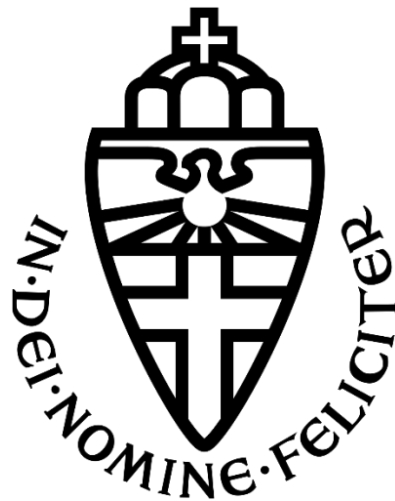


The Influence of Gain-Loss Framing and the Presence of Weight-Normative Messages in “What I Eat in a Day” Videos on Individuals' Attitudes, Intentions and Perceived Norms Towards a Healthy Diet

BACHELOR THESIS



Supervisor: Dr Anna Wagner

7498 words

Janneke Nienhaus

International Business Communication

s1083761 | janneke.nienhaus@ru.nl

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Abstract

The rise of short-form video content has prompted research into its impact, for instance on body image, eating behaviour and many more. However, little remains known regarding the effects of exposure to weight-normative and gain-loss-framed content on adopting a healthy diet. The present study aimed to fill this gap in the literature by conducting a 2×2 between-subjects experiment ($N = 86$) examining the effects of gain-loss framing and the presence of weight-normative messages in “What I Eat in A Day” videos on young adults’ attitudes towards a healthy diet, intentions to adopt a healthy diet and perceived norms. Four experimental conditions were created using a between-subjects design that included different combinations of gain or loss-framed and weight-normative messages. Contrary to past studies, the results showed no influence of gain framing and weight normative messages on attitudes, intentions, or perceived norms. An interaction between the two factors could not be established either. Thus, further research is necessary to get a more comprehensive understanding of the gain-loss framing and weight-normative messages impact on individuals' attitudes, intentions and perceived norms.

Keywords

Social media, WIEIAD, Gain-loss framing, Weight normative messages, Attitudes towards a healthy diet, Intentions to adopt a healthy diet, Perceived norms

Introduction

In the last few years, short videos, such as those on TikTok, Instagram Reels, and YouTube Shorts, have been increasingly popular and influential in people's lives (Zhu et al., 2023), especially for young adults (Minadeo & Pope, 2022) with nutrition as one of the topics often discussed (Weiß & König, 2022). In recent years, the hashtag #whatieatinaday has become particularly popular for portraying a person's day of eating (Drivas et al., 2024). These videos are suggested to exert a considerable influence on the behaviour and intentions of their viewers, as previous research shows (Zhu et al., 2023; Minadeo & Pope, 2022). Considering this, it becomes important to examine the design of such content. This study in particular focuses on gain/loss frames and the presence of weight-normative messages mainly taking into account how those messages may affect individuals' attitudes towards healthy eating, intentions to adopt a diet, and perceived social norms. Understanding these dynamics is critical not only for identifying the mechanisms behind diet-related decisions in the digital age but also for targeting interventions and messaging strategies aimed at promoting healthier lifestyles under the pervasive influence of social media. While normative messages have been extensively studied in other contexts like environmental behaviour or health communication (De Groot, 2022; Salazar et al., 2021), this remains relatively unexplored in the field of WIEIAD content. This also applies to gain-loss framing. Scientific research on message framing is also very well-researched (Rothman & Salovey, 1997; Gallagher & Updegraff, 2012), but scientific studies that focus precisely on WIEIAD content are rather rare (Pfender et al., 2023; Topham & Smith, 2023). In addition, as this study focuses on the combination of weight-normative messages and gain-loss framing, it has to be mentioned that there are hardly any studies that investigate the short-term effects of combining weight-normative messages with gain or loss frames (Drivas et al., 2024, Pfender et al., 2023). Consequently, this study can help further identify the influence of framing and weight normative messages on various personality characteristics related to dietary behaviour, taking a focus on messages in "What I Eat in a Day" videos. Moreover, health promotion initiatives can benefit from an understanding of how social media videos' framing and weight normative messages affect people's attitudes and intentions towards good nutrition and in this manner, help guide future preventative initiatives.

What I Eat in a Day Videos and Social Media Influencers

The "What I Eat in a Day" (WIEIAD) trend can be found on various social media platforms and since the beginning of these kinds of videos in 2010, billions of posts and uploads with the hashtag #whatieatinaday have been made (Pfender et al., 2023). Influencers demonstrate how to prepare meals, buy groceries, compile lists of ingredients, calculate the calories and macronutrients in each meal, create meal plans, and show their meals. Videos usually start with breakfast preparation and proceed through the influencer's daily routine, including meals and training sessions (David & Ezan, 2023).

Social media influencers (SMI) are “ordinary internet users who accumulate a relatively large following on blogs and social media through the textual and visual narration of their personal lives and lifestyles, engage with their following in digital and physical spaces and monetize their following by integrating advertorials into their blogs or social media posts and making physical paid guest appearances at events” (Abidin, 2016). Millennials, college-age individuals, and high school students make up the majority of those individuals (Minadeo & Pope, 2022). These influencers can possibly influence the attitudes and intentions of their followers, sometimes even by building parasocial relations (Hoffner & Bond, 2022). Furthermore, they play an essential part in promoting food cultures and trends (Eltink & Bröer, 2024) and also in promoting specific diet types like plant-based, gluten-free or keto diets (Pfender et al., 2023). Since their method of dieting appears to be simple and easy to follow, many of their followers are drawn to the restrictive diets promoted by them.

Moreover, social media influencers do not only display their own life and their food choices, but they also partner up with brands (Shan et al., 2019). In a practice called influencer marketing, they are commissioned by companies to advertise products or services in their posts, using their reach and credibility to attract potential customers. This becomes problematic as the influencer portrays products as the solution to all problems. Even if the influencer must mark the posts advertising products, it is not always directly visible to the consumer (Minadeo & Pope, 2022).

Diet Trends on Social Media: Benefits and Risks

Social media has both positive and negative effects, including socialisation, communication, enhanced learning opportunities and access to health-related information (Damota, 2019). The positive effects of social media are best realised when users use it for

appropriate purposes and clearly defined goals, while negative consequences can occur when it is used without a clear objective or due to problematic representations (Damota, 2019). Social media plays an important role as a communication and support mechanism but can also promote disordered eating behaviours (Claydon et al., 2021). In recent years, people often turn to social media in search of dietary references and role models, as they become increasingly aware that healthy eating is important to their well-being and health (David & Ezan, 2023).

One type of those videos are "What I Eat in a Day" (WIEIAD) videos, which are popular on numerous social media platforms. Past research has found several effects of these videos (Minadeo & Pope, 2022; David & Ezan, 2023; Topham & Smith, 2023). Scholars found that watching and interacting with the videos can potentially lead to internalised body image and the development of disordered eating practices in young adults, particularly women (Minadeo & Pope, 2022). Food is presented as a solution to problems within the body, which are often simply natural physical disorders (Topham & Smith, 2023).

On a positive note, a considerable number of influencers provide wholesome and balanced meal prep recommendations, encouraging viewers to try new foods and healthy options (Trattner & Elswelner, 2017). Moreover, food blogs also offer useful information and feedback on recipes, cuisines, and individuals, while serving as a valuable social outlet for sharing ideas and thoughts (Philip, 2016). Additionally, it has been found that food bloggers positively influence people's attitudes towards healthy food and their intention to eat healthy food (Nathalia et al., 2016).

