

Extending the Cognitive Mediation Model to Examine Personal Body Dissatisfaction: Media Attention, Information Processing and Healthy Diet Knowledge Acquisition

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Abstract: Trapped in this fast-paced society, concerns about personal healthy conditions especially the outcome of unhealthy eating habits have been raised recently. As most of the youth embraced the digital media as a tool to be informed of updated healthy eating information, the study tried to explore whether or not their healthy eating literacy have been enhanced via their increasing attention to the relevant information based on the theory of the Cognitive Mediation Model (CMM). And how their increasing knowledge gain affected their attitudes to their body conditions. The method of path analysis were used to finish the survey, confirming the critically positive role of elaboration and engagement from the youth's attention to the youth's knowledge gain in terms of the healthy diet, and revealing that a higher level of knowledge gain corresponded with a lower satisfaction of their body conditions. These conclusions go a step further to link the cognitive factors change in the CMM to an affective factors change, extending the CMM to be a mediator for the subsequent research on healthy eating behaviors.

Keywords: cognitive mediation model, personal body dissatisfaction, media attention, information processing, healthy diet knowledge acquisition

1. Introduction

Faced with extremely fierce competition and imposed on heavy burden in everyday life, the young generation is proven to increase the likelihood to engage in detrimental eating behaviors commonly, such as irregular meals, eating instant food only, hardly keeping the balance between fruits and vegetables. Fortunately, young people themselves have a relatively clear understanding of this series of issues. According to the survey of Chinese Residents' Health Satisfaction in 2022, 80% of adults aged from 18-26 were discontent of their health conditions, and an important dimension of evaluation is their unhealthy dietary. Last year, China Youth Daily and China Health Management Association launched a report about dietary habits of the young generation, which manifested that most of youth shared the same belief that "A healthy life depends on your diet". As the first generation to have grown up with the access to the Internet where social media derived from, they are more likely to

discuss with the peers about the topic of healthy eating online, displaying their own dietary ideas and obtaining relevant information. “Wellness” “Organic” and “Nutritious” have become buzzwords in their discussion, reflecting the young generation’s pursuing of health eating. Yet back to the real life offline, unhealthy eating habits are threatening their fitness with a hectic life and long-term pressure. Consequently, having health care products to maintain wellness would even be seen as remedies for more and more people.

The report launched by China Youth Daily and China Health Management Association also shown that more than 60% of youth got used to binge, and more than 40% of them said they had gastrointestinal diseases. Goals to strengthen the immunity and to improve their gastrointestinal function are the dominant contributors to the youth eating health care products. When it came to keeping balance in personal dietary, merely 30% of the youth admitted that they attached great importance to a balanced dietary, while more than 60% of an interviewee never even had a glimpse of the ingredient and heat table printed in the food packaging bags. And the reasons why they develop such behavioral habits were the convenience, efficiency which were critical in their hectic life, as well as the feelings of being relieved when indulging themselves in eating fast-food without any attention to the ingredients. In addition, it is the kind of low-carbon, low-fat meal or light meal that serves as an alternative for the youth today. According to the data released by Emmy Consulting Corporation, between 2017 and 2022, the scale of China’s light food industry climbed by nearly 140 billion yuan. In essence, what all of the statistics listed above reflect is the helplessness of the young generation to balance a fast-paced life with a healthy diet and their persistence on trying to keep a healthy diet.

At the same time, there are still some new problems which are worth discussing in the contradictory between the pursuing of healthy dietary and the result of disordered eating symptoms. More than half of the youth are ready to adopt the expertise or the advice of professional organizations and can be easily influenced by KOLs in the healthcare field. Given the complicated information on the Internet, often mixed with irrational communication and fake news, are these perceptions online entirely correct? When the youth pay attention to numerous eating information in the social media, will their elaboration and engagement of these information affect their attitudes to their own body? Will they feel more satisfied, or more dissatisfied? These questions lead to the starting point of the research. Additionally, the quantity of knowledge that people learn varies depending on how much exposure they have to social media and how the information is spread. Understanding the process of information acquisition can help explain how people use social media, thus we can better use social media to disseminate knowledge and encourage the youth to develop healthy eating habits, escalating their satisfaction of their own body.

