

SHORT COMMUNICATIONS

Online Purchase of Health Supplements and Traditional and Complementary Medicine (T&CM) Products: A Qualitative Study

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ABSTRACT

Online purchase of health supplements (HS) and traditional and complementary medicine (T&CM) is becoming more popular among the general public. However, how does public behave in such activity is yet to be explored. Thus, a qualitative study was conducted to explore the public's experience with purchasing HS and T&CM products online. A semi-structured interview guide was used to conduct in-depth interviews (IDIs) with ten adults. All IDIs were audio recorded, transcribed verbatim and thematically analysed. Two themes emerged from the analysis, including (i) information seeking to understand a product, and the (ii) motivating attributes that influence purchase intention. Participants searched for information in order to understand a product, verified the information obtained, and held a spectrum of perceptions on the reliability of information. Furthermore, motivating attributes that suggest product effectiveness and safety would increase one's intention to purchase, whereas motivating attributes that convince an individual that the online sales mechanism is reliable would also strengthen the purchase intention of online HS and T&CM products.

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INTRODUCTION

Health supplements have long been used to promote general health and wellbeing among the general public. At the same time, the role of traditional and complementary medicine (T&CM) has also gained attention around the globe, being an alternative to the conventional medicine in healthcare system. About 40.2% of U.K. adults (1) and 52% of U.S. population (2) reported health supplements use, while 16.4% of Japanese mothers provided health supplements to their children (3). Apart from that, T&CM medicine usage is also common among the U.S. population, where 17.7% of them had used nonvitamin, nonmineral, or natural products in 2007 (4). In Malaysia, the use of supplements and T&CM is deeply rooted in the multiracial society. Furthermore, it is the highest among ASEAN countries (5), with nearly one in three Malaysians using health

supplements and one in six using T&CM products (6). Besides, half (51%) of the Malaysian elderly was found using T&CM product as well (7).

With the introduction of e-commerce to the local population, supplements and T&CM can now be purchased from the Internet. However, online purchase of these products is not without risk. In the absence of controlled and monitored online T&CM sales, there are possibilities for the public to purchase unregistered or counterfeited products or health supplements contaminated with scheduled poison that can be harmful. A Malaysian study reported that T&CM users most purchased their products based on their cultural beliefs, suggestions from doctors and pharmacists, and encouragement from family and friends (8). It was also found that patients' knowledge of T&CM correlates negatively with their use of T&CM products (9). This can be alarming as higher usage of T&CM is seen among patients with poorer knowledge in T&CM. To facilitate better policymaking and supporting system to advocate safe use of health supplements and T&CM products over the Internet, how does public behave in such activity is

thus brought into question. Hence, this study aimed to qualitatively explore the public’s experience with online health supplements and T&CM products purchase.

METHODS

Study design

A qualitative study was conducted in Perak State (a state in Peninsular Malaysia) among Malaysian adults aged 18 years or above, who have purchased health supplements or T&CM from the Internet within the past two years. For this study, health supplements is defined as any products orally administered to supplement the diet and maintain, enhance, and improve the health function of the human body (10). In contrast, T&CM products herein referred to orally administered traditional medicines and finished herbal product (11). Study was conducted in accordance with the Declaration of Helsinki and was approved by the Medical Research and Ethics Committee, Ministry of Health Malaysia (NMRR-18-838-41056, Ref: KKM/NIHSEC/P18-1233(11)). A written informed consent was obtained from all participants.

Participants recruitment and data collection

A total of ten participants were purposively recruited from different age groups, gender, ethnicity, educational background, and health status (healthy or those with non-communicable diseases) to capture a wide range of experiences in this activity. In-depth interviews (IDIs) were conducted by three research members from various backgrounds, either from the field of pharmacy or industrial mathematics, and have been trained by a senior qualitative researcher to conduct qualitative interviews and analyses. All IDIs were conducted on a face-to-face and one-to-one basis at a confined or isolated area away from the crowd, except one IDI involving the presence of one observer during the interview.

Transcribing and coding

The IDIs lasted between 20 to 50 minutes. All IDIs were conducted either in English or the Malay language, guided by a semi-structured interview guide, audio

recorded and transcribed verbatim. The transcript was read in its original language and coded in English by two researchers. All disputes were resolved by consensus among two researchers, with a third researcher involved if consensus could not be achieved. Data saturation was achieved when there were no new emerging themes identified in two consecutive IDIs. Selected quotes in Malay language were translated into English before publication.