However, some of the videos and posts can also lead to spreading misinformation (Pfender et al., 2023). A reason for that is that these videos depict unbalanced meals consisting primarily of full plates that are nutritionally extremely low in calories, (David & Ezan, 2023). This phenomenon is especially found in the field of fitness and healthy nutrition influencers. Some of those influencers have a tendency to favour excessive protein consumption through supplements, lacking carbs and fats, which might result in an imbalanced macronutrient distribution (David & Ezan, 2023; Pfender et al., 2023). Another point is that the credibility and legitimacy of influencers may be sometimes more closely tied to their physical appearance than their formal qualifications (David & Ezan, 2023). Furthermore, occasionally it can be challenging to distinguish between evidence-based advice and other forms of guidance, particularly for young adults (Minadeo & Pope, 2022). This also relates to the fact that some influencer content and messages are weight-normative.

Weight-normative messages

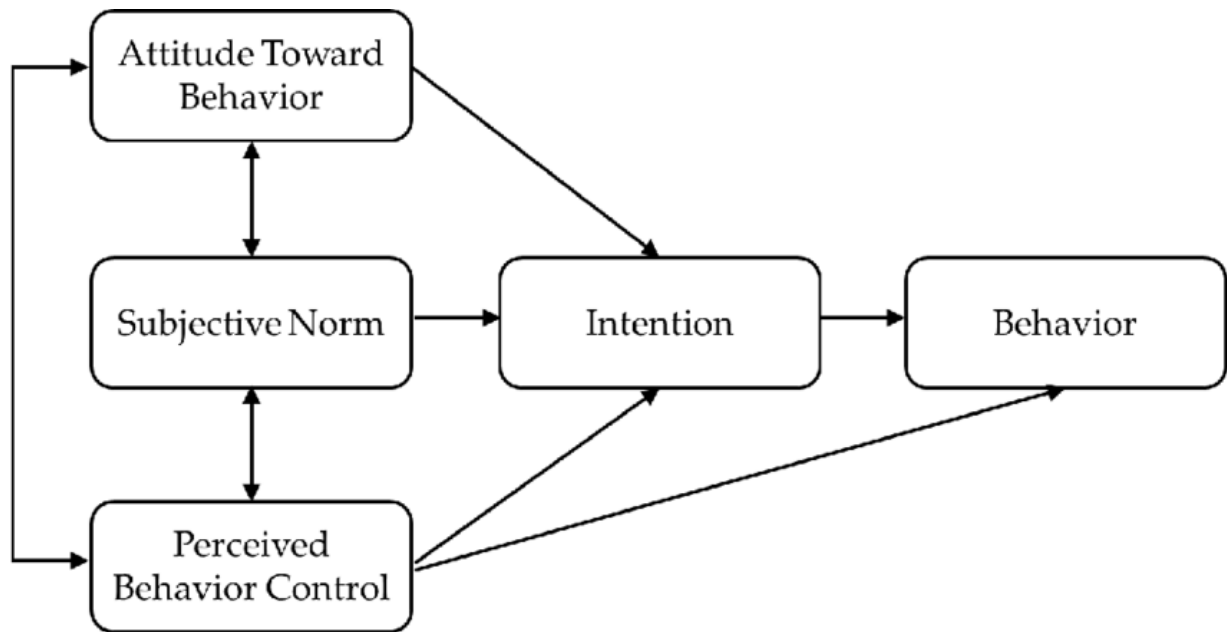
Weight-normative messages are based on the assumption that health and weight are related, and that health is only achievable at a particular weight and one has to satisfy weight expectations (Minadeo & Pope, 2022). As social media influencers generally tend to shape expectations and norms with their posts, weight-norms can easily be created. Some influencers in fitness and nutrition, for example, place a strong emphasis on weight when promoting a specific product or programme (Minadeo & Pope, 2022). In multiple cases weight loss is also promoted as a means of attaining higher status, idealizing thinness, or creating specific body images, especially of females (Minadeo & Pope, 2022; Perloff, 2014). When receiving messages from people we look up to, whether influencers or celebrities, one might feel compelled to adhere to such norms, even if it means getting the desired results through using harmful, unhealthy methods (Pfender et al., 2023).

This is because people actively modify their health and eating behaviours through social interactions with others (Rothman & Salovey, 1997; Robinson et al., 2014a). The generated social norms reflect beliefs about what others do and what they consider acceptable or inappropriate for us to do (Pfender et al., 2023). Social norms can have an effect on behaviour both consciously and unconsciously, influencing people's perceptions of what constitutes appropriate and inappropriate behaviour (Mollen et al., 2010). This phenomenon is further underlined by the Theory of Planned Behaviour, which states that people behave rationally in response to their attitudes, perceived behavioural control, and subjective norms (Ajzen, 1991). These elements provide the underlying context for decision-making, even if they might not always be actively or consciously taken into account. Intentions show the amount of work people are willing to put into carrying out behaviour and reflect the motivational elements driving behaviour. In general, the likelihood that an action will be taken increases the stronger the intention to carry it out (Conner & Armitage, 1998). When people believe that specific health behaviours are prevalent and appreciated in their social group, they are more likely to adopt and maintain them (Mollen et al., 2010).

Moreover, perceived social norms have also been shown to affect eating behaviour. This is highlighted by the Health Belief Model (HBM). The model was created in the 1950s to help explain why people frequently refuse health services and programs, such as screenings. The model holds that people's decisions about their health are determined by their perceptions of social norms, and they are more likely to adopt health-related behaviours when they believe that others support those behaviours (Champion & Skinner, 2008). In addition, the HBM argues that people tend to adopt

Figure 1

Theory of Planned Behaviour Model



Note. This graphic was taken from a study by Prayoga et al. (2021).

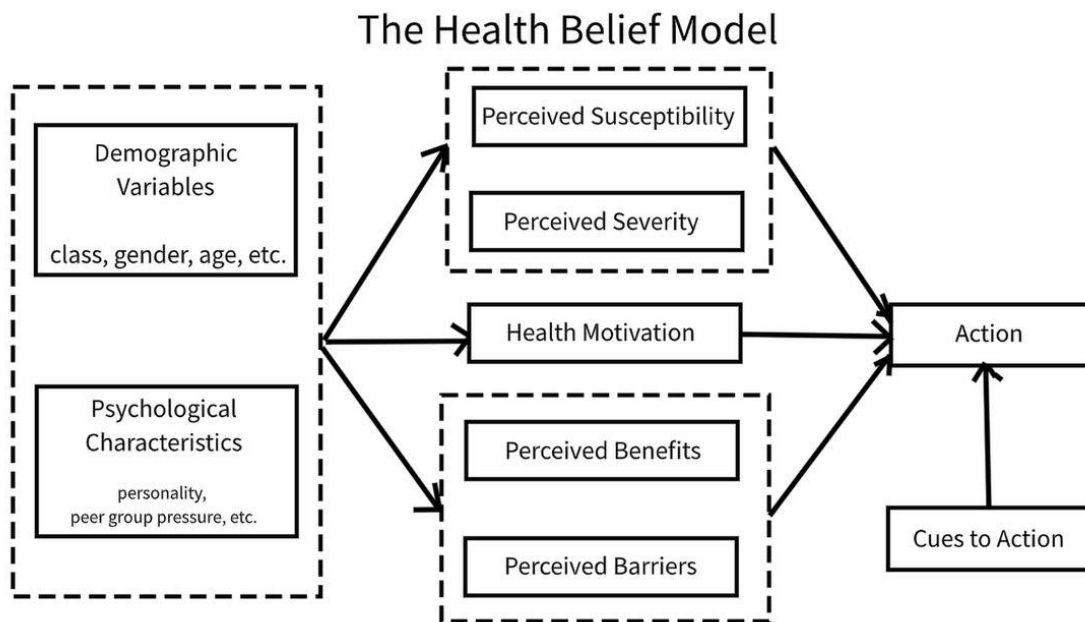
behaviours (Champion & Skinner, 2008). In addition, the HBM argues that people tend to adopt health-related behaviours when they perceive the benefits of these behaviours as high and perceive the barriers to their implementation as low. In addition, the HBM argues that people tend to adopt health-related behaviours when they perceive the benefits of these behaviours as high and perceive the barriers to their implementation as low. A meta-analysis of 18 studies by Carpenter (2010) found that the HBM effectively predicts positive health behaviours, with benefits and barriers being the strongest predictors. Moreover, the model also effectively predicts the likelihood of eating healthy among university students (Deshpande et al., 2009).