2. Literature Review

From previous researches, the study found that Cognitive Mediation Model (CMM) could give the research a sound theoretical foundation to help it identify the process by which young people acquire knowledge about healthy eating from social media. The study developed this model in the following ways to further analyze the connection between young people’s views toward their bodies and the health knowledge they gain via social media. Here are the conceptualizations of each way below.

2.1. Cognitive Mediation Model

The Cognitive Mediation Model was proposed to explore the learning process of political news [1]. This model involves three components: motive for surveillance, processing of information, and knowledge acquisition. The concept of information processing has been upgraded to take into account elaboration and interaction with digital media [2]. Surveillance motivation refers to individual

attitudes to being informed about new information timely, affecting individual media engagement and information-processing behaviors [3]. Then the information processing is the heart of CMM. More cognitive digging into the topic at hand occurs as processing depth increases, which leads to more effective comprehension [4]. Knowledge refers to the memory formed after the whole process above.

While many CMM studies concentrate on knowledge factors as a function of information acquisition, Eveland contends that the theory could be strengthened by taking into account more aspects as outcomes [3, 5]. Then, a research has discovered that individuals' assessments of diverse scientific concerns are influenced by emotional aspects as well as cognitive variables, such as understanding of issues developed throughout the information-elaboration process [6]. Therefore, it will be interesting to investigate whether these variables can be used as both the result of information processing and the predictor of personal specific emotions.

Therefore, this study attempts to use the consequence of CMM as a mediator to explore the connections between healthy eating knowledge acquisition and personal attitude to their body beyond access to scientific knowledge.

2.1.1. Healthy Diet Knowledge

Plenty of proof that cognitive variables affect food intake include understanding of nutrition and health issues have been discovered [7]. The CMM is currently often employed to comprehend how the general public acquire information of healthy eating and respond with it. Many young consumers now use social media posts, restaurant reviews, recipes, and images to decide what to eat [8]. The desire of young people to use the Internet as a resource for health information is very essential [9]. In 1995, just 3% of respondents cited the Internet as a nutrition resource; today, 11% of respondents rank it third among nutrition information sources, after periodicals and television.

Faced with numerous information, however, previous studies did not use CMM to explain how the youth choose to process healthy eating information, and to what extent the knowledge obtained after in-depth processing can improve their knowledge level in diet health. This study used CMM to explain such a process.

2.1.2. Social Media Information Processing

Youth (aged 18 to 25) spend more time each day engaging with media and technology than any other activities [10], and they have a special affinity for technologies that facilitate engagements [11]. While adolescence has been suggested to be a crucial time for the formation of long-lasting healthy habits [12], various factors can influence the accumulation of knowledge about healthy eating, as well as the perception of an atmosphere in which most of people pursue healthy eating.

Social media is the first element of the current 18–25 age group's home environment, and it may also be a key indicator of how young people should eat for health [13]. The majority of young people agree that using social media does affect young people's health behaviors. [14]. It makes sense to look at the connection between young people's social media consumption of data and a healthy diet among young people given the relationship between environmental variables and health habits. The social media involved in this study are mainly social platforms and content sharing platforms commonly used by Chinese youth groups, including WeChat, Weibo, Little Red Book and TikTok, which have a large user scale, basically covering all Chinese youth groups.

Additionally, using the social media, people would not only elaborate when pay attention to messages, but also engage in using this information, such as sharing information, liking or disliking, and engaging in online heated discussions [13, 14], which are defined as digital media engagement

[5]. This study used elaboration and digital media engagement as two variables to evaluate personal information processing.

As a result, the following hypotheses were postulated:

H1: Information Explanation and Attention to Healthy Eating Information in Digital Media are Positively Associated.

H2: Engagement in healthy eating information on digital media is positively correlated with attention to healthy eating information on those platforms.

H3: Knowledge acquisition about healthy eating is strongly correlated with information elaboration.

H4: Knowledge acquisition on healthy eating is favorably correlated with digital media engagement in this area.

