

온라인 다이어트 메시지의 텍스트와 이미지 정보 유형이 사회비교, 정서반응 및 행동의도에 미치는 영향

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Influence of Evidence Types in Online Weight Loss Messages on Social Comparison, Emotions, and Behavioral Intentions

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[요 약]

본 연구는 온라인 다이어트 및 체중감량 관련 정보가, 제시 양식(텍스트 vs 이미지) 및 각 양식별 근거 유형(텍스트: 과학정보/사례정보, 이미지: 모델사진/전후비교)에 따라 여성 이용자의 사회비교, 감정반응 그리고 행동의도에 미치는 영향을 살펴보았다. 다이어트 관련 온라인 커뮤니티 이용자들을 대상으로 실험연구를 실시한 결과, 과학정보는 사례정보에 비해 신뢰성이 높았으며 상향비교는 낮았고, 마른 이상형 신체 이미지의 경우 다이어트 전후 비포애프터 이미지에 비해 신뢰성은 낮았으나 상향비교는 더 높았다. 사례정보는 과학정보에 비해 수치심을, 마른 이상형 이미지는 비포애프터에 비해 수치심과 부러움의 감정이 더 높았다. 이러한 제시 양식과 근거 유형들은 희망과 같은 긍정적인 정서에는 유의한 영향이 발견되지 않았다. 흥미롭게도 이미지 유형들은 상향비교 정서들을 텍스트에 비해 더 많이 불러일으키는 경향이 있었으나 다이어트 행동의도에 대해서는 이미지보다는 텍스트, 특히 과학정보 텍스트가 더 긍정적인 영향을 미치는 것으로 나타났다.

[Abstract]

This study examined whether the text and image information, i.e., evidence types of online weight loss messages, have different persuasive impacts on users' social comparison, emotional responses and behavioral intention for diet. An experiment was conducted in order to compare different types of text and visual messages, i.e., "thin ideal body vs. before/after images," along with "scientific vs. exemplar texts." The results found that compared to exemplar, scientific text showed greater trustworthiness and lower social comparison; thin ideal image showed lower trustworthiness and greater social comparison than before/after. Moreover, exemplar showed greater shame than scientific text, whereas thin ideal image showed greater shame and envy than before/after image. Interestingly enough, image evidence provoked upward comparison emotional responses; however, as for the behavioral intention, textual evidence than visual, especially scientific text appears to be more effective.

색인어 : 온라인 다이어트 정보, 근거 유형, 사회비교, 정서반응, 행동의도

Keyword : Online weight-less messages, Evidence type, Social comparison, Emotions, Behavioral intention

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I . Introduction

It is safe to say now that nowadays most of the information that one come across every day comes from the web. People either scroll through news web sites' home pages, SNS profiles or communicate with other Internet users. All this information an individual is exposed to everyday is believed to be able to affect them in different ways. The aim of this study is to explore which ways exactly.

One of the classics of the body image studies is the one[1] who examined Playboy magazine centerfolds throughout the time(1959-1978) and the changing body shapes on them. The researchers examined bust and hip measurements and weights of centerfold women and found that the weight of the women on the centerfolds was significantly lower than weight of an average woman of the same time period. Together with those findings they did also find the decrease in centerfold women bust and hip measurement, meanwhile the height of those women increased throughout the time. Taking into consideration the content of several women's popular magazines, such as Harper's Bazaar, Vogue, or McCalls, this study also found a significant increase in the number of diet articles[1]. Even though there are numerous research on this topic, the media continues to grow and expand, thus creating possibilities of further research.

Given the number of health-related web-sites, blogs and articles on the Internet it is not surprising that they are widely being used to get health-related information. They provide individuals with relevant information on whatever people are looking for, be it explanations, symptoms or even ways to treat something[2].

Health and beauty information related communities, specifically, are used in various ways: mostly being run by professionals or unprofessional individuals, they give and share advices, recommendations, do-it-yourself(DIY) tips on how to do or prepare something at home, post motivational or informational pictures and articles, diet recipes or workout tips.

Over the years the Internet has become the most important tool that can not only be used for one's own profit but that can also be harming to one's psychological state. Especially information design be it verbal or a non-verbal type of communication has a very big influence on the viewers.

Previous research on textual and photographic self-disclosures for example found that textual cues have stronger influence on impression formation and social judgements than photograph cues when used alone make[3]. However, they also discovered that when the same cues are presented simultaneously in the context, with all other profile information remaining constant, photographs have more impact on viewers' judgments.

This creates the base for argument whether the text or image has more impact on viewer's perception and judgement. The study[3], however, focused mainly on impression formation in social networks whereas the present study will not only look closely at the impact of textual and photographic cues in the context of health related communities but will also explore the differential influences of the major types of health and beauty information online on health behaviors.