In addition, another meta-analysis found that norms significantly influence food choices and quantity of food consumed, which potentially promotes healthy diet changes (Robinson et al., 2014b). According to social norms theory, people's behaviour is often influenced by their perception of what is typical or desirable within their social group (Berkowitz, 2005). Social norms theory states that people tend to adopt behaviours that they believe are normative or socially accepted. This could mean that weight-normative messages might not only have negative effects

but can also lead to the adoption of healthier eating habits or practices. If a social group, of which a person is a part, collectively values healthy eating and if these values are reinforced by weight

Figure 2

Health Belief Model



Note. This graphic was taken from a study by Marshall (2023).

normative messages, it is possible that members of the group could be more inclined to make healthier food choices to conform to these norms. This is also supported by Robinson et al. (2014a), who found that men's intentions to eat more vegetables improved after hearing a message on social norms, while women's intentions did not. This might be because women may already possess strong intentions to eat fruits and vegetables and social norms on women are much more enforced. Understanding and using social norms enables the development of interventions aimed at promoting healthier eating patterns and supporting positive behaviour change (Rimal & Lapinski, 2015).

However, one must note that research on the influence of weight-normative messages is generally limited especially in the domain of health-influencer communication. Therefore, the question of whether influencers also contribute to the health beliefs, attitudes, and intentions of

their viewers by talking about the psychological and physical expectations connected to their diets should be further investigated. Thus, I hypothesise the following:

H1a: Weight normative messages in WIEIAD videos will lead to higher perceived norms than messages without weight normativity.

H1b: Weight normative messages in WIEIAD videos will lead to lower intentions to adopt healthy behaviour than messages without weight normativity.

Gain and loss framing

According to framing theory, people's processing and responses to information are influenced by how it is presented (Arowolo, 2017). A frame serves to organise and structure the meaning of messages. In the media, framing is commonly used to draw attention to certain aspects of health information and therefore influence perception and interpretation. Most health information and media can be understood by comparing costs and benefits (Rothman & Salovey, 1997). Health communications can be structured to emphasise the advantages of performing certain behaviours or the drawbacks of not performing a particular behaviour (Gallagher & Updegraff, 2012; Gerend & Maner, 2011). Gain-loss framing is one type of framing frequently used in health communication. When considering a behavioural alternative, people may react differently depending on whether the related costs or advantages are presented (Rothman & Salovey, 1997).

The study of prospect theory gave rise to an apparent phenomenon whereby nearly identical information can influence people's decisions differently depending on how it is framed, one posing low risk and the other posing a higher degree of risk (Gallagher & Updegraff, 2012). According to prospect theory, people tend to take risks when they assess choices based on potential losses yet opt to evade risks when the same choices are framed in terms of potential gains (Rothman & Salovey, 1997). Prospect theory suggests that people are risk-averse concerning gains and risk-seeking concerning losses (Levy, 2003). Essentially, they are willing to forgo the possibility of greater gains in exchange for a sure, albeit smaller, profit. The main goal of any framed message is to promote a specific action.

Extending the understanding gained from prospect theory and framing effects, it is clear that information display has a significant impact on human decision-making and even little

differences in the way options are framed might result in different choices (Gallagher & Updegraff, 2012). Still, framing has consequences that go beyond scenarios involving decisions. In most cases, the framed message is not the only information about a health issue available (Rothman & Salovey, 1997). In the case of this study, the focus lies on prevention behaviour. The goal of prevention practices is to stop health problems before they start or intensify (Rothman & Salovey, 1997). They give people the chance to be healthy now and lower their chance of getting sick in the future, one example would be dieting or healthier nutrition to promote current health and lower the risk of future illnesses.

However, one must note that research on gain-loss framing and especially prevention behaviour found mixed results. Gallagher & Updegraff (2012) examined 94 peer-reviewed published studies and found an advantage of gain-framed messages over loss-framed messages on attitudes and intentions. In addition to that, a meta-analytic review by O’Keefe & Jensen (2006) found that gain-framed appeals are more persuasive for encouraging disease prevention behaviours.

Nevertheless, even though these studies and the study by Rothman & Salovey (1997) attests that prevention behaviour is influenced by the type of message framing, Rothman et al. (1993), for example, found no effect of framing on prevention behaviour. Moreover, it is important to note that studies by both O’Keefe & Jensen (2006) and Gallagher & Updegraff (2012) also suggest that significant effects found, with gain-framed messages being more persuasive than their counterparts, are weak and small.

In line with Rothman & Salovey's (1997) and Gallagher & Updegraff's (2012) research on message framing and their influence on attitudes and intentions, I expect that:

H2a: Gain-frames in WIEIAD videos will lead to a greater intention to adopt healthier dietary behaviours than loss-framed messages.

H2b: Gain-frames in WIEIAD videos will lead to more positive attitudes toward health than loss-framed messages.

Interaction of weight-normative content and gain-loss framed messages

Taking into consideration studies researching framing and normative content in the domain of health communication an interaction between both independent variables could also be possible. A study by Zheng et al. (2023) indicated that the interaction between social norms and framing

significantly affected the willingness to reduce food waste. In addition, Blanton et al. (2001) demonstrated an interaction between norms and message framing. They researched the influence of norms and message framing on the intention of getting a flu shot. Moreover, there are also studies in other domains that have found a significant interaction. An example is a study by Hurlstone et al. (2014) who researched the effect of framing and normative messages in building support for climate policies and found a significant interaction between normative messages and framing. However, there are mixed results as there are studies which did not find interactions between the two factors. An example of this is a study by Mollen et al. (2016) who did not find a significant interaction between norms and message frames. It is important to note that in the domain of WIEIAD content, no research on the interaction effect exists and that research in the domain of health communication is limited. Thus, taking into account these previous findings and the theoretical frameworks of weight-normative and framed messages discussed before, I propose the following research question:

RQ1: How does the interaction between gain- and loss framing and the presence of weight-normative messages in WIEIAD videos influence intentions to adopt healthy dietary behaviours?

Methods

Subjects

A total of 101 participants were recruited. $N = 3$ participants were excluded due to their completion time was more than one hour. In addition, $N = 12$ further participants were excluded because their response patterns were striking. The participants were excluded from the analysis if their response pattern contained more than 12 of the same response values as well as more than two missing values. Therefore, the final sample size was 86.

The majority of participants (75.6%) identified as women and 24.4% identified as men ($M = 1.76$, $SD = .432$), this is equivalent to 21 male and 65 female participants. The participants were all between the ages of 18 and 29 years ($M = 22.31$, $SD = 2.29$). The age range was chosen because people between 18 and 30 typically use social media platforms more frequently (Auxier & Anderson, 2021). Most participants (67.4%) reported having a tertiary level of formal education (University or vocational training) ($M = 3.73$, $SD = .541$). A one-way ANOVA showed no significant relation between age and condition ($F(3,82) = 1.34$, $p = .267$), meaning that age was

distributed equally among the conditions. In addition, there was no significant relation between gender and condition group found ($\chi^2(3) = 2.63, p = .451$). This relation was weak (Cramer's $V = .175$). That means that male and female participants were equally distributed among the conditions. The participants were evenly distributed among the condition groups regarding their education, $\chi^2(9) = 16.13, p = .064$. This relation was weak (Cramer's $V = .250$).

