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Summer 5-26-2017

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Recommended Citation

Fan, Jing; Zeng, Yijun; and Shao, Mingxing, "How to Improve the Credibility and Interestingness of Social Media Healthcare Information?" (2017). *WHICEB 2017 Proceedings*. 19.

<http://aisel.aisnet.org/whiceb2017/19>

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How to Improve the Credibility and Interestingness of Social Media Healthcare Information?

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Abstract: Social media is a widely accepted medium for interaction and communication. A large amount of information about health care springs out through various social medias. WeChat is a multi-function social media as well as an information sharing platform with largest users in China right now. Many WeChat accounts concentrated on showing and spreading healthcare information. They are trying to attract more readers and spread the information among them. Thus, it is important to find out what changes people's behavior or attitude toward certain kind of information. This research focuses on the influence of the authority of information sources and authors as well as the format and length of information. Those four factors, compared with those in the formal studies are much more specific and much easier to be quantization especially for measurement. Lab experiment study was applied in this paper. The result comes that the authority of subscriptions and information format affect both perceived credibility and interestingness levels, while the authority of authors only makes difference to credibility level. And the length of information shows no significant influence.

Keywords: health information, WeChat, credibility, interestingness

1. INTRODUCTION

With the rapid development of society and increasing pressure, more and more people are in the status of sub-health. They become more interested in health information and would be proactive to search for knowledge online of keeping fit. Traditional mediums like the newspapers and magazines have tried to develop apps or open WeChat public accounts to deliver such messages in a new platform.

According to the 38th Statistical Report on Internet Development in China, there are 710 million Internet users in China until June, 2016, with an Internet penetration rate of 51.7%. Besides, there are 656million people who get access to the internet by the smart phone. The apps in smart phones have been an important part of people's life ^[1]. In the past five years, WeChat has developed from a communication tool to a platform that connects people, service and business. It has 700 million monthly active users, with 700,000 articles published every day. 72% of official accounts are registered through a business entity and 84.7% of the operators use public accounts for information release. 39.8% of the users would read content via public accounts 错误! 未找到引用源。.The institution of health service or professionals in this filed who open WeChat accounts receive large population by sharing health information and knowledge. Among all widely used healthcare products, public accounts for healthcare service like the account on the WeChat ranks the second with 29.4% users. Over 70% of the healthcare products users show great interest in healthcare information. However, there is limited research about the healthcare information on the WeChat as a new media. The goal of this research is to examine factors that influence the perceived credibility and interestingness of the healthcare information in aspects of authority and content respectively. The result of this research will help to promote the targeted health communication in WeChat.

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2. LITERATURE REVIEW AND THEORETICAL MODEL

There have already had a lot of researches in the field of health communication, which is identified as the process of either health care delivery or promotion of public health information. To make it simple, anything related to the creating, gathering, and sharing of knowledge in health can be regarded as part of health communication^[3]. As there are two branches mentioned above including the “healthcare delivery” and “health promotion”, the topic we discuss today is mainly about the second branch. The promotion of healthcare information or the so called health literacy has been a public goal^[4], especially when the online health communication becomes a new trend. A significant majority of patients can use e-mail or internet to search the information they need or to get in touch with professionals^[5]. There are a lot of researches on whether there is a direct linkage between health communication and the change of behaviors. The online health communication has been paid specific attention for its role in both mass communication and interpersonal communication^[6]. And the change of attitude and then behavior is usually the final goal for healthcare communication. There are a lot of factors that make sense in such process like the relevance of information, the demographic characteristics of viewers and so on. All together it calls for well-organized and tailored health information^{[7][8][9]}.

While the premise to judge whether the information is effective in behavior changing is the information is being read and believed. Especially for the health information which is usually recognized to be dull and difficult to be understood.