It is easy to see how graphic images can be influential in terms of body dissatisfaction, however, regarding the textual cues, there are numerous articles in popular magazines and thematic internet communities that give advices, diet and weight loss tips to promote a skinny lifestyle among their audience, that is, mostly females.

Previous studies have mostly shown how various information can be presented in a way that affects women's body image, their self-esteem and perceptions, women's thoughts and behavior patterns[4]-[9]. Women are being exposed to these perfect, ideal body images through all kinds of media such as television and magazines or Internet[5]. And it all has the power to change not only an individual's everyday routine but even how they think of themselves, too.

Pladocostante[5] argued that the different kinds of media, such as popular women magazines and television proved to be a source for causing eating disorders and psychological disorders in women. Moreover, there is also a connection between the media and the thin ideal body image that has been forming in the minds of women throughout these years.

In the media, women are usually portrayed as thin and practically perfect, with ideal skin and lean bodies. So there is no wonder that the comparison with such pictures would cause negative consequences[10]. A relationship has been found between an individuals' exposure to such media and body dissatisfactions among females, such as drive for thinness and eating disorders[11].

As long as it all can seem motivational to some women, and lead to positive change of one's life patterns, it can also be harming to others, especially to those not stable mentally, or in other words, high in neuroticism. Research on the moderating effects of five-factor traits[12] found that neurotic women felt worse about themselves after being exposed to the images of thin and beautiful women/models.

II . Literature Review

2-1 Scientific vs. Narrative text

The topic of the influence of textual cues on reader's perception and impression formation is not new to anyone studying Computer Mediated Communication. One study[3], for example, studied the influence of textual and photographic cues on impression formation and found that textual cues alone can have a stronger influence on people's judgments about one's personality than photographs. This results show that verbal content has more influence than visual content, at least in terms of impression formation.

When it comes to health or beauty related context of the communities or blogs, a lot of past studies addressed the differences between the impact of narrative texts (personal experience, review etc) or scientific texts (statistical data, evidence) on health related behaviors[2], [13]. The study on the influence of narrative vs. statistical information on risk perceptions of vaccination[2], for example, found that with an increasing number of narratives, the intention to vaccinate decreased significantly. Even though the experiment showed that statistics were not totally ignored, narratives still had bigger impact on decision making of the participants.

According the study[13], results on the role of statistical evidence and its superiority to anecdotal evidence, statistical evidence is more persuasive than anecdotal evidence within the context of an argument by generalization; anecdotal evidence proves to be as persuasive as statistical evidence within the context of an argument by analogy. In this study, however, it is important to not only describe the influence of the information, but also detect if there are any strong emotions aroused in a result of being exposed to it.

Narratives (also known as testimonials or anecdotes) are believed to be story-like pieces that describe someone's personal experience from a first- or third-person perspective[2]. Narratives usually provide the readers with relevant details, characteristics of something and personal opinions. In terms of health and well-being communities, the narratives are frequently used to aid users in health and beauty decisions, and other types of relevant information. Usually there are plenty of narrative comments and advice postings based on personal experience in these theme communities such as weight loss, beauty or fashion (specifically) where one can not only seek for information but also share experience or read others' stories.

Previous studies showed that presenting statistical (scientific) information in an enhanced graphical manner reduces the effect of narratives, the effect, by far, did not disappear and was still somewhat stronger than the effect of statistical information[14].

Research[15] that addressed the topic of HPV risk perceptions influenced by narrative and scientific texts, tried to find out whether a narrative or statistical format of evidence would be

more effective at influencing risk perception and behavioral intention in the direction advocated by a health message. Their findings suggest that the hybrid message containing both statistical and narrative descriptions of HPV resulted in greater perceived risk of getting HPV than either of the messages containing only one evidence type[15]. These results are intriguing for risk prevention, however we address the promotion of weight loss and ideal body image, expecting a slightly different conclusion.

Other research suggests that narrative text communication is more persuasive than didactic communication; information communicated through narratives often results in greater acceptance through narratives' ease of processing and comprehension[16], generation of fewer counter arguments[17], and increase in self-efficacy through modeling and identification[18].

One study[2] found that reading narrative articles about adverse events increased perceptions of the risk of their occurrence among their experiment participants. Despite the existence of many different studies on the influence of narrative texts and statistical evidence (scientific text), the scholars are still unable to find which of the types separately has greater effect. They say there is always an impact of affect and emotions and of course the content of the text. That is why it is necessary to study the effect of these text cues together with emotional states and social comparison.

2-2 Thin ideal body vs. Before/After image

The study[3] about the differences between textual and photographic cues and the impression formation suggested that visual primacy might refer to the relatively stronger effect of visual cues on impression judgments than verbal or vocalic cues and that people pay greater attention to visual cues than verbal cues. Their research however found that photographic cues had more effect when they were presented together with the consistent textual cues. Previous studies suggest as mentioned earlier[4]-[9], that graphic images have a great impact on women, their way of thinking, self-esteem, emotions and behavior. It is suggested that media consumption and the level of body image satisfaction are related.