Design

A 2 (gain-framed message vs. loss-framed message) x 2 (weight-normative message vs. no weight-normative message) between-subjects design was used for this study. The study applied a between-subjects design, so every participant only encountered one condition to avoid bias for other variables. The participants could have otherwise realised that the study is about gain-loss framing and weight-normativity, which might have affected the data. Four experimental conditions were created by the independent variables, which include weight normative messaging and gain-loss framing:

- Video 1: Gain-Framed Message with Weight Normative Message
- Video 2: Gain-Framed Message without Weight Normative Message
- Video 3: Loss-Framed Message with Weight Normative Message
- Video 4: Loss-Framed Message without Weight Normative Message

Procedure

Participants were recruited using convenience sampling to take part in the online experiment on Qualtrics. Participants accessed the questionnaire via a provided link. Additionally, informed consent was provided prior to accessing the study. Before exposure to the experimental conditions, they were asked to indicate their age, gender, current dietary habits, their general usage of social media for health information and the regularity of that usage on a Likert scale. The gender and current dietary habits of the participants, their engagement with and use of WIEIAD videos served as control variables in the analysis which will allow to account for any possible confounding variables. The aim of the study was not stated in advance to prevent that knowledge of the purpose of the study might distort the results. The study was merely introduced as a study about social media videos. Participants were randomly allocated to one of the four experimental conditions. They were then asked to watch the particular video stimulus. After completing the video,

participants were asked to fill out a post-exposure questionnaire evaluating their intentions, attitudes, and perceived norms after watching the video. There was no reward for participation. As predicted, the completion of the study took on average around 9 minutes ($M = 8.79$, $SD = 2.97$).

Stimulus Material

A video, which showed a person preparing their everyday meal, was extracted from a user named @patiispage on TikTok. The video was then cut and manipulated with a voice-over and subtitles according to the four conditions. Each version contained either a gain-frame underlining the advantages (e.g. “[...] with this meal you will regain energy and feel satisfied the whole day”) or a loss-frame underlining the disadvantages (e.g. “[...] with this meal you will avoid losing energy and feeling unsatisfied the whole day”) of following a healthy diet. Additionally, weight normative messages were either present (e.g. “This meal helped me lose 10 kg last year, by the way”) or absent (see Experimental Conditions in Design).

Then after watching the assigned video participants were questioned on their attitudes, intentions, and perceived norms serving as dependent variables. The purpose of this questionnaire was to gather information about the importance, advantages, and obstacles that participants overcome with healthy eating habits.

Pretest

The manipulation of the videos was tested in a pretest with $N = 23$ participants. Of those 23 participants, 14 (60.9%) were female, 6 (26.1%) were male and 3 (13.0%) preferred not to indicate their gender. The participants were between the age of 18 and 60 and the average age was 27.13 years ($SD = 11.05$). Participants were exposed to one of the four experimental conditions and were then asked three questions: “The video emphasizes the positive outcomes of following a healthy diet.”, “The video emphasizes the negative outcomes of not following a healthy diet“ and “The video proposes that body weight is related to health.“ All items were rated on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Three independent samples t-tests were performed to test whether the results were in support of our manipulation. The first independent samples t-test on “Emphasis of positive outcomes” with “Type of Framing” as a factor showed a significant difference between gain and loss-framed messages. This difference, 2.8, 95% CI [1.57, 4.06], was significant ($t(20.94) = 4.72$, $p < .001$), and represented a strong effect $d = 1.95$. Gain-framed messages ($M = 5.82$, $SD = 1.33$) were shown to have a higher emphasis on positive outcomes than

loss-framed messages ($M = 3.00$, $SD = 1.54$). A second independent samples t-test on “Emphasis of negative outcomes” with “Type of Framing” as a factor showed a significant difference between gain and loss-framed messages. This difference, -3.29 , 95% CI $[-4.37, -2.20]$, was significant ($t(17.03) = -6.46$, $p < .001$), and represented a strong effect $d = -2.63$. Loss-framed messages ($M = 5.75$, $SD = .820$) were shown to have a higher emphasis on negative outcomes than gain-framed messages ($M = 2.45$, $SD = 1.54$). Furthermore, a third independent samples t-test on “Weight-health correlation” with “Exposure to weight-normativity” as a factor showed a significant difference between weight-normative and non-weight-normative messages. This difference, 2.7 , 95% CI $[1.28, 4.14]$, was significant ($t(11.51) = 4.16$, $p < .001$), and represented a strong effect $d = 1.90$. Weight-normative messages ($M = 5.92$, $SD = .793$) were shown to have a higher emphasis on the assumption that weight is related to health than non-weight-normative messages ($M = 3.20$, $SD = 1.93$). In addition, the findings of the pretest show that the participants found the stimulus material to be understandable ($M = 6.22$, $SD = .518$), authentic ($M = 5.26$, $SD = 1.45$) and entertaining ($M = 5.48$, $SD = 1.16$).

Instruments

To assess the age of participants an open question was used. Gender identity was assessed using one multiple-choice question. First, participants were asked, “Which of the following best represents your gender identity?” with the options “male, female, non-binary, or prefer not to say”. Education was assessed by the question: “What level of formal education do you have?” with 5 possible answers ranging from “No formal education” to “Postgraduate education (Master's degree, Ph.D., etc.)”. Prior exposure to health-related content on social media platforms (e.g. WIEIAD videos) was adapted from Song et al. (2016) “Have you ever used social media for health information?” and “How often do you engage with health-related content on social media platforms?”. Participants could select from the responses on a 7-point Likert scale from 1 (never) to 7 (always).

Attitudes toward healthy eating were measured with six items and were adapted from Grønhøj et al. (2012) and measured on a 7-point bipolar scale with 1 (strongly disagree) and 7 (strongly agree). This included: “A healthy diet is: boring-interesting, useful-useless, enjoyable-un-enjoyable, desirable-undesirable, good-bad, harmful-beneficial”. The reliability of ‘Attitude towards a healthy diet’ comprising six items was good: $\alpha = .82$. Therefore, the mean of all six

items was used to calculate the compound variable ‘Attitude towards a healthy diet’, which was used in further analyses ($M = 5.79$, $SD = 1.01$).

Intention to adopt a healthy diet comprising five items was assessed using the scale by Conner et al. (2002) and was measured on a 7-point Likert scale. “I intend to eat a healthy diet in the future”, “I will try to eat a healthy diet in the future”, “I want to eat a healthy diet in the future”, “I expect to eat a healthy diet in the future” and “How likely is it that you will eat a healthy diet in the future?”. The reliability of ‘Intention towards a healthy diet’ comprising five items was also acceptable: $\alpha = .94$. Consequently, the mean of all five items was used to calculate the compound variable ‘Intention towards a healthy diet’, which was used in further analyses ($M = 5.65$, $SD = 1.10$).

Perceived norms containing fifteen items were adapted from Park & Smith (2007) and measured on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The questionnaire contained the items for subjective norms (e.g. “Most people who are important to me think that I should follow a healthy diet”), personal descriptive norms (e.g. “Most people who are important to me follow a healthy diet”), personal injunctive norms (e.g. “Most people whose opinion I value would approve of me following a healthy diet”), societal descriptive norms (e.g. “A majority of people follow a healthy diet”) and societal injunctive norms (e.g. “A majority of people approve of individuals following a healthy diet”). The reliability of ‘Perceived norms’ comprising fifteen items was excellent: $\alpha = .88$. Consequently, the mean of all fifteen items was used to calculate the compound variable ‘Perceived norms’, which was used in further analyses ($M = 4.45$, $SD = .951$).

Statistical Treatment

To investigate the effect of the independent variables on the dependent variables, data analysis made use of the relevant statistical techniques. To analyse the collected data IBM SPSS Statistics 29 was used. Control variables like engagement with health-related content on social media, usage of health content on social media, gender variations, and dietary habits were used as covariates in the statistical analysis.

