increase in those who were inexperienced as age increased.

Regarding the need for physician evaluation platforms, a higher education level seemed to indicate a higher need for such platforms. Concerning their impression of online evaluation platforms, students, pharmacists, and agriculture, forestry, fishery, and animal husbandry personnel had more satisfactory evaluations, whereas professional nurses and social workers had less satisfactory evaluations.

Finally, in terms of their trust in physician evaluation platforms, business owners,

students, pharmacists, and agriculture, forestry, fishery, and animal husbandry personnel expressed a higher degree of trust, whereas physicians themselves were less trusting of the online evaluation platforms (Table 3).

Discussion

From the patients' perspective, detailed medical service information reduces risks, improves the chances of recovery, and promotes health. However, because of the particularity of medical care, patients generally rely on WOM from friends and family.¹⁷ In this study, 84% of the respondents had experience in using online evaluation platforms to search for eWOM, and those who were satisfied with the online evaluation platforms substantially outnumbered those who were dissatisfied. The results demonstrated that the respondents generally believed that there is a need for physician evaluation platforms, although a difference remained between respondents who needed the online evaluation platforms (72.0%) and were willing to reference them (72.0%) and those who trusted them (46.5%) and were willing to provide their opinions (55.0%). These results could

signify that despite the public's need, the general public remains doubtful of the information provided by these online evaluation platforms.

Further cross-referencing revealed the following:

1. Women were more willing than men to reference physician evaluation platforms.
2. As age increased, satisfaction in using online evaluation platforms decreased and dissatisfaction increased, agreement to reference physician evaluation platforms declined and disagreement increased, and experience in using online evaluation platforms declined and lack of experience increased.
3. A higher education level was associated with a higher proportion of respondents who believed that physician evaluation platforms were necessary.
4. Business owners, students, pharmacists, and agriculture, forestry, fishery, and animal husbandry personnel expressed greater trust in physician evaluation platforms, whereas physicians themselves were less trusting of the platforms.

Conclusion

The choice of medical services affects an individual's treatment and health. However, few studies have been conducted on medical WOM and eWOM, which have the greatest impact on such choices. This study focused on the differing needs of the general public and distinct groups for medical eWOM to provide a reference for government, media, and medical practitioners. Perhaps if a more transparent medical evaluation platform is provided, the public will be able to obtain clearer information regarding medical services and make more ideal choices for their health. The study was restricted by its limited sample size and diversity, leading to an inability to completely express the needs of the differing groups. Future studies are

anticipated to provide further clarification and verification.

Declaration of conflicting interests

The authors declare that there is no conflict of interest.

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