This paper deals with beauty and health related communities, which suggest that in this particular area the impact of photographic cues (images) might be different. Two most common types of images one can encounter in health and beauty related communities are – before and after images, and model images.

Model images summarize altogether the pictures of thin women imposed by media such as fashion and beauty magazines. There were quite many studies on the effects of exposure to ideal thin media images on women's body satisfaction. The thin ideal

body image is the concept of the perfectly slim female body. The common perception of this ideal is that of a slender, feminine physique with a small waist and little body fat[19].

One study[20], for example, studied the effect of idealized media images on social comparison and body satisfaction and found that exposure to idealized body images and thus appearance comparison processing had negative outcomes on mood and body dissatisfaction. They found however, that those who used intelligent information (idealized body images) processing did not show negative effects on body satisfaction or mood. Other researchers[21] earlier studied the effects of exposure to thin body images in the context of body mass index and neuroticism and found that exposure to thin media images, regardless of levels of neuroticism and body mass index was associated with greater body image dissatisfaction.

There are however no existing studies on the effect of before/after images versus model images on body image satisfaction, emotions or behavioral intentions. This study suggests that, unlike thin model images, before/after pictures in health and beauty related communities, especially weight-loss related communities, might have a greater effect on female viewers.

Opposed to the ideal body images this study suggests to examine another types of images: before/after effects of dieting or exercise shared by regular people. Before and After images depicting attainability of the target under comparison may serve as examples for those who are unsatisfied with their body, which can be supported by exemplar/exemplification theory.

Exemplification theory is a well-established theoretical field in mass communication[22]. According to this theory exemplars are case reports used to represent characteristics typical of a group of event[23]. Commonly, exemplars are illustrative representations of information. An exemplar usually provides a demonstration of an event, in our case the changes in body obtained by dieting or physical exercise. Exemplification thus 'indicates recognition of shared features between an exemplar and the exemplified, as well as between all possible examples of the exemplified. In simple terms, such sharing amounts to similarity between exemplars and the exemplified'[22]. In other words, exposure to 'before' and 'after' images as the examples of successful weight loss for instance can motivate other people's intentions to self-improvement and goal achievement.

According to a study[24] of exemplars on TV and News a) the use of exemplars has an effect on public opinion and b) this effect is much stronger than the effect of base-rate information such as statistics or official information. 'Even if the latter kind of information has greater validity and is more representative, people tend to rely more on individual illustrative stories to form their opinion'[24].

The current study will focus on the comparison of before/after images and this ideal body pictures on the viewers' emotional response, social comparison and health related behavioral intentions.

2-3 Social comparison, emotional responses, and behavioral intention related to health information

Social comparisons are usually described as comparisons between the self and others. This is a fundamental psychological mechanism influencing people's judgments, experiences, and behavior. People constantly engage in social comparisons, whenever they are confronted with information about how others are, what others can and cannot do, or what others have achieved and have failed to achieve, they relate this information to themselves[25]. Social Comparison Theory proposes that there is a drive within individuals to gain accurate self-evaluations[26]. In other words, people always want to compare themselves to others.

Social comparison involves self-comparison to superior others (i.e., upward social comparison) or to those who one would consider as worse than self (i.e., downward social comparison)[27]. Upward social comparisons are often motivated by self-evaluation and self-improvement motives, which may highlight a person's shortcomings on relevant attributes[4]. Downward social comparison is motivated by the desire for self-enhancement and suggests positive effect as people feel better about themselves. That is, previous research findings suggest that social comparison to media figures was associated with both emotional responses as well as behavioral motivation[4].

To sum up, previous studies shown interesting results on social comparison's impact on self-body satisfaction and self-esteem. In turn, present study looks closely at social comparison along with different emotional responses and how they can relate to behavioral intentions as well.

There are different emotions that are being studied in this paper, positive and negative. As it is hypothesized, not only positive emotions, such as hope, for example, can be aroused when an individual is exposed to a specific types of information in on-line community. Negative emotions such as envy, guilt or shame can also be easily aroused while looking through such believed-to-be motivational types of information on-line. According to theories of discrete emotions, individual emotions are associated with unique adaptive functions and goals, as well as action tendencies linked to those goals[28-31].

Self-discrepancy theory (SDT) can be also easily applied in this study because the perceived inconsistencies or discrepancies between the actual and ideal self (while being exposed to different kind of information on blogs, high quality or not) may result in

specific negative effects, which, in turn, can motivate or, over time, can develop into patterns of emotional distress.