2.1.3. Body Dissatisfaction

In all cases, the more body dissatisfaction there is, the more interference with eating [15]. Body dissatisfaction is the term for the adverse subjective assessment of one's physical features, such as body type, weight and stomach [16]. It is a psychological variable and the core of the developmental model of eating disorder symptomatology [17, 18]. The largest predictor of eating disorder symptoms, according to many studies, is body dissatisfaction, which is frequently mentioned as a crucial factor in the emergence of eating disorders and clinical eating difficulties [19, 20].

But there is limited research on the reason of personal dissatisfaction of their body, and how their social exposure especially the acquisition of healthy eating knowledge via the digital media affects their attitudes to their body. Therefore, this study took body dissatisfaction as an outcome of the knowledge processing and an extension of CMM at the level of an individual's attitude.

Thus, the following hypothesis was postulated:

H5: The acquisition of healthy eating knowledge is negatively related to the level of personal body dissatisfaction.

Figure1 shows the completed path analysis relationship among all variables.

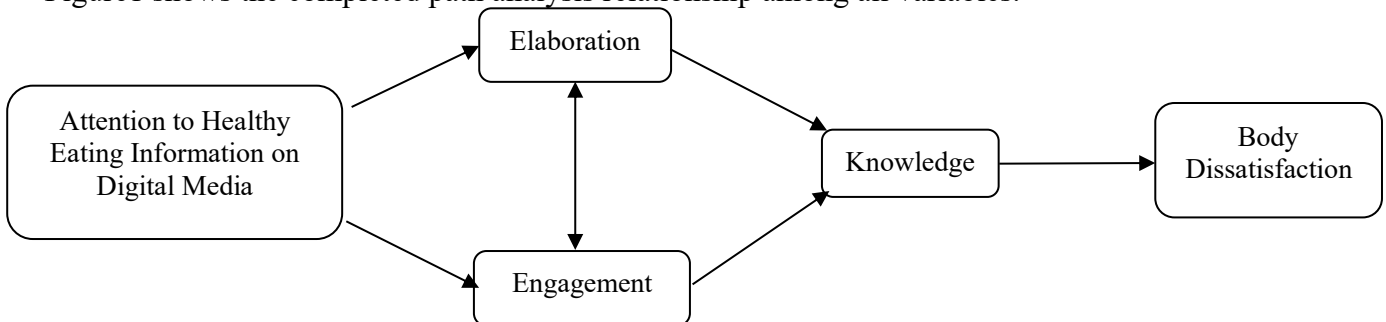


Figure 1: Hypothesized model.

3. Methodology

This study employed quantitative research, carrying out a Chinese-language online survey of young adults in August 2023. According to earlier studies, young individuals between the ages of 18 and 30 frequently experience a change in their way of life [21, 22]. Thus, this study disseminated online questionnaire made by Questionnaire Star through various social media groups which gathered young generations aged from 18 to 30. Researchers asked people if they wanted to participate in this survey voluntarily when they recruited participants by initially setting up with a voluntary or non-voluntary question. There were 92 qualifying respondents in the final sample. Their average age was 23.5, and 17.4% of them were men. All the descriptive statistics can be seen in the Table1.

3.1. Attention to Healthy Eating Information

The attention to healthy eating information was measured using the items employed in a previous study [3, 23]. Respondents were requested to rate how much attention they gave to the following media channels with multiple features, using a 5-point Likert scale (1=no attention at all, 5=a lot of attention): (1) WeChat &QQ; (2) TikTok; (3) Weibo &Red Book.

3.2. Information Elaboration

Two items modified from a previous study were used to test the extent to which respondents elaborate health information [5]. Respondents were asked to rate their agreement with the following statements on a 5-point Likert scale (1 being extremely disagree, 5 being extremely agree): (1) “When using media for information, I meticulously evaluate information about healthy eating”; and (2) “I often connect information about healthy eating to my daily life.”

3.3. Digital Media Engagement in Healthy Eating Information

Three measures adapted from earlier study [14] were used to figure out how interested respondents were in digital media about a healthy diet. Respondents were asked to rate how frequently they “like” contents about healthy eating, (1) “post your own opinions or remarks on healthy eating,” (2) “repost information related to healthy eating,” (3) “repost information related to healthy eating,” and (4) “collect information about healthy eating” on online media” (1=frequently, 5=hardly ever).