The process of being read is like the very first step for the information to be accepted. Due to the competition of attention theory, the attention of every person is quite limited. So it's necessary to attract people's attention by increasing the readability and interestingness of information. Interest which is defined as an intrinsic motivation has been proved effective as an independent variable in the learning process. The readability of information is in close relationship with the length which include the “three different line lengths, two different character densities, and five different window heights^{[5][13]}”. There are many researches focus on the influence of different information format especially the pictograph on the understanding. Cartoon illustrations are proved to be an effective strategy for delivering information and improving patient compliance with instructions. Especially for the people lack of high education, the illustration with pictograms is found to have positive effects. Besides some researchers pointed out that the combination of pictures and written instructions are much more effective^{[14][15][16]}.

The credibility for health communication is essential. The term credible here refers to a perception of credibility rather than a direct measure of actual quality. In other words, it is defined by the readers' judges themselves rather than the evaluation through accuracy or truthfulness standards^[17]. From the viewers' perspective, there lays a significant difference due to demographic characteristics, their experiences and circumstances^[18]. From the source perspective, it can further be divided into the medium and the source and the author. Studies on source credibility focus on a source's perceived ability (expertise) or motivation (trustworthiness) to provide accurate and truthful information. From the message's perspective, it may refer to its' format and the content and its presentation^{[17][20]}.

As for the research of healthcare communication delivered in the platform of WeChat, we pay special attention to factors that influence people's perceived credibility, and people's interests toward certain message. We decided to look into the problem from two perspectives-the authority and the content. The authority can be divided into the source's and the author's authority respectively. As for the source's authority, there are two kinds of public account for information releasing in the WeChat. The first kind is registered through official institution or entity, and the second kind is registered personally. There are differences in function and limits between those two kinds of accounts. But this time, we focus on the gap of degree of professionalism people perceived from different account. As for the author's authority, it is defined by whether there is evidence

showing that the author is capable of providing suggestions in such fields. The content part is mainly about how the information (of the same topic) is presented through different format and in different length. Here in this research we only choose two kinds of format- the text and the cartoon.

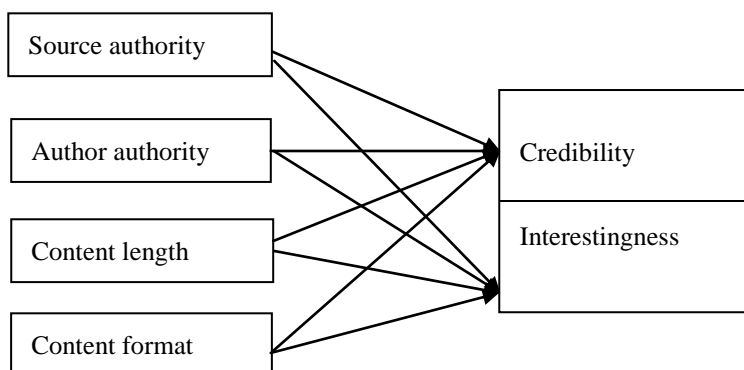


Figure 1. The research model

Based on the analysis above, we set up the following hypothesis:

(1) Authority of source

H1a: The authority of source has a positive effect on the credibility of healthcare information on WeChat.

H1b: The authority of source has a positive effect on the interestingness of healthcare information on WeChat.

(2) Authority of authors

H2a: The authority of author has a positive effect on the credibility of healthcare information on WeChat.

H2b: The authority of author has a positive effect on the interestingness of healthcare information on WeChat.

(3) Length of content

H3a: The length of content has a positive effect on the credibility of healthcare information on WeChat.

H3b: The length of content has a positive effect on the interestingness of healthcare information on WeChat.

(4) Format of content

H4a: The format of content has a positive effect on the credibility of healthcare information on WeChat.

H4b: The format of content has a positive effect on the interestingness of healthcare information on WeChat.

3. EXPERIMENT DESIGN

3.1 Experiment participants

All together we had 80 participants attending the experiments who were from Beijing Foreign Studies University. The table below shows demographic characteristics of the participants.