Lazarus[30] suggests that it is not the comparison alone but the feelings associated with the comparisons that lead to the nature of the behavioral response. Some researchers[32] studied the emotions such as benign envy, admiration and malicious envy and their effect on the motivation for self-improvement. The results of their study showed that experiencing benign envy after an upward comparison led to intentions for self-improvement (in case of this particular study, at school), whereas admiration and malicious envy did not.

One study[4] explored how discrete emotions may mediate the effects of social comparison on behavior and how different emotions, envy and hope in particular, may differentially relate to behavioral motivation in the context of cosmetic surgery makeover programs, especially focusing on envy and hope. The current research, however, has additional emotions that can be aroused while exposed to the above mentioned text and photographic cues - shame and guilt. There have not been any previous studies on shame and guilt in the context of weight-loss, health or beauty related motivations and behavioral intentions.

Other research[33] studied shame and guilt as 'moral emotions'. They proposed that such emotions can motivate people to do good instead of bad. Even if the study emphasized the influence of shame and guilt on immoral or antisocial behavior, current study presumes that shame and guilt can promote healthier behavior and intentions to diet or exercise instead of eating fast food and spending days in front of the TV or computer screen.

Another study[34] described behavioral intentions as one's perceived likelihood of performing a certain behavior, thus saying that stronger intentions contribute to a greater likelihood of behavioral performance. Malone's motivation theory suggests that the three relevant factors in motivation are challenge, curiosity and fantasy. In terms of challenge, some women become highly motivated[5] to follow whatever advice to become as thin, beautiful and healthy as the women on the screen. Sensory curiosity also drives the motivation, it is caused by visual effects that attract attention. Seeing all the videos or pictures, reading advice articles that promote certain lifestyle to become flawless may be highly motivational to make women take steps to change their appearance if they feel their appearance loses compared to images they are exposed to.

As Nabi[4] suggests in her study on emotion that it is not the comparison alone but the feelings associated with the comparisons that lead to the nature of the behavioral response. Thus the present study is aimed to continue on the research and examine if the new additional emotions together with studied hope and envy will be the drivers to behavioral intentions. As the

study[19] found in her study on the effects of exposure to the muscular male body ideal on body-focused negative affect among males, there was a significant correlation between intentions of strengthening the workouts and exposure to the model pictures of muscular ideal males.

III. Research Questions and Hypotheses

[RQ1]: Which types of text (scientific vs. narrative) and image (thin ideal vs. before/after) information in online weight loss messages will be perceived more persuasive? (H1 & H5)

H1: Scientific text will be perceived more trustworthy than narrative (anecdotal exemplar) text.

H5: Before/After pictures will be perceived more trustworthy than thin ideal pictures.

[RQ2]: How will the different types of text and image information in weight loss related communities be associated with viewers' social comparison? (H2 & H6)

H2: Narrative text will influence social comparison more than scientific text.

H6-1: Thin ideal pictures will be more associated with upward social comparison than before/after pictures.

H6-2: Before/After images will be more associated with downward social comparison than thin ideal pictures.

[RQ3]: How will the different types of text and image information in weight loss related communities be associated with viewers' emotional responses? (H3 & H7)

H3: Narrative text will be more associated with emotional responses such as 1) hope, 2) shame and 3) guilt than scientific text.

H7-1: Before/After pictures will be more associated with positive emotions such as hope than thin ideal pictures.

H7-2: Thin ideal pictures will be more associated with negative emotions such as shame, guilt or envy than before/after pictures.

[RQ4]: How much impact the different types of text and image information in weight loss related communities will have on viewers' behavioral intentions? (H4 & H8)

H4: Narrative text will have greater impact on behavioral intentions than scientific text.

H8: Before/After images will have greater impact on behavioral intentions than thin ideal pictures.

IV. Research Method

According to the conditions and the aim of the current study, an experiment was conducted with four differential forms of weight-loss messages online, i.e., two types of textual information (scientific vs. narrative) and two types of image information (thin ideal vs. before/after) among 213 members of eight different Beauty and Health communities from Facebook and VK.com during February 2019. All the participants recruited were women aged 19 – 45 years old average age being 30.16 years old. Their nationality were all Russian residing mostly in Russia but also some who live in Korea, USA and some parts of Europe.

All the experimental materials were taken from the named Facebook and VK communities. The respondents were randomly assigned across different experiment conditions and each person was exposed to only two types of information (one in textual, and the other in visual conditions, with a random presentation order). All dependent variables for this study were measured with 7-point Likert scale statements, from 1 (strongly disagree) to 7 (strongly agree). Reliabilities for all variables are confirmed to be above .75 in Cronbach’s α . Specifically, social comparison items were measured to use the following statements: Upward social comparison, such as “[When I look at these pictures or read this text], I don’t feel depressed about myself.”; Downward social comparison, such as “[...] I feel better about myself.”; Behavioral intention, such as “[...] I feel the desire to follow the example.” or “[...] I feel motivated.”