Three separate two-way ANCOVAs were used to test the hypotheses: one for intentions to adopt a healthy diet, one for attitudes towards a healthy diet, and one for perceived norms. The first two-way ANCOVA tested for H1a with the dependent variable “perceived norms”. H1b, H2a, and

RQ1 were tested by another two-way ANCOVA with the dependent variable “intention to adopt a healthy diet”. For H2b and RQ2 a third two-way ANCOVA was used to test for a possible interaction of gain-loss framing and attitudes toward healthy nutrition. Descriptive statistics were used to examine the age, gender, education, type of diet, body satisfaction, and use and engagement with health content on social media of the participants. Two Chi-square analysis and one one-way ANOVA were conducted to determine if the participants were equally distributed among the experimental conditions concerning the factors age, gender, and education.

Ethical considerations

The study conforms to ethical guidelines. The key ethical considerations include demanding consent from participants, ensuring confidentiality and anonymity, and treating participants with respect. Participation was entirely voluntary which means that they could withdraw from the study at any time. Moreover, their personal information was anonymised and stored securely. Furthermore, video stimuli were carefully selected, with influencers selected based on relevance. The video length was kept consistent, and the information was screened in advance for potential dangers. To avoid discomfort, participants' well-being was prioritized. An ethics review checklist can be found in the appendix.

Results

Preliminary findings

61.6% of participants indicated not following a specific diet, with others reporting to be Vegetarian (20.9%) or Flexitarian (11.6%). In general, more women ($M = 4.78$, $SD = 1.63$) indicated following a specific diet than men ($M = 6.10$, $SD = 1.99$). Body satisfaction was rated as satisfied by 41.9% of participants, with other participants indicating somewhat satisfied (29.1%), followed by somewhat dissatisfied (16.3%), very satisfied (4.7%) and neither satisfied nor satisfied (4.7%). There was a slightly significant difference found in body satisfaction between men ($M = 5.14$, $SD = 1.52$) and women ($M = 4.98$, $SD = 1.24$).

Participants were also asked if they had ever used social media for health information. The majority indicated using social media for health information sometimes (26.7%) or frequently (26.7%), other participants indicated using social media usually (16.3%), rarely (14.0%) or

occasionally (9.3%) ($M = 4.26, SD = 1.44$). In addition, participants reported their engagement with health-related social media content. Most participants reported engaging with health-related content on social media sometimes (25.6%) ($M = 4.08, SD = 1.45$). Others indicated engaging with health content on social media frequently (23.3%), occasionally (17.4%) or usually (14.0%). This is illustrated in Table 1.

Table 1

Mean, SD and n for the Variables Type of Diet, Body Satisfaction, Social Media Use and Engagement with Social Media in Function of Gender

Gender	Variable	<i>M</i>	<i>SD</i>	<i>n</i>
Male	Type of Diet	6.10	1.99	21
	Body satisfaction	5.14	1.53	21
	Use of health content on social media	4.14	1.28	21
	Engagement with health content on social media	3.81	1.50	21
Female	Type of Diet	4.78	2.64	65
	Body satisfaction	4.98	1.24	65
	Use of health content on social media	4.30	1.49	64
	Engagement with health content on social media	4.17	1.44	65
Total	Type of Diet	5.10	2.55	86
	Body satisfaction	5.02	1.31	86
	Use of health content on social media	4.26	1.44	85
	Engagement with health content on social media	4.08	1.46	86

Perceived norms

Hypothesis 1a assessed “Weight normative messages in WIEIAD videos will lead to higher perceived norms than messages without weight normativity”. To answer this hypothesis a two-way analysis of covariance with gain-loss framing and weight-normativity as the factors was conducted (see Tables 2 & 3). The two-way analysis of covariance showed no significant effect of exposure to weight-normative messages on perceived norms ($F(1,77) = .059, p = .809, \eta^2 = .001$). Furthermore, exposure to gain-loss framed messages was not found to have a significant main effect on perceived norms ($F(1, 77) = .292, p = .591, \eta^2 = .004$). The interaction between exposure to gain-loss framed messages and exposure to weight-normative messages was not statistically significant either ($F(1, 77) = 1.94, p = .168, \eta^2 = .025$). In addition, the ANCOVA revealed no

significant effect of the covariate “Gender” on the dependent variable perceived norms ($F(1,77) = .322, p = .572, \eta^2 = .004$). The second covariate “Type of diet” was not found to have a significant effect on the dependent variable perceived norms ($F(1,77) = .045, p = .827, \eta^2 = .001$). Lastly, for the covariates “Use of social media” ($F(1,77) = .004, p = .948, \eta^2 = .000$) and “Engagement with social media” ($F(1,77) = .526, p = .470, \eta^2 = .007$) no significant effect on the dependent variable perceived norms was found. Therefore, H1a has to be rejected.

Table 2

Mean, SD and n for the Dependent Variable Perceived Norms in Function of Exposure to Weight-Normative Messages and Gain-Loss Framed Messages

Exposure to Weight-normativity	Type of Framed Message	<i>M</i>	<i>SD</i>	<i>n</i>
Weight-normative message	Gain-framed message	4.55	0.76	20
	Loss-framed message	4.40	1.08	25
	Total	4.46	0.94	45
No weight-normative message	Gain-framed message	4.17	1.02	20
	Loss-framed message	4.68	0.89	20
	Total	4.42	0.98	40
Total	Gain-framed message	4.36	0.91	40
	Loss-framed message	4.53	1.00	45
	Total	4.45	0.95	85

Table 3

Two-way analysis of covariance (ANCOVA) results for perceived norms by exposure to weight-normative messages and exposure to gain-loss framed messages (controlling for gender, type of diet, use of social media and frequency of social media use)

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>	η^2
Gender	0.30	1	0.30	0.32	0.57	0.00
Type of Diet	0.04	1	0.04	0.05	0.83	0.00
Use of Social Media	0.00	1	0.00	0.00	0.95	0.00
Frequency of Social Media Use	0.49	1	0.49	0.53	0.47	0.01
ExposureWeightNormativity	0.05	1	0.05	0.06	0.81	0.00
ExposureFraming	0.27	1	0.27	0.29	0.59	0.00
ExposureWeightNormativity * ExposureFraming	1.81	1	1.81	1.94	0.17	0.01
Error	71.90	77	0.93			

Intentions to adopt a healthy diet

Hypothesis 1b stated the following: “Weight normative messages in WIEIAD videos will lead to lower intentions to adopt healthy behaviour than messages without weight normativity”. A two-way analysis of covariance showed no significant effect of Exposure to weight-normative messages on Intentions to adopt a healthy diet ($F(1,77) = .015, p = .903, \eta^2 = .000$) (see Tables 4 & 5). Therefore, H1b has to be rejected. Furthermore, exposure to gain-loss framed messages was not found to have a significant main effect on intentions ($F(1, 77) = .661, p = .419, \eta^2 = .009$). Consequently, H2a “Gain-frames in WIEIAD videos will lead to a greater intention to adopt healthier dietary behaviours than loss-framed messages.” has to be rejected. In addition, the interaction between exposure to gain-loss framed messages and exposure to weight-normative messages was not statistically significant ($F(1,77) = .027, p = .870, \eta^2 = .000$). Thus, for RQ1 “How does the interaction between gain- and loss framing and the presence of weight-normative messages in WIEIAD videos influence intentions to adopt healthy dietary behaviours?”, it has to be concluded that there was no influence of gain- and loss framing and the presence of weight-normative messages in WIEIAD videos on intentions to adopt healthy dietary behaviours. In addition, the ANCOVA revealed no significant effect of the covariate “Gender” on the dependent variable intention to adopt a healthy diet ($F(1,77) = .066, p = .798, \eta^2 = .001$). The second covariate “Type of diet” was not found to have a significant effect on the dependent variable intention to adopt a healthy diet ($F(1,77) = 1.39, p = .242, \eta^2 = .018$). Testing the covariate “Use of social media” found no significant effect on the dependent variable intention to adopt a healthy diet ($F(1,77) = .012, p = .912, \eta^2 = .000$). However, for the covariate “Engagement with social media” a significant effect on intention to adopt a healthy diet was found ($F(1,77) = 4.70, p = .033, \eta^2 = .058$).