RESULTS AND DISCUSSION

A total of ten participants were interviewed with their socio-demographics summarized in Table I. This study uncovered that the public’s experience in online purchasing of supplements and T&CM products revolves around two themes, which are (i) information seeking to understand a product as well as (ii) motivating attributes that influence purchase intention.

Information seeking

Information is required by a person to understand the product’s characteristics and evaluate other options available on the Internet. Although the emphasis of sought information varied across individuals based on different concerns, it was primarily to understand the product’s effectiveness, price of the product as well as its safety.

“[I asked] whether the product is effective... for breastfed baby, is it safe?” (P07: Male healthy subject, 34 years old)

Participants searched for information from various sources, including personal sources and commercial sources. The commonly involved personal sources of information were their friends, healthcare staff or peer customers who have taken the product before, which involved word-of-mouth from a friend, or electronic product reviews available on the social media or product webpage. On the other hand, the commercial sources consisted of advertisements available from the product web page, product demonstration by the

Table I: Socio-demographics of participants

Participant	Sex	Age in years	Ethnicity	Education level	Occupation	Health status	Type of product purchased
P01	F	32	Chinese	Tertiary	Medical	Healthy	Supplements
P02	M	30	Indian	Tertiary	Non-medical	Healthy	Supplements
P03	F	35	Malay	Tertiary	Non-medical	Healthy	Supplements & T&CM
P04	M	25	Malay	Tertiary	Non-medical	Healthy	Supplements
P05	F	43	Malay	Tertiary	Non-medical	NCD	T&CM product
P06	M	54	Malay	Secondary	Non-medical	NCD	T&CM product
P07	M	34	Malay	Secondary	Non-medical	Healthy	Supplements
P08	F	30	Chinese	Tertiary	Medical	NCD	Supplements & T&CM
P09	F	30	Malay	Tertiary	Medical	Healthy	T&CM product
P10	F	42	Chinese	Tertiary	Non-medical	Healthy	Supplements

F: Female; M: Male; NCD: Non-communicable disease; T&CM: traditional and complementary medicine

company, product pamphlet or information provided by the sellers. Information obtained from various sources was compared for verification.

"I will search for all the [customer] reviews online, and I will see what other people said about this product." (P08, Female medical staff, 30 years old)

"If I were to be confident [in the information], opinion (referring to product information) from both sides (the online seller and shop seller) needs to be the same..." (P07: Male healthy subject, 34 years old)

With regards to product reviews posted by peer customers, participants believed that those comments were authentic, especially when the number of reviews was large. Besides, product seller was generally perceived as the sole referral point for product-related inquiry. Although some participants highly trusted the information provided by the seller, some of them were aware of the possibility of a dishonest seller.

"But we (customer and seller) never met face-to-face. We (customer) trust them in random." (P09: Female healthy subject, 30 years old)

Some of them did not discuss the use of health supplements and T&CM products with their healthcare professionals as these products were perceived as food, and thus, no medical attention was required. On the other hand, fear of being criticized for taking these products also discouraged the public from discussing the use of these products with their healthcare professionals.

"[I] didn't tell [the doctor about any T&CM products that I am taking]... all these products are just herbal, they are just like normal food, I don't think there is any issue." (P05: Female patient with NCD, 43 years old)

"No, I didn't tell [the doctor about T&CM product that I take]... I was afraid that he/she (the doctor) will get angry (Laughs)." (P03: Female healthy subject, 35 years old)

Motivating attributes that influence purchase intention

In this study, various motivating attributes were found to influence an individual's intention to purchase health supplements or T&CM products online. These motivating attributes were either related to the product or the online sales mechanism. Since health supplements and T&CM products are health-related products, attributes that suggest product effectiveness and safety would increase one's intention to purchase. Besides, attributes that convince an individual that the online sales mechanism is reliable (e.g., reliable sellers, reliable online marketplace or e-commerce website) would also strengthen the purchase intention of online health supplements and T&CM products.

Product-related motivating attributes

Perceived product effectiveness in improving one's health condition motivates a person to purchase health supplements or T&CM products from the Internet. This attribute was found prominent, especially among participants who had medical conditions. A participant's intention to purchase a T&CM product was heightened when the product was claimed to be capable of improving her renal function. When the product was not available in a physical store, overwhelming purchase intention drove her to acquire it over the Internet, despite finding the payment procedure was less convenient for her.