Experimental materials are shown in Figures below. Two types of image information, i.e., “thin ideal body image” and “before/after image” are seen in <Fig. 1>, and one of the two types of text information, “narrative exemplar text” condition based on stories of personal experience is presented in <Fig. 2>. As shown in <Fig. 3>, “scientific text” condition contains medical, professional and scientific knowledge-based information for health and diet such as the effectiveness of certain nutritional factors or exercises taken from medical news article and academic studies.



그림 1. 실험처치(이미지): 마른 이상형 신체 vs. 전후비교 이미지
 Fig. 1. “Image”: Thin ideal body (left) vs. Before/After

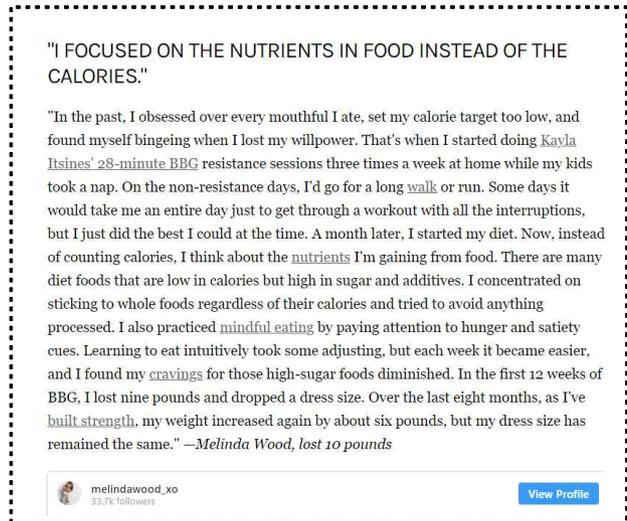


그림 2. 실험처치(텍스트): 내러티브 사례 정보
 Fig. 2. “Text”: Narrative exemplar condition

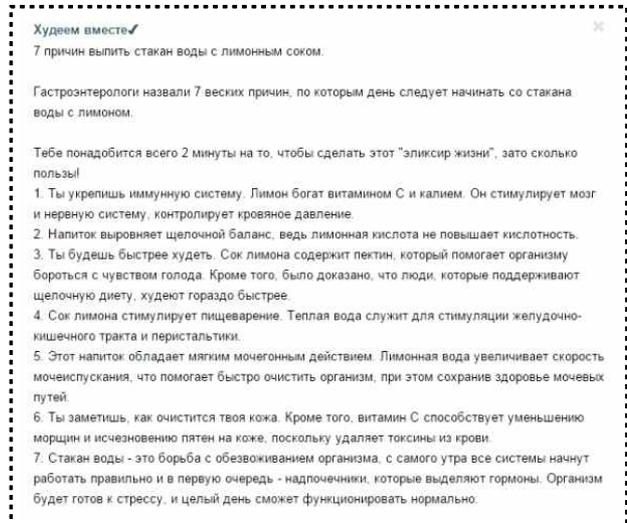


그림 3. 실험처치(텍스트): 과학적 근거 정보
 Fig. 3. “Text”: Scientific evidence condition

V. Results

To test the hypotheses an independent sample T-test was conducted. All the variables were divided into two groups according to the test materials (group 1 – Model Pictures, group 2 – Before/After pictures and group 1 – Scientific Text, group 2 – Narrative Text accordingly).

H1 compared trustworthiness of scientific texts against narrative texts, the test revealed significant relationships between the two variables ($p=.007$) thus supporting the hypothesis confirming that Scientific Text will be perceived as more trustworthy.

H2 stated that narrative text will influence social comparison

more than scientific text. After comparing the results of the T-test it was revealed that narrative text, indeed, was associated with stronger social comparison ($p=.037$) thus supporting Hypothesis 2.

표 1. 텍스트 유형에 따른 신뢰성과 사회비교의 차이 t-test
Table 1. "Text": Trustworthiness and Social comparison

Text	Group	N	Mean	S.E.	t	p
Trustworthiness	Scientific text	98	4.674	.134	2.731	.007
	Narrative text	115	4.135	.145		
Social Comparison	Scientific text	98	3.337	.139	-2.10	.037
	Narrative text	115	3.791	.166		

According to H3 we tested whether narrative text was more associated with emotional responses such as hope, shame and guilt than scientific text. T-test results however did not reveal significant relationships between types of texts and hope ($p=.272$), types of texts and guilt ($p=.488$) and thus H3 in terms of hope and guilt was not supported, but in terms of shame the result was significant ($p=.001$) partially supporting H3 for emotional responses.