Table 4

Mean, SD and n for the Dependent Variable Intention to Adopt a Healthy Diet in Function of Exposure to Weight-Normative Messages and Gain-Loss Framed Messages

Exposure to Weight-normativity	Type of Framed Message	<i>M</i>	<i>SD</i>	<i>n</i>
Weight-normative message	Gain-framed message	5.74	0.74	20
	Loss-framed message	5.57	1.53	25
	Total	5.64	1.23	45
No weight-normative message	Gain-framed message	5.61	1.01	20
	Loss-framed message	5.68	0.97	20

	Total	5.65	0.98	40
Total	Gain-framed message	5.68	0.88	40
	Loss-framed message	5.62	1.30	45
	Total	5.64	1.11	85

Table 5

Two-way analysis of covariance (ANCOVA) results for intention to adopt a healthy diet by exposure to weight-normative messages and exposure to gain-loss framed messages (controlling for gender, type of diet, use of social media and frequency of social media use)

Source	SS	df	MS	F	Sig.	η^2
Gender	0.07	1	0.07	0.07	0.80	0.00
Type of Diet	1.61	1	1.61	1.39	0.24	0.02
Use of Social Media	0.01	1	0.01	0.01	0.91	0.00
Frequency of Social Media Use	5.44	1	5.44	4.70	0.03	0.06
ExposureWeightNormativity	0.02	1	0.02	0.02	0.90	0.00
ExposureFraming	0.77	1	0.77	0.66	0.42	0.01
ExposureWeightNormativity * ExposureFraming	0.03	1	0.03	0.03	0.87	0.00
Error	89.07	77	1.16			

Attitudes towards a healthy diet

A two-way analysis of covariance (see Tables 6 & 7) showed no significant effect of exposure to gain-loss framed messages on attitudes towards a healthy diet ($F(1, 77) = .739, p = .393, \eta^2 = .010$). Furthermore, exposure to weight-normative messages was not found to have a significant main effect on attitudes towards a healthy diet ($F(1, 77) = .230, p = .633, \eta^2 = .003$). Moreover, the interaction between exposure to gain-loss framed messages and exposure to weight-normative messages was not statistically significant ($F(1, 77) = .005, p = .947, \eta^2 = .000$). Thus, H2b “Gain-frames in WIEIAD videos will lead to more positive attitudes toward health than loss-framed messages.” has to be rejected. Additionally, a two-way analysis of covariance found no significant effect of the covariate “Gender” ($F(1, 77) = .159, p = .692, \eta^2 = .002$) nor of the covariates “Use of Social Media” ($F(1, 77) = .035, p = .852, \eta^2 = .000$) and “Frequency of Social Media” ($F(1, 77) = .551, p = .460, \eta^2 = .007$) on the dependent variable attitude towards a healthy diet. However, an ANCOVA found a significant effect of “Type of Diet” on the dependent variable attitude towards a healthy diet ($F(1, 77) = 5.04, p = .028, \eta^2 = .061$)

Table 6

Mean, SD and n for the Dependent Variable Attitude Towards a Healthy Diet in Function of Exposure to Weight-Normative Messages and Gain-Loss Framed Messages

Exposure to Weight-normativity	Type of Framed Message	<i>M</i>	<i>SD</i>	<i>n</i>
Weight-normative message	Gain-framed message	5.87	0.88	20
	Loss-framed message	5.74	1.17	25
	Total	5.80	1.04	45
No weight-normative message	Gain-framed message	5.78	1.13	20
	Loss-framed message	5.71	0.88	20
	Total	5.75	1.00	40
Total	Gain-framed message	5.83	1.00	40
	Loss-framed message	5.73	1.04	45
	Total	5.77	1.01	85

Table 7

Two-way analysis of covariance (ANCOVA) results for attitude towards healthy diet by exposure to weight-normative messages and exposure to gain-loss framed messages (controlling for gender, type of diet, use of

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>	η^2
Gender	0.16	1	0.16	0.16	0.69	0.00
Type of Diet	5.11	1	5.11	5.04	0.03	0.06
Use of Social Media	0.03	1	0.03	0.04	0.85	0.00
Frequency of Social Media Use	0.56	1	0.56	0.55	0.46	0.01
ExposureWeightNormativity	0.23	1	0.23	0.23	0.63	0.00
ExposureFraming	0.75	1	0.75	0.74	0.39	0.01
ExposureWeightNormativity * ExposureFraming	0.00	1	0.00	0.00	0.95	0.00
Error	78.01	77	1.01			

Discussion & Conclusion

The presentation of nutrition and dietary advice as well as the showing and preparation of different meals eaten in the course of a day has become extremely popular in recent years, especially through the hashtag #whatieatinaday (Pfender et al., 2023; Weiß & König, 2022; Zhu et al., 2023). Despite this, since this is a relatively new topic area, there have not been many studies conducted in this area. Therefore, the results of the study sought to expand previous research and provide valuable insights into the effect of gain-loss framed messages and weight-normative

messages in “What I Eat in a Day” videos on individuals' attitudes towards healthy nutrition, intentions towards a healthy diet and perceived norms. The study did not show a general influence of framed messages and weight-normative messages on attitudes, intentions, and perceived norms nor possible interaction effects between the two variables.

Effects of weight-normative messages

The study's initial objective was to test whether weight-normative messages generally influence perceived norms and intentions to adopt a healthy diet. Hypothesis 1a was not supported. Contrary to prediction, weight-normative messages were not associated with stronger societal pressure to conform to norms than non-weight-normative messages. These findings are inconsistent with past research that has demonstrated that norms have an impact on behaviour, affecting people's perceptions of what is and is not suitable (Mollen et al., 2010) and Pfender et al.'s (2023) findings on the pervasiveness of weight normativity in influencer messages. According to the Health Belief Model (HBM), people's decisions about their health are determined by their perceptions of social norms and people are more likely to adopt health-related behaviour when they believe that these behaviours are supported by others (Champion & Skinner, 2008). However, this was not supported by the present study. Moreover, the findings of this study are also contradicted by the Theory of Planned Behaviour, which argues that individuals tend to behave rationally in response to their attitudes, perceived behavioural control, and subjective norms (Ajzen, 1991). When individuals believe that specific health behaviours are prevalent and appreciated in their social group, they are more likely to adopt and maintain them (Mollen et al., 2010).

In addition, hypothesis 1b was not supported either. Inconsistent with past research weight-normative messages did not lead to lower intentions in adopting a healthy behaviour compared to those not exposed to weight normativity. In contrast, past research discovered that if people perceive that specific health habits are common and valued in their social group, they are more likely to adopt and maintain them (Mollen et al., 2010).

In research question 1 I further proposed a possible interaction between normative messages and framing. However, this was not supported by the data. This is highlighted by a study by Mollen et al. (2016) who did not find a significant interaction between norms and message frames. However, in contrast to that, the majority of other research for example by Blanton et al. (2001) found an interaction between norms and framing. This is also supported by other studies by Zheng

et al. (2023) and Hurlstone et al. (2014) who researched the interaction of the two factors in different domains other than health communication.

Effects of gain-loss framed messages

Secondly, the study aimed to investigate whether gain-loss framing has an effect on intentions to adopt a healthy diet and attitudes towards a healthy diet. The findings contradicted Hypothesis 2a, as gain-framed messages did not result in greater intention to adopt healthier dietary behaviours compared to those exposed to loss-framed messages. This also applies to hypothesis 2b, as participants did not exhibit more positive attitudes toward health compared to those exposed to loss-framed messages. This is not in line with research by most other researchers. Many studies have found a significant effect of gain-loss framing on intentions, others indicated not finding an effect. Past research showed that most health information and media can be understood by comparing costs and benefits and in media, framing is commonly used to draw attention to certain aspects of health information and therefore influences perception and interpretation (Rothman & Salovey, 1997). People may react differently if the costs or advantages are presented. Especially Gallagher & Updegraff (2011) showed that nearly identical information can influence people's decisions differently depending on how it is framed. Moreover, they propose an advantage of gain-framed messages over loss-framed messages on attitudes and intentions. However, studies by O'Keefe and Jensen (2006) and Gallagher & Updegraff (2012) also suggest that significant effects found, with gain-framed messages being more persuasive than their counterparts, are rather weak and small. This is supported by Rothman et al. (1993) who found no effect of framing on prevention behaviour, which supports our results.