Figure 2. The information of participants

	Items	Frequency	Percentage
Gender	Male	40	50%
	Female	40	50%
Age	<20	10	12.5%
	21~30	70	87.5%
Education background	Undergraduate	67	83.75%
	Graduate or above	13	16.25%
Public account they have followed by themselves	never	1	1.25%
	1-3	11	13.75%
	4-6	26	32.5%
	>6	42	52.5%

3.2 Experimental task

We had four single factor experiments. The factors were source, author, length, and format. Every experiment had 20 participants who were divided into 2 groups randomly. Take the experiment 1 for example, we chose two passages of a similar topic published by “Doctor Dingxiang” within a week. The clue of the sources had been deleted. And we reset the source background with an official institution account introduction for group 1 while a personal account introduction as simple as profession for group 2. The experiment materials for other 3 experiments are redesigned in the similar way. All together, we prepared 8 pieces of reading materials for 8 groups of people for 4 experiments.


Figure 3. The experiment design

Experiment 1: source	
Public accounts registered by official institutions (1.1)	Public accounts registered by people themselves (1.2)
Experiment 2: author	
Professionals like doctors (2.1)	Editor of the accounts(2.2)
Experiment 3: length	
Long articles(3.1)	Short articles(3.2)
Experiment 4: format	
Text only(4.1)	Text with cartoon




简单六招饮食小技巧，教你肠道通畅身轻巧

【原创】2016-03-02 范志红



范志红
中国农业大学
食品科学与营养工程学院副教授

长按进入作者主页



无论多么优雅美丽的人，也有可能被一些小麻烦所困扰，比如肠道不通，就让人烦躁不安，又无可奈何。

某次遇到一位女士，她听了电视上的讲座，说金银花能治便秘，就急忙买来泡水。结果便秘没有解决，肚子却开始胀气，胃里也觉得难受。

还有很多女士问我：每天大量蔬菜水果，又吃了好多「润肠」的食物，还是解决不了，怎么办哪……

遇到健康问题，首先要有一个最基本的理念——消除原因才能解决困扰。


原因之一 食量太小

节食减肥的女性常常发生这种情况。

一旦食物量低到一定程度，不仅引起胃里的饥饿感，还让肠道空虚，没有足够的食物残渣来刺激肠道蠕动，自然就会失去正常的排泄功能。长期节食很容易导致肠道功能紊乱，恢复起来难度很大。

解决方案：

- 增加食量到七成饱；
- 体积一定要够；
- 营养一定要够用；
- 富含纤维的蔬菜要多。



原因之二 纤维太少

大部分女性虽然没有严格节食，但是主食几乎不吃粗粮，或者只是买「玉米馒头」那样以精白面粉为主的伪粗粮食品，喝一点小米粥；蔬菜数量远远达不到一斤水平，高纤维的豆类 and 薯类也很少吃，那么膳食当中就没有足够的纤维。

要知道大肠主要是靠纤维吸水来填充体积的。如果膳食纤维长期过少，大肠蠕动就严重不足，不仅排便速度慢，而且大大增加肠癌的危险。

解决方案：

- 把一半白米饭白馒头换成粗粮、豆粥和薯类等，燕麦、红薯和红豆等应当占主食的三分之一到二分之一；
- 莲子、百合、莲藕之类含淀粉的食物也含有不少膳食纤维，可以作为全谷杂粮的选择。

原因之三 身体干燥


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【原创】2016-03-02 范志红



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Figure 4. The experiment materials for experiment 1

3.3 Procedure

Every experiment for one person took about 3 minutes. They would be shown the redesigned experiment material simulating those they would usually receive from WeChat according to the groups they belonged to.

After reading the experiment material, all the participants were required to fill a post-questionnaire. The questionnaire was designed to measure the perceived interestingness and credibility of the experimental materials. It was a Likert scale with 12 questions. The scores for each answer from totally disagree to totally agree, ranks from 1 to 5.

1. The content of this article is true.
2. The suggestions from this article are unauthentic.
3. This article is easy to understand.