표 2. 텍스트 유형에 따른 감정반응 차이 t-test
Table 2. "Text": Emotional responses

Text	Group	N	Mean	S.E.	t	p
Hope	Scientific text	98	3.867	.182	1.101	.272
	Narrative text	115	3.609	.149		
Guilt	Scientific text	98	1.898	.148	-.695	.488
	Narrative text	115	2.035	.129		
Shame	Scientific text	98	1.638	.112	-3.272	.001
	Narrative text	115	2.217	.137		

H5 compared reliability between Model and Before/After pictures stating that Before/After pictures will be perceived as more trustworthy. The result supported the hypothesis ($p=.042$).

For H6-1 we tested if Model pictures will be more associated with upward social comparison than before/after pictures. The test results also showed strong significant relationship between the variables ($p=.000$).

표 3. 이미지 유형에 따른 신뢰성과 사회비교 차이 t-test
Table 3. "Image": Trustworthiness and Social comparison

Image	Group	N	Mean	S.E.	t	p
Trustworthiness	Thin ideal picture	99	3.601	.156	-2.043	.042
	Before/After picture	114	4.791	.138		
Upward Social Comparison	Thin ideal picture	99	3.081	.189	5.065	.000
	Before/After picture	114	1.919	.129		

However, testing H6-2 which stated that Before/After images will be more associated with downward social comparison than model pictures, the test results showed no significant relationship between the two ($p=.810$) thus not supporting 6-2 hypothesis.

According to H7-1 we tested if Before/After pictures were more associated with positive emotions such as hope than model pictures, but the hypothesis was not significant ($p=.189$) showing no significant relationship between the variables. H7-2 was fully supported in terms of all 3 emotions proving that Model pictures were more associated with negative emotions such as shame($p=.000$), envy($p=.000$), or guilt($p=.088$, barely significant with $p<.10$ level) than before/after pictures.

표 4. 이미지 유형에 따른 감정반응 차이 t-test
Table 4. "Image": Emotional responses

Image	Group	N	Mean	S.E.	t	p
Shame	Thin ideal picture	99	2.828	.188	3.980	.000
	Before/After picture	114	1.930	.124		
Guilt	Thin ideal pictures	99	2.394	.190	1.717	.088
	Before/After picture	114	1.974	.154		
Envy	Thin ideal picture	99	3.318	.202	5.765	.000
	Before/After picture	114	1.890	.142		

H4, which stated that narrative text will have greater impact on behavioral intentions than scientific text, was supported revealing significant relationship ($p=.009$) in favor of scientific text.

H8 stated that Before/After images will have greater impact on behavioral intentions than model pictures, but the hypothesis was not significant ($p=.579$).

표 5. 텍스트와 이미지 유형에 따른 행동의도 차이 t-test

Table 5. "Text and Image": Behavioral intentions

	Group	N	Mean	S.E.	t	p
Text	Scientific text	98	4.272	.191	2.636	.009
	Narrative text	115	3.597	.169		
Image	Thin ideal pictures	99	3.545	.174	.556	.579
	Before/After pictures	114	3.687	.185		

VI. Discussions

The purpose of this research was to explore whether and how the different modality of health information (specifically text and image cues) and different types of their evidence (text: scientific vs. narrative; image: thin ideal vs. before/after) have differential impacts on female viewers exposed to them, especially in terms of users' social comparison, emotional responses and behavioral intentions to follow the example. Using the most common types of text and image evidence in weight loss messages encountered online, we conducted an experiment.

The results found that compared to narrative exemplar, scientific text showed greater trustworthiness and lower social comparison, and thin ideal image showed lower trustworthiness and greater social comparison than before/after image condition. Moreover, narrative exemplar showed greater shame than scientific text, whereas thin ideal image showed greater shame and envy than before/after image. Interestingly enough, image evidence seems to provoke upward comparison emotional responses; however, as for the behavioral intention, textual evidence than visual, especially scientific text appears to be more effective for promoting healthy behavior.

On the other hand, the results for narrative texts failed to show significant relationships between types of texts and hope and types of texts and guilt. That may be explained by the contents of the text as to some people some narrative text may be less impactful in terms of emotions than others. This point may require more detailed studying further in the future.

Before/After images, according to the current study were expected to be the most impactful and motivating, were not in fact the ones to trigger strong behavioral intentions or affect some emotions such as hope. Thin ideal body pictures, however, were the ones to trigger the negative emotions: envy, shame and guilt and have greater impact on the respondents' intentions to become like a person in the picture.

Given that it is very rare to find studies analysing textual and visual image information simultaneously and comparing their relative impacts in persuasion, the results of the current study provide notable contributions in the tradition of this line of research. Moreover, especially when digitally computer-mediated-communication becomes predominant these days in our daily lives, the current effort to compare textual types and visual types of information has both academic and practical implications.