3.4. Health Knowledge

The items adapted from a previous study [5] were used to assess respondents’ healthy literacy. The following assertions were presented to respondents who were asked how much they agreed with each: (1) “rice is a major source of daily energy”; (2) “7-8 cups of water should be consumed each day”; (3) “25 or more kinds of vegetables should be consumed per week “.

3.5. Body Dissatisfaction

The questions modified from earlier research were used to gauge respondents’ fulfillment with their bodies [24]. Using a 5-point Likert scale (1=extremely dissatisfied, 5=extremely satisfied), the following assertions were presented to respondents and asked whether they agreed with each: (1) “Are you satisfied with your height?” (2) “Are you satisfied with your weight?” (3) “Are you satisfied with your bowel function?”

4. Results

This study used path analysis to process and analyze the data collected from 92 effective questionnaires. The Path Analysis Model had a satisfactory fit, $X^2= 38.952$, $p = 0.000$, $RMSEA = 0.31$, $CFI = 0.926$, and $RMSEA= 0.31$ [25]. Bivariate correlation analysis proved that all variables had strong correlation, which could be seen in the table 2.

Table 1: Descriptive statistics(N=92).

<i>Variables</i>	N=92		
		M	SD
Gender			
Male	17.2%		
Female	74.2%		
Age (15-20,20-25,25-30,30+)		23.5	0.62
Attention to Healthy Eating Information (range from 1 to 5)		3.10	0.87
Wechat & QQ		2.74	1.12
Tiktok		3.38	1.31
Weibo & Red Book		3.20	1.21
Information Elaboration (range from 1 to 5)		3.25	0.76
Elaboration 1		3.30	0.84
Elaboration 2		3.20	0.91
Digital Media Engagement (range from 1 to 5)		3.23	0.60
Engagement 1		3.54	0.91
Engagement 2		2.49	0.97
Engagement 3		3.12	0.72
Engagement 4		3.77	0.87
Health Knowledge (range from 1 to 5)		3.33	0.82
Knowledge 1		3.49	1.21
Knowledge 2		3.29	0.98
Knowledge 3		3.22	0.82
Body Dissatisfaction (range from 1 to 5)		3.22	0.94
Body Dissatisfaction 1		3.23	1.15
Body Dissatisfaction 2		3.09	1.05
Body Dissatisfaction 3		3.34	1.09

Table 2: Bivariate Correlations among All Variables (N = 92).

	(a)	(b)	(c)	(d)	(e)
(a)Attention to Healthy Eating Information	–				
(b)Information Elaboration	0.717**	–			
(c)Digital Media Engagement	0.765**	0.752**	–		
(d)Health Knowledge	0.580**	0.672**	0.855**	–	
(e)Body dissatisfaction	-0.552**	-0.599**	-0.710**	-0.855**	–

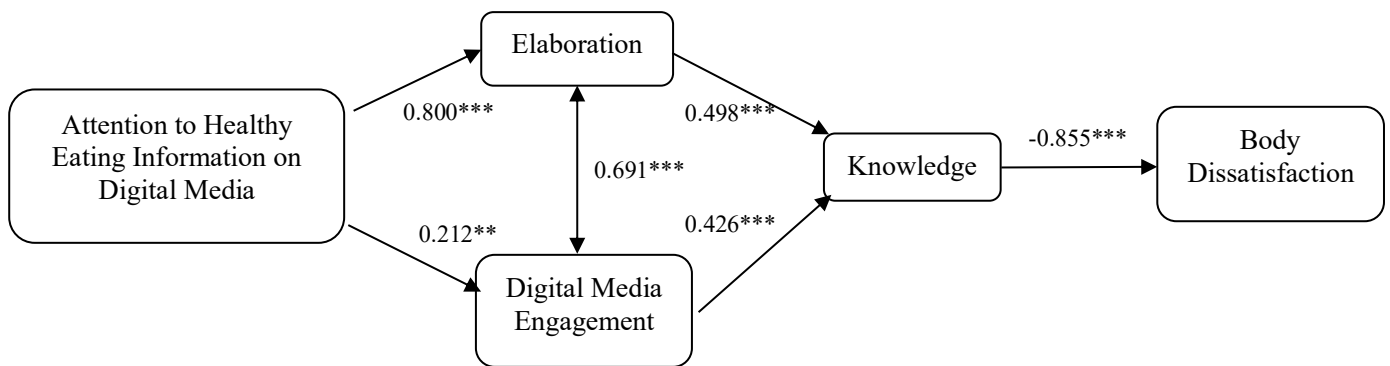


Figure 2: Final model with standardized path coefficients(N=92).