Control variables

The results of this study also suggest a significant effect of the control variable “engagement with health-related content on social media” on intention to adopt a healthy diet for hypotheses 1b, 2a and RQ1. This could mean that participants who are engaged with social media more often might be more frequently exposed to health-related content, which could positively influence their intentions to adopt healthier dietary habits. It could also be explained by a stronger influence from peers or social media influencers who promote healthy eating. In addition, for hypothesis 2b a significant effect of the control variable “type of diet” on attitudes towards a healthy diet. This

could mean that individuals who already practice any type of diet may have a more positive attitude towards healthy eating as they have experienced the benefits first-hand. This also goes hand in hand with the fact that those people might be more interested in healthy eating in general. Moreover, the diet might also be related to external influences that may also shape attitudes towards a healthy diet.

Limitations

There are some potential limitations to this study. The sample size and participant demographics are limitations that must be considered. The sample is quite small and might not be representative of the general population as the study only had 101 total participants and 86 valid participants. Since the majority of participants were women, the generalizability of the results to other genders may be limited, as women may be more sensitive to body image and weight normative messages. In addition, convenience sampling was used, which could indicate that the subjects are not representative of the population as a whole. There is also a risk of bias due to the age range and lifestyle of the participants, which may not reflect the diversity of the population. In addition, the data collection is based on self-reporting, which is also sensitive to various biases. Additionally, it is also important to consider that attitude, intention, and perceived norms were not measured before exposure to the stimuli, hindering the possibility of making conclusions about changes in attitude, intentions or perceived norms. and lastly, the study used the same video with a different voiceover, which may have affected the validity of the responses.

Besides that, the age range chosen for this study of 18 to 30 tends to be more media literate and less influenced by traditional weight-normative messages due to growing awareness of diversity and body positivity, which might have also influenced the results. Finally, the environment of the respondents also plays a role, as most of them were university students. As universities are places where progressive ideologies and critical thinking are encouraged, this may have led to students and participants in the study being more inclined to question traditional norms and accept alternative views.

Future research could repeat the study with more participants to improve the validity and generalizability of the results. In addition, they should consider implementing a pre- and post-measure for attitude, intentions, and perceived norms. Along with that, future studies should measure attitudes, intentions, and perceived norms with both direct and indirect measures to increase reliability. Moreover, conducting a study using a variety of health-related videos, rather

than relying on a single video, could also provide a more robust indication of the effects of message framing and weight-normativity. Finally, a cross-cultural study comparing different cultures and their influence on responses would also be interesting.

Even though the present study did not find significant results, it still identifies a gap in research on gain-loss framed and weight-normative messages in the field of health communication, particularly in the domain of social media. Thus, further research into this field is advised.

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Appendix

Questionnaire

INFORMATION ABOUT THE RESEARCH STUDY

We are International Business Communication students at Radboud University, conducting research in the context of our BA thesis. You are invited to participate in a study on social media videos. In this study you will be presented with a short video. Afterwards, you will be asked a couple of questions.

Completing the questionnaire will take approximately 10 minutes. Participation is voluntary. Therefore, you can stop your participation and withdraw your consent at any time during the study. You do not need to indicate why you are stopping. The study is anonymous and your data is stored all securely according to Radboud University guidelines.

If you have a question, you can contact:

- Paula Thielen, paula.thielen@ru.nl
- Kimberley Vogeno, kimberley.vogeno@ru.nl
- Janneke Nienhaus, janneke.nienhaus@ru.nl
- Bregje Seising, bregje.seising@ru.nl

If you have any questions concerning Data protection please contact: Ronald Sarelse, privacy@ru.nl

CONSENT

- I, hereby consent to participate in the study on social media videos conducted by students from Radboud University.
- I have read the provided information document and fully understand its content.
- I agree to participate voluntarily in the study and understand that I have the right to withdraw my consent at any time without providing a reason.

- I understand that my participation is anonymous, and my data will be stored securely according to Radboud University guidelines.
- I acknowledge that I am 18 years of age or older.
- I understand that my participation involves completing an online questionnaire related to a healthy diet, which will take approximately 5-10 minutes.
- By agreeing below, I confirm my consent to participate in the study:

Yes, I agree to participate in this study / No, I do not want to participate in this study

1. Demographic Information:

Age: How old are you? → open-ended

Which of the following best represents your gender identity?

- Male
- Female
- Non-binary
- other

What level of formal education do you have?

- No formal education
- Primary education (Elementary school)
- Secondary education (High school)
- Tertiary education (College or university)
- Postgraduate education (Master's degree, Ph.D., etc.)

Do you follow a diet?

- Vegetarian
- Pescetarian

- Flexitarian
- Vegan
- Keto
- Paleo
- I do not follow a specific diet

Body satisfaction/How satisfied are you with your body?

Not at all satisfied 1 2 3 4 5 6 7 Totally satisfied

Have you ever used social media for health information?

Never/rarely/occasionally/sometimes/frequently/usually/always

How often do you engage with health-related content on social media platforms?

Never/rarely/occasionally/sometimes/frequently/usually/always

Attitudes

Please indicate on scale from 1 (strongly disagree) to 7 (strongly agree).

A healthy diet is:

Boring 1 2 4 4 5 6 7 Interesting

Useless 1 2 3 4 5 6 7 Useful

Unenjoyable 1 2 3 4 5 6 7 Enjoyable

Undesirable 1 2 3 4 5 6 7 Desirable

Bad 1 2 3 4 5 6 7 Good

Harmful 1 2 3 4 5 6 7 Beneficial

Intentions to adopt healthy behaviour

Please indicate on scale from 1 (strongly disagree) to 7 (strongly agree).

I intend to eat a healthy diet in the future

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I will try to eat a healthy diet in the future

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I want to eat a healthy diet in the future

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I expect to eat a healthy diet in the future

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

How likely is it that you will eat a healthy diet in the future?

Very unlikely 1 2 3 4 5 6 7 Very likely

Perceived norms

Please indicate on scale from 1 (strongly disagree) to 7 (strongly agree).

Subjective norms

Most people who are important to me think that I should follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Most people whose opinion I value consider that I should follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

It is expected of me that I follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Personal descriptive norms

Most people who are important to me follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Most people whose opinion I value follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Most people who are important to follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Personal injunctive norms

Most people whose opinion I value would approve of me following a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Most people who are important to me would encourage me to follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Most people who are important to me would support that I follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Societal descriptive norms

A majority of people follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

A majority of people have expressed following a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

A majority of people have favoured following a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Societal injunctive norms

A majority of people approve of individuals following a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

A majority of people endorse following a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

A majority of people support that individuals follow a healthy diet

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Debriefing:

Thank you for taking the time to participate in our questionnaire on healthy eating habits. Your responses and feedback is valuable as it will help us better understand emotions, intentions, perceived norms, and attitudes toward healthy diets and nutrition, in "What I eat in a day videos". We want to ensure that you understand the purpose of this questionnaire and how your responses will be used. The aim of this questionnaire was to gather insights into the perceived norms, emotions, attitudes and intentions of following a healthy diet as viewing "What I eat in a day" videos with different persuasive messages. Specifically, we used four different experimental conditions; Gain-framed + weight normative messages, Loss-framed + weight normative messages, Gain-framed (No weight normative message) and finally Loss-framed (No weight normative message) to evoke responses. The overall goal was to investigate the effects of exposure to these conditions on how this can potentially alter responses to such stimuli.