For the future studies it could be advised to change the experiment model and present the texts and pictures separately, as well as increase the number of examples within one category and divide the experimental groups specifically in accordance with the type of material (ex. Before/After pictures only, Narrative Texts only). The materials of the current study, especially concerning Before/After pictures, it seems that the objects in the pictures might have failed to establish needed emotional connection with the subjects who were exposed to them, depending on an age gap between the object and the viewer, or just the overall appearance of the person in the cue that did not come to the subjects' tastes and therefore failed to arise emotional response. In addition, this study only focused on a successful, positive and promotion-oriented exemplar instances for diet. When some weight loss failure cases are considered, the results might be different. Thus, it might be reasonable to include various, more diverse real life instances for future study. Nonetheless, the present study managed to achieve significant results in research for differentiating persuasive uses of image and text in health information online, and the results might become a good base for further, more thorough research on this matter.

References

- [1] D. M. Garner, P. E. Garfinkel, D. Schwartz, and M. Thompson, (1980). "Cultural expectations of thinness in women," *Psychological Reports*, Vol. 47, No.4, pp. 483-491, October 1980.
<https://doi.org/10.2466%2Fpr0.1980.47.2.483>
- [2] C. Betsch, C. Ulshofer, F. Renkewitz, T. Betsch, "The Influence of Narrative v. Statistical Information on Perceiving Vaccination Risks," *Medical Decision Making*, Vol. 31, No. 5, pp. 742-753, March 2011.
<https://doi.org/10.1177%2F0272989X11400419>
- [3] B. Van der Heide, D. Jonathan,, E. M. D'Angelo, Schumaker, "The Effects of Verbal Versus Photographic Self-Presentation on Impression Formation in Facebook," *Journal of Communication*, Vol. 62, pp. 98-116, February

2012. <https://doi.org/10.1111/j.1460-2466.2011.01617.x>
- [4] R. L. Nabi, L. Keblusek, "Inspired by Hope, Motivated by Envy: Comparing the Effects of Discrete Emotions in the Process of Social Comparison to Media Figures," *Media Psychology*, Vol. 17, No. 2, ppl 208-234, April 2014. <https://doi.org/10.1080/15213269.2013.878663>
- [5] M. M. Pladocostante, *The Effects of Facebook Images on Women's Self-Esteem and Body Image*. State University of New York Institute of Technology Utica, New York, 2013.
- [6] D. Carlson Jones, "Social Comparison and Body Image: Attractiveness Comparisons to Models and Peers Among Adolescent Girls and Boys," *Sex Roles*, Vol. 45, pp. 645-664, November 2001. <https://doi.org/10.1023/A:1014815725852>
- [7] A. Roberts, E. Good, "Media images and female body dissatisfaction: The moderating effects of the Five-Factor traits," *Eating Behaviors*, Vol. 11, pp. 211-216, May 2010. <https://doi.org/10.1016/j.eatbeh.2010.04.002>
- [8] M. Tiggemann and A. Slater, "Thin ideals in music television: A source of social comparison and body dissatisfaction," *International Journal of Eating Disorders*, Vol. 35, pp. 48-58, December 2004. <https://doi.org/10.1002/eat.10214>
- [9] E. Halliwell and H. Dittmar, "The role of self-improvement and self-evaluation motives in social comparisons with idealized female bodies in the media," *Body Image*, Vol. 2, pp. 249-261, August 2005. <https://doi.org/10.1016/j.bodyim.2005.05.001>
- [10] G. R. Bessenoff and R. E. Del Priore, "Women, Weight, and Age: Social Comparison to Magazine Images Across the Lifespan," *Sex Roles*, pp. 215-222, February 2007. <https://doi.org/10.1007/s11199-006-9164-2>
- [11] M. Tiggemann, J. Polivy, and D. Hargreaves, "The processing of thin ideals in fashion magazines: A source of social comparison or fantasy?" *Journal of Social and Clinical Psychology*, Vol. 28, pp. 73-79, January 2009. <https://doi.org/10.1521/jscp.2009.28.1.73>
- [12] A. Roberts and E. Good, "Media images and female body dissatisfaction: The moderating effects of the Five-Factor traits," *Eating Behaviors*, Vol. 11, pp. 211-216, May 2010. <https://doi.org/10.1016/j.eatbeh.2010.04.002>
- [13] H. Hoeken and L. Hustinx, "When is Statistical Evidence Superior to Anecdotal Evidence in Supporting Probability Claims? The Role of Argument Type," *Human Communication Research*, Vol. 35, pp. 491-510, October 2009. <https://doi.org/10.1111/j.1468-2958.2009.01360.x>
- [14] P. A. Ubel, C. Jepson, and J. Baron, (2001). "The Inclusion of Patient Testimonials in Decision Aids. Effects on Treatment Choices," *Medical Decision Making*, Vol. 21, pp. 60-68, February 2001. <https://doi.org/10.1177%2F0272989X0102100108>
- [15] X. Nan, M. F. Dahlstrom, A. Richards, and S. Rangarajan, "Influence of evidence type and narrative type on HPV risk perception and intention to obtain the HPV vaccine," *Health Communication*, Vol. 30, No. 3, pp. 301-308, July 2014. <https://doi.org/10.1080/10410236.2014.888629>
- [16] A. C. Graesser, B. Olde, and B. Klettke, How does the mind construct and represent stories? in M. C. Green, J. J. Strange, and T. C. Brock (Eds.), *Narrative impact: Social and cognitive foundations*, Mahwah, NJ: Lawrence Erlbaum Associates, pp. 229-262, 2002.
- [17] M. C. Green and T. C. Brock, "The role of transportation in the persuasiveness of public narratives," *Journal of Personality and Social Psychology*, Vol. 79, pp. 701-721, November 2000. <https://doi.org/10.1037//0022-3514.79.5.701>
- [18] E. Moyer-Guse, "Toward a theory of entertainment persuasion: Explaining the persuasive effects of entertainment education messages," *Communication Theory*, Vol. 18, pp. 407-425, August 2008. <https://doi.org/10.1111/j.1468-2885.2008.00328.x>
- [19] E. Halliwell, H. Dittmar, and A. Orsborn, "The effects of exposure to muscular male models among men: Exploring the moderating role of gym use and exercise motivation," *Body Image*, Vol. 4, pp. 278-287, June 2007. <https://doi.org/10.1016/j.bodyim.2007.04.006>
- [20] M. Tiggemann and J. Polivy, "Upward and downward: social comparison processing of thin idealized media images," *Psychology of Women Quarterly*, Vol. 34, pp. 356-364, August 2010. <https://doi.org/10.1111%2Fj.1471-6402.2010.01581.x>
- [21] S. E. Dalley, A. P. Buunk, and T. Umit, "Female body dissatisfaction after exposure to overweight and thin media images: The role of body mass index and neuroticism," *Personality and Individual Differences*, Vol. 47, pp. 47-51, March 2009. <https://doi.org/10.1016/j.paid.2009.01.044>
- [22] D. Zillmann, Exemplification theory of media influence, in J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research*, Mahwah, NJ: Lawrence Erlbaum Associates, pp. 19-41, 2002.
- [23] N. Hendrickson, "Towards a More Plausible Exemplification Theory of Events," *Philosophical Studies*, Vol. 129, No. 2, pp. 349-375, May 2006. <https://doi.org/10.1007/s11098-004-1647-9>
- [24] J. Lefevre, K. De Swert, and S. Walgrave, "Effects of Popular Exemplars in Television News," *Communication*