Structural equation model with path coefficients (N = 300). Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

H1 posited that the more attention you pay to healthy eating information, the more likely you could elaborate the information about healthy diet. As illustrated in Figure 3, this path from attention to healthy eating information on digital media to information elaboration was significant ($\beta = 0.717$, $p < 0.001$). H1 was supported.

H2 posited that media digital engagement in healthy eating information is favorably associated to attention to healthy eating information on digital media. As shown in Figure 3, there was a positive and significant link between attention to information about healthy eating on digital media and interaction with that information ($\beta = 0.212$, $p < 0.05$). As a result, the more attention you give to healthy eating advice in the media, the more likely you are to use it to support H2.

According to H3, learning about healthy eating is favorably correlated with information elaboration. Figure 3 shows a substantial correlation between the development of healthy eating knowledge and the elaboration of healthy eating information ($\beta = 0.691$, $p < 0.001$). H3 was supported.

H4 proposed that learning about healthy eating was positively correlated with information elaboration. This positive connection was significant ($\beta = 0.804$, $p < 0.001$), as seen in Figure 3. As a result, higher levels of healthy eating literacy were associated with greater elaboration of knowledge regarding healthy diets. H4 was supported.

H5 hypothesized that the acquisition of healthy eating knowledge was negatively related to the level of personal body dissatisfaction. As displayed in Figure 3, this negative correlation was significant ($\beta = -0.855$, $p < 0.001$). Therefore, a higher level of healthy eating literacy was associated with a lower dissatisfaction of the body. Because the 5-point Likert scale set by the study used “1” to refer to “extremely dissatisfied”, and used 5 to refer to “extremely satisfied. The more you dissatisfy your body, the lower scores would be remarked. Consequently, the higher scores in the healthy eating knowledge were related to the lower scores in the dimension of body dissatisfaction, as well as showed that the respondents were more likely to feel dissatisfied about their body.

In conjunction with the aforementioned findings, this study demonstrated a substantial indirect effect of knowledge via digital media interaction on attention to healthy eating information, although there was a less significant association between the elaboration and knowledge acquisition. This study also showed how learning about healthy eating through digital media may negatively impact people’s attitudes on their own bodies. The outcome of the path analysis model can be seen in the Figure2.

5. Discussion

The study looked at an expanded model built based on the CMM that integrated developing good eating habits with personal social media use. This study discovered a substantial correlation between in-depth processing of information on a certain issue, notably social media use, and the development

of knowledge in the same field, which is similar to earlier CMM studies on health [4] and the science and technology community. This study also revealed a connection between someone's amount of knowledge about healthy eating and their level of body dissatisfaction.

Firstly, it has been demonstrated that media use helped to motivate young people to take an active interest in learning about healthy eating. This is in line with earlier studies that demonstrates how much younger customers are now considering nutrition. Associated content shared on social media, including as reviews and images, as well as their online interactions with food [8]. As they go into the stage of cognitively linking new knowledge with existing memory, young people are ready to use the Internet as a source of health information given the plethora of material about healthy eating [9]. Empirical studies have demonstrated that exposure to information on the Internet causes processing actions, which in turn support these relationships in major part. This is according to Eveland [3].

This study not only applied this conclusion to analyzing cognitive factors changing when the youth absorbed new information related to healthy eating, coming to the same conclusion, but also compared different ways people engaged in such information. According to the figure1, the respondents are inclined to use content platforms such as Weibo, Red Book and typical short video platforms such as TikTok to access information about healthy diet. This phenomenon might because that the information dissemination of WeChat is more private and mainly illustrates information via, while TikTok, Weibo and Red Book are more popular and have more information sources. At the same time, TikTok has become the most popular healthy diet information exchange platform for young people due to its visual stimulation, short speed and easy addiction.