"[The product review stated that] it can especially reduce creatinine level ...I just want to reduce my creatinine level...(chuckle). (Later in the interview)...It is easier if they sell it (the T&CM product) in the physical shop, easier to buy. If [sold] online, we still need to travel to bank, withdraw the money, and bank in, everything is slower." (P05: Female patient with NCD, 43 years old)

Positive product comments shared by peer customers, either verbally or electronically, is another motivating attribute that enhances one's intention to purchase health supplements and T&CM products via the Internet. Greater confidence in product effectiveness was observed when a peer customer shared a perceived successful experience with a similar health condition. However, a negative product comment did not necessarily diminish participants' confidence in product quality. Instead, they attempted to evaluate the seriousness of the rising issues attributable to the negative comments.

"I have a friend, her husband has [high] creatinine just like me, but her husband's creatinine dropped [after taking the T&CM product], you know, it dropped!" (P05: Female patient with NCD, 43 years old)

"If [a product] was rated one star (poor rating), I will see (evaluate the reason). Sometimes it is just [due to] packaging issue; why rated two stars, ah.. [it is due to] slow delivery. The rest of the other comments stated [that the product] is good..." (P07: Male healthy subject, 34 years old)

Besides, scientific evidence that portrays the product's effectiveness also increases participant's confidence in the quality of the product. The product company usually provided this scientific evidence to illustrate the availability of product content and its effect compared to a similar product by other brands. It is noteworthy that an advertising statement claiming that the product effect was trialled in research or the product had received certification from other bodies could convince a person that the product is effective and subsequently enhance one's purchase intention.

"I believe in this [product] because it seems that they have conducted research on it (...) they showed the

certificate (participant showing the homepage of the product)." (P05: Female patient with NCD, 43 years old)

Endorsement by healthcare professionals in product advertisement was also found to strengthen perceived product safety. Health supplements and T&CM products that were claimed invented or recommended by a healthcare professional were perceived to be trustable, giving rise to a greater purchase intention. Notably, a participant expressed confidence in a product when it was claimed to be invented by a doctor who was a politician. The influence of a healthcare professional was also seen when she later stopped purchasing this product after being discouraged by another healthcare professional who treated her, although she did not think that taking the product caused her any problem.

"[I am confident with the product] because of the doctor [who invented the T&CM product], I also believe him because he is a politician as well. (Later in the interview, when asked about reason of discontinuing the T&CM product) In fact, if I were to say(...) I guess it is OK, I feel that the thing (T&CM product) is OK, ah! But the doctor (who treated me) did not allow it anymore... [so I] stopped" (P05: Female patient with NCD, 43 years old)

Perceived product safety based on personal experience or perception also promoted participants' confidence in the product. A product was perceived as safe when a person did not experience any side effects after taking health supplements or T&CM products purchased from the Internet. Besides, T&CM product that a healthy person could take was also perceived to be safe for a patient with chronic health conditions.

"[This T&CM product] healthy people can consume it, patient also can drink (...) well... I guess I can drink it, I guess so..." (P05: Female patient with NCD, 43 years old)

Online sales mechanism-related motivating attributes

Although some participants opted to purchase health supplements and T&CM products from the online marketplaces due to its convenience in comparing products and pricing among sellers; whereas, some participants expressed greater purchase intention when a product was sold on e-commerce website. These participants perceived secured product authenticity when purchasing from the original company, while products sold in the online marketplaces were perceived as being handled by a middleman. Also, a product brand that owns its e-commerce website was perceived as an established brand, which also increases one's confidence in product quality, resulting in greater purchase intention.

"If they have their own website, I would think that the

brand should be quite well-established. And I would think that it is safer to buy from the original people, in compared to buying from ... like second-hand third-hand from other people, because like Online Marketplace L and S, I believe that they bought from Company X and then they sold it out" (P08: Female medical staff with NCD, 30 years old)

Perceived secured product storage and delivery condition provided by the sales channel is another motivating attribute that would influence one's intention to purchase health supplements and T&CM products online. A participant opted to purchase health supplements from the e-commerce websites as she felt uncertain about the product storage and delivery condition when it was handled by the sellers from online marketplaces.