Research, Vol. 39, pp. 103-119, January 2011.
<https://doi.org/10.1177%2F0093650210387124>

- [25] D. Dunning and A. F. Hayes, "Evidence for egocentric comparison in social judgment," *Journal of Personality and Social Psychology*, Vol. 71, pp. 213-229, August 1996. <https://doi.org/10.1037/0022-3514.71.2.213>
- [26] L. Festinger, "A theory of social comparison processes," *Human Relations*, Vol. 7, pp. 117-140, May 1954. <https://doi.org/10.1177/001872675400700202>
- [27] K. White and D. R. Lehman, "Culture and Social Comparison Seeking: The Role of Self-Motives," *Personality and Social Psychology Bulletin*, Vol. 31 No. 2, pp. 232-242, February 2005. <https://doi.org/10.1177%2F0146167204271326>
- [28] N. H. Frijda, *The emotions*. New York, NY: Cambridge University Press, 1986.
- [29] C. E. Izard, *Human emotions*. New York, NY: Plenum Press, 1977.
- [30] R. S. Lazarus, *Emotion and adaptation*. New York, NY: Oxford University Press, 1991.
- [31] R. Plutchik, *Emotion: A psycho evolutionary synthesis*. New York, NY: Harper & Row, 1980.
- [32] N. Van de Ven, M. Zeelenberg, and R. M., Pieters, "Warding Off the Evil Eye When the Fear of Being Envied Increases Prosocial Behavior," *Psychological Science*, Vol. 21, No. 11, pp. 1671-1677, October 2010. <https://doi.org/10.1177%2F0956797610385352>
- [33] T. R. Cohen, S. T. Wolf, A. T. Panter, and C. A. Insko, "Introducing the GASP Scale: A New Measure of Guilt and Shame Proneness," *Journal of Personality and Social Psychology*, Vol. 100, No. 5, pp. 947-966, May 2011. <https://doi.org/10.1037/a0022641>
- [34] D. Montano and D. Kasprzyk, The theory of reasoned action and the theory of planned behavior, in K. Glanz, B. Rimmer, F. Lewis (eds.), *Health behavior and health education: Theory, research and practice*, San Francisco: Jossey-Bass, pp. 67-98, 2002.

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