Additionally, the manner that the younger generation interacts with online content that promotes healthy eating is unique. They build new cognitive connections between the new information and their prior knowledge when they process information thoroughly [3]. They are also less likely to remark or repost the material, but they are more likely to "collect" and "like" the new information first, as seen in Figure 1. Since the behavior of "collecting" and "liking" healthy eating information is more likely to occur when people are exposed to new information, comments may reflect their inherent awareness and attitudes toward the information. This may reflect their enthusiasm for engaging in healthy eating information. Information regarding to healthy diet may not be a social topic most of the time that the youth concern about in digital media, but the information that the youth choose to "collect" as a way to self-improvement. Therefore, for healthy diet information providers, such as official health institutions and we-media specializing in health diet, utilizing digital media to actively disseminate personalized healthy diet information to divided groups, and emphasizing the benefits of healthy diet to oneself, could better adapt to the deep processing mode of most young people.

The findings supported the proposed correlations in terms of how information processing contributes to knowledge acquisition. It has been proven that thorough processing of information on healthy eating can assist young people improve their understanding of this topic, including dietary structure and eating frequency. This study's focus on body dissatisfaction as a result of information processing that goes beyond the CMM's intended objective is a significant contribution. The findings revealed that as young people increased knowledge on healthy eating, their satisfaction with their current physical health decreased, at least in terms of height, weight, and gastrointestinal function. The association between access to healthy eating information and people's perceptions of their bodies was examined using the entire CMM as a mediator. The findings supported the proposed correlations in terms of how information processing contributes to knowledge acquisition [16]. It has been proven that thorough processing of information on healthy eating can assist young people improve their understanding of this topic, including dietary structure and eating frequency. This study's focus on body dissatisfaction as a result of information processing that goes beyond the CMM's intended objective is a significant contribution. The findings revealed that as young people increased

knowledge on healthy eating, their satisfaction with their current physical health decreased, at least in terms of height, weight, and gastrointestinal function. This relationship between access to healthy eating information and people's perceptions of their bodies was examined using the entire CMM as a mediator.

The study went a step further and elaborated on dissatisfaction with their bodies as a primary outcome of digital media use, demonstrating that the views of individuals are greatly impacted by the cognitive shifts they experience in the area of healthy eating as a result of intensive information processing and active participation in digital media. This result supported Eveland's prediction that the impact of the elaboration would extend to affective elements [3]. It also strengthened the CMM model's connections to other research projects attempting to explain how people's attitudes toward physical fitness and a healthy diet can affect their behavior. For instance, literature may go further to investigate whether readers will alter their eating habits or develop new ones in response to the expertise about healthy eating they have acquired by careful information processing.

6. Conclusion

This study established a link between young people's interest in learning about healthy diets and their body dissatisfaction by extending the CMM to include this variable. The investigation unveiled a potential explanation for the young people's persistent and growing concerns about their dietary health. Their regular exposure to healthy eating information on digital media motivates them to elaborate and actively engage in such information, enhancing their knowledge and making them unhappy with their own physical condition, which may get worse due to unhealthy eating habits. These findings may be relevant to many academics studying eating disorder behaviors and other topics, offering a potential explanation in the dimension of affective components through the extension of the CMM.

Even though every question in this study passed the validity test, there were only 92 qualified surveys because of the study's restricted funding. This reduced the validity of the results and diminished their trustworthiness. Eliminating the differences of the bias in the data could be difficult for the study and the results because of the inadequate number of respondents to the questionnaire. Additionally, the questionnaire's multiple components allow for the reset of information about healthy eating. Currently, the questionnaire just asks about eating frequency and food composition, which is a rather straightforward topic. The average fit of the model we recommend necessitates a closer examination of scales, which require additional validation to take into account more factors. Due to the fact that such eating habits have become new trends for today's young population, additional dimensions, which include light food-related information, might be incorporated. Future studies may also uncover additional mediators, such as views of the risks and benefits of the information received on healthy eating from digital media, as well as confidence in the various sources of information. Increasing the variation that the postulated model could clarify hence has an advantage.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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