4. This article is novel.
5. This content of this article is very attractive
6. I would like to read the full article.
7. I believe the suggestions and information presented in this article.
8. I have thought whether I have any symptoms that are similar to those mentioned in this article.
9. I can recall the content of this article after reading.
10. I think it is wise for me to change my habits by following the suggestions from this article.
11. I would like to read another piece of article from this source.
12. I would like to share this article with others.

4. RESULTS

4.1 In terms of authority

The results of the t-test for the relationship between source authority and perceived credibility& interestingness are shown in table. The more professional the source seems to be, the more likely people are to believe that the content provided by the account is true($p<0.01$) and interesting($p<0.01$).

Figure 5. The statistical result of experiment 1

	Group1(1) vs Group1(2)		
	Mean difference	T Value	p Value
Credibility	0.86667	5.6001	0.0002 (<0.01)
Interestingness	0.9	2.8710	0.0092 (<0.01)

As for the authority of author, there is a significant correlation between authority and perceived credibility ($p<0.05$). However, there is limited evidence show that it will have special influence on the perceived interestingness ($p>0.05$).

Figure 6. The statistical result of experiment 2

	Group2(1) vs Group2(2)		
	Mean difference	T Value	p Value
Credibility	0.6	4.1912	0.0012 (<0.05)
Interestingness	-.25	-1.1303	0.8562 (>0.05)

4.2 In terms of content

T-test for the statistics of experiment 3 shows that there aren't significant linkages between the length of content and the perceived credibility ($p>0.05$) and interestingness($p>0.05$)

Figure 7. The statistical result of experiment 3

	Group3(1) vs Group3(2)		
	Mean difference	T Value	p Value
Credibility	.250	0.8955	0.1969 (>0.05)
Interestingness	.333	0.9108	0.1931 (>0.05)

Investigation for experiments 3 supports both hypothesis H4a and H4b. The content of cartoon illustration is more likely to be perceived credible ($p<0.01$) and interesting ($p<0.01$).

Figure 8. The statistical result of experiment 4

	Group4(1) vs. Group4(2)		
	Mean difference	T Value	p Value
Credibility	-1.1333	-5.1387	0.0003 (<0.01)
Interestingness	-1.75	-8.2298	0.0000 (<0.01)

5. DISCUSSION

The content delivered by the public account should be noticed and read and then it would come the possibility that people would adjust their living styles. It is one of the most discussed topics for those account owners to improve the perceived interestingness and credibility. There are already a lot of researches on the characteristics and reading habits of readers. Their analysis is essential. However, attention should also be paid to the presentation or organization of the content and background information like the necessary introduction of the author. Even information delivered is of the same topic, author and format, it may be decoded differently depending on how it is organized. This research focuses on four factors in terms of authority and content in respective. The results come that the background introduction of source and the format will have significant influence on both the perceived credibility and interestingness. And the degree of professionalism of author will affect people's judgment of whether the content is true.

6. CONCLUSIONS AND FUTURE STUDY

On the basis of results of the experiments mentioned above, here comes the conclusion that the content from a professional source of trustworthy author, in a vivid cartoon format is more likely to be perceived credible. And the information from professional source of cartoon format is more easily to be thought interesting.

There are a lot of challenges for this study and there is a lot room for the further research. We are unable to find enough participants for each experiment of diverse demographic and education background not to say choose participants totally randomly. As a result, the results of this research may not suitable for explain all the WeChat users' preferences. In addition, due to the limitation of fund and time, we only had four one-factor experiments this time. While there may be cross effects among those four factors. So the 2x2x2x2 design for experiments would be a better choice for the further study in this field. Last but not least, the measurement of perceived credibility and interestingness is hard to achieve, because it is a kind of personal feeling which is hard to test through any objective standards.

ACKNOWLEDGEMENT

This research was supported by the National Natural Science Foundation of China (71573022, 71403029), Beijing Philosophy and Social Science Planning Project (13JGC085), Fundamental Research Funds of Beijing Foreign Studies University

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