Rest assured that all responses provided in this questionnaire will remain confidential. Your anonymity is highly respected, and your individual responses will not be identifiable in any reports or analyses. The data collected will be used solely for research purposes and will not be shared with any third parties.

If you have any further questions about the questionnaire or would like to provide additional feedback, please do not hesitate to reach out to us. Once again, we sincerely appreciate your participation and contribution to our project.

Thank you for your time and cooperation.

Script Voice-over WIEIAD video

1. Gain-framed and Weight-Normative Message

This is what I eat in a day. My goal is to inspire you to eat healthy because if you do this it will benefit your health and support your journey towards a healthy weight!

[Breakfast]

For breakfast I am making a burrito. Packed with protein, healthy fats, and all the good stuff, **with** this meal you will regain energy and feel satisfied the whole day !

[Lunch]

For lunch I had grilled salmon, avocado, and wholewheat rice. This meal not only tastes great but eating it will provide you with essential nutrients, support your health and helps you to maintain a healthy weight. That was so deliciousss, you guys.

[Snacks]

As a snack I had a banana with some toppings. That's the perfect snack when you want to feel comfortable and satisfied with your body during the day. I also had some green tea. Which helps you beinging more focused throughout the day

[Dinner]

For dinner, I had a heart-healthy meal with paprika, onions, grilled chicken, and of course, rice again, then I added some tomatoes and cucumber, and a little bit of hummus. This meal helped me

to lose 10kg last year, by the way. As for the other meals, they will support your journey towards a healthy weight and help maintain it!

[End]

Thanks for watching guys. Follow me for more WIEIAD videos!

Video 2: Loss-framed and Weight-Normative Message:

This is what I eat in a day. My goal is to inspire you to eat healthy, because if you don't, this will detriment your health and it helps you to maintain a healthy weight.

[Breakfast]

For breakfast I am making a burrito. Packed with protein, healthy fats, and all the good stuff, with this meal you will avoid losing energy and feeling unsatisfied the whole day.

[Lunch]

For lunch I had grilled salmon, avocado, and wholewheat rice. This meal not only tastes great, but not eating it means you miss out on essential nutrients and you don't support your health. It also helps you to maintain a healthy weight. That was so deliciousss, you guys.^

[Snacks]

As a snack I had a banana with some toppings. That's the perfect snack when you don't want to feel uncomfortable and unsatisfied with your body during the day. I also had some green tea which helps being less unfocused throughout the day.

[Dinner]

For dinner, I had a heart-healthy meal with paprika, onions, grilled chicken, and of course, rice again, then I added some tomatoes and cucumber, and a little bit of hummus. This meal helped me

lose 10kg last year, by the way. As for the other meals, they will help you lose weight and achieve your weight goals!

[End]

Thanks for watching guys. Follow me for mor WIEIAD videos!

3. Gain-framed and No Weight-Normative Message:

Hiii, today i will show you what I eat in a day. My goal is to inspire you to eat healthy, because if you do this will benefit your health!

[Breakfast]

It's breakfast time, and we're kicking off the day with a breakfast burrito. Packed with protein, healthy fats, and all the good stuff, **with** this meal you will regain energy and feel satisfied the whole day

[Lunch]

Then I had grilled salmon, creamy avocado, and wholesome rice for lunch. This meal not only tastes great. Eating it will provide you with all essential nutrients and support your health. That was so deliciousss, you guys.

[Snacks]

At 3pm, I got a little hungry so I had a banana with some toppings. That's the perfect snack when you want to feel comfortable and satisfied with your body during the day. After lunch, I had some green tea. Green tea can help you be more focused throughout the day!

[Dinner]

For dinner, I had a heart-healthy meal with paprika, onions, grilled chicken, and of course, rice again, then I added some tomatoes and cucumber, and a little bit of hummus.

[End]

Thanks for watching guys. Follow me for more WIEIAD videos!

4. Loss-framed and No Weight-Normative Message:

Hiii, today i will show you what I eat in a day. My goal is to inspire you to eat healthy, because if you don't, this will detriment your health!

[Breakfast]

It's breakfast time, and we're kicking off the day with a breakfast burrito. Packed with protein, healthy fats, and all the good stuff, with this meal you will avoid losing energy and feeling unsatisfied the whole day

[Lunch]

Then I had grilled salmon, creamy avocado, and wholesome rice for lunch. This meal not only tastes great. Not eating it means you miss out on essential nutrients and you don't support your health.

[Snacks]

At 3pm, I got a little hungry so I had a banana with some toppings. That's the perfect snack when you don't want to feel uncomfortable and unsatisfied with your body during the day. After lunch, I had some green tea. Green tea can help you being less un-focused throughout the day!

[Dinner]

For dinner, I had a heart-healthy meal with paprika, onions, grilled chicken, and of course, rice again, then I added some tomatoes and cucumber, and a little bit of hummus.

[End]

Thanks for watching guys. Follow me for more WIEIAD videos!

Gain/Loss-framed messages:

Gain-framed	Loss-framed
My goal is to inspire you to eat healthy, because if you do this will benefit your health [...]	My goal is to inspire you to eat healthy, because if you don't, this will detriment your health [...]
[...] with this meal you will regain energy and feel satisfied the whole day	[...] with this meal you will avoid losing energy and feeling unsatisfied the whole day
This meal not only tastes great. Eating it will provide you with all essential nutrients and support your health	This meal not only tastes great. Not eating it means you miss out on essential nutrients and you don't support your health.
That's the perfect snack when you want to feel comfortable and satisfied with your body during the day	That's the perfect snack when you don't want to feel uncomfortable and unsatisfied with your body during the day

After (during?) lunch, I had some green tea. Green tea can help you being more focused throughout the day!	After (during?) lunch, I had some green tea. Green tea can help you being less un-focused throughout the day!
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The difference between weight-normative and no weight-normative messages is that in the text without weight-normative messages, they are left out instead of replaced. Therefore, a table with weight normative messages in the gain-framed and loss-framed context was made.

Weight Normative
Supports your journey towards a healthy weight
Helps you to maintain a healthy weight
It can also help you achieve your weight goals.
This meal helped me lose 10 kg last year, by the way

Link to access the videos:

<https://drive.google.com/drive/folders/1SRtTcl1VnM64aMkDITsCDDynD-UrS4zT?usp=sharing>

Ethics Review Checklist

Questions	Yes	No
Will you be collecting data from social media platforms?	×	
Will you use an existing dataset?		×
Will you be collecting data from participants?	×	
Is a healthcare institution involved in the research?		×
Does the research include medical-scientific research that might carry risks for the participant?		×
Standard research method		
Does this research fall under one of the stated standard research methods of the Faculty of Arts or the Faculty of Philosophy, Theology and Religious Studies?	×	
→ Yes , two standard research methods namely: Standard evaluation and attitude research and Standard questionnaire research		
Participants		

Is the participant population a healthy one?	×	
Will the research be conducted amongst minors (<16 years of age) or amongst (legally) incapable persons?		×
Methods		
Will the study heavily burden participants?		×
Are the estimated risks connected to the research minimal?	×	
Are the participants offered a higher compensation than the usual one?		×
Should deception take place, does the procedure meet the standard requirements?	×	
Are the standard regulations regarding anonymity and privacy met?	×	
Conducting the research		
Are participants recruited via the Radboud Research Participation System (SONA) and/or is the research conducted in the CLS Lab?		×
Will the research be carried out at an external location (such as a school)?		×

Is there a contact person to whom participants can turn to with questions regarding the research and are they informed of this?	×	
Is it clear for participants where they can file complaints with regard to participating in the research and how these complaints will be dealt with?	×	
Are the participants free to participate in the research, and to stop at any given point, whenever and for whatever reason they should wish to do so?	×	
Before participating, are participants informed by means of an information document about the aim, nature and risks and objections of the study?	×	
Do participants and/or their representatives sign a consent form?	×	