"It (the health supplements) was only sent by... maybe Courier Service P [that was not monitored by pharmaceutical regulatory] So the product could be exposed under the sun for like many hours. so of course it is not effective anymore." (P01: Female medical staff, 32 years old)

Apart from that, the perceived accountability of the online sales channels provides a sense of security towards the online sales process, thus increasing one's purchase intention. The e-commerce website was perceived as a safer channel to purchase health supplements and T&CM products because a specific company will be held accountable compared to the online marketplaces, whereas the online sellers' integrity and reliability as a middleman were deemed uncertain. Nevertheless, some participants still purchased health supplements and T&CM products from online sellers, provided that the online seller was perceived to be a responsible seller.

"He/she (the seller) convinced me, he/she said, 'I will be responsible' (...) after I bought it, if anything happen he/she will be responsible (...) in the sense that... if the product is not effective, he/she will be responsible. (Later in the interview) I am confident [with the seller] because he/she called me back after I purchased the product (...) he/she did not disappear after that (the purchase)." (P06: Male patient with NCD, 54 years old)

Discussion of study findings

In this study, participants extensively discussed their information-seeking practice before making an online purchase of supplements and T&CM. This practice suggests that the public values health products information and proactively seeks knowledge to understand the product before purchasing it. However, when looking into the sources of information, the participants relied more on their friends, peer customers and product advertisements, rather than the healthcare providers. Similarly, a study conducted among the American public also reported that the Internet was

used as the main source of information regarding health supplements use, instead of pharmacist, dietitians and medical doctors (12). This calls for responsible sharing of ethically sound product information by the online sellers of health supplements and T&CM products, as the public greatly relies on their information to make purchase decision.

It has been reported that non-disclosure of health supplements and T&CM use is high among the public (13-15). This study reveals that participants who were under medical care did not feel the need and importance to discuss their consumption of supplements and T&CM purchased online with their healthcare providers. Other reason reported included a lack of inquiry from healthcare providers, fear of rejection and the belief that the use of supplements and T&CM are safe (16). However, the use of the supplements and T&CM (whether they were purchased online or from the physical shop) is not without risk, and the disclosure of supplements and T&CM use to the healthcare providers is thus deemed important. It relies on patients' attitudes towards the used products and the healthcare providers' interpersonal and communication skills (17,18). The attitude of healthcare providers showing concern about the patients' wellbeing (19), being supportive and non-judgemental during their communication with the patient are also essential to foster trust and encourage the discussion of supplements and T&CM use (16). More studies are called to explore this issue from the healthcare provider's perspective, including their preparedness and willingness to discuss the use of supplements and T&CM with their patients. This information would be a first step toward facilitating shared decision making between healthcare providers and patients regarding the use of supplements and T&CM.

Health supplements and T&CM products are commonly self-prescribed by the public. This practice was even more significant during the COVID-19 pandemic (20), and highly health-conscious individuals were more likely to consume supplements (21). However, excess exposure to nutrients may negatively affect one's health, not to mention potential interaction between the supplements and other medications used to treat disease (20). The product safety issues are also heightened when consumed without advice or supervision from healthcare professionals over the loosely regulated online sales platforms (22). From the spectrum of attributes that influenced one's purchase intention, it is suggestive that public was concerned about product quality when considering the online purchases of health supplements and T&CM products. However, product quality was gauged from the comments of peer customers and product information provided by the product sellers, which the latter might be biased due to the profit-orientated communication approach used by the business company (23,24). To better safeguard the public in the online purchase of health supplements and

T&CM products, the public's knowledge and awareness about product safety are rather necessary. Future studies are recommended to explore the public's knowledge and awareness about product safety, and subsequently, the possible approaches to improving them.

Study strength and limitation

This is the first qualitative study dwelling into online purchasing of health supplements and T&CM among Malaysian consumers. This study is thus providing insight for the policymaker to understand the public's experiences and the factors that influenced their decision in such activity, serving as the basis for future studies. However, due to the qualitative nature of this study, the magnitude of each element elicited through interviews was not measured. It may not be reflective of the behaviour of all consumers in Malaysia. Furthermore, the number of people interviewed in this study was small. Nonetheless, the participants were purposively chosen to achieve the greatest possible variation of sample that represents a spectrum of characteristics.

CONCLUSION

This study elicited participants' experience in online purchase of supplements and T&CM, including information seeking and motivating attributes that influence one's purchase intention, of which both product-related and online sales mechanism-related attributes were reported.

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