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# The effect of influencers' legitimacy of expertise and style of communication on perceived trust, empathy, and intention to follow health recommendations on social media

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Dissertation written under the supervision of Professor Sofia Jacinto

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## **Abstract**

Title: The effect of influencers' legitimacy of expertise and communication style on perceived trust, empathy, and intention to follow health recommendations on social media

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Social media is one of the online places where people gather information, and how a message is perceived may affect a person choice and impact her life. This can be specially concerning when dealing with health-related content on social media since it can impact a health-decision making. How a message is perceived may be related to the person who send it or how it was sent.

That's why in this study was conducted an experimental design between participants with a factorial design of 2x2, analysing the impact legitimacy of expertise (High vs Low) and the style of communication (Storytelling vs Informational) has in a person's perceived trust, empathy, and intention of following recommendations in health-related post shared on social media.

It was analysed by conducting an online survey with 140 participants. After the analysis, it was concluded that there are no significant differences for trust nor perceived empathy. However, there is a tendency to exist significance in the interaction effect of intention of following recommendations in the condition of high legitimacy and storytelling style, and that is what this study suggests to health-care providers or entrepreneurs in health field to use in a social media post to improve results.

Key words: social media; Health-related content; source credibility; style of communication; perceived trust and empathy; intention of following recommendations.

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## **Abstrato**

Título: O efeito da legitimidade da experiência e do estilo de comunicação dos influenciadores na confiança, na empatia percebida e na intenção de seguir recomendações de saúde nas redes sociais

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As redes sociais são um dos locais online onde as pessoas procuram informações, e onde a forma como uma mensagem é percebida pode influenciar decisões individuais e ter um impacto significativo na vida das pessoas. É particularmente relevante no contexto de conteúdos relacionados com a saúde, devido ao seu potencial para influenciar a tomada de decisões. A percepção de uma mensagem depende frequentemente da legitimidade de quem a transmite e do estilo de comunicação utilizado.

Este estudo adotou um desenho experimental entre participantes com uma matriz 2x2, analisando o impacto que a legitimidade da experiência (alta vs baixa) e o estilo de comunicação (narrativo vs informacional) têm na percepção de confiança, empatia e intenção de uma pessoa seguir recomendações nas redes sociais.

A investigação contou com uma amostra de 140 participantes, que responderam a um inquérito online. Após a análise, concluiu-se que não existem diferenças significativas para a confiança e empatia percebida. No entanto, existe uma tendência de significância no efeito de interação da intenção de seguir as recomendações na condição de alta legitimidade e estilo narrativo. Esta abordagem é a sugestão deste estudo para os prestadores de cuidados de saúde ou empreendedores da área, utilizem quando de uma publicação nas redes sociais.

Palavras-chave: redes sociais; conteúdo relacionado com saúde; credibilidade da fonte; estilo de comunicação; confiança e empatia percebidas; intenção de seguir recomendações.

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## Introduction

Social media is one of the online places where people gather information - especially adolescents since 73% of them use social media platforms to receive news on current events, (Plaisime, 2020). So, it is important to study how the messages on social media can affect a person believes and decisions, especially in a health decision matter (Plaisime, 2020).

Health content in social media had somehow begun in 2010 and since then it has increased exponentially, particularly during the covid pandemic (Yuehua Zhao, 2017). This kind of content has been studied and analysed through the years, for example: 1) how it can change the interaction between individuals and health organizations (Moorhead SA, 2013); 2) how a lot of online information can lead to a self-diagnosis effect and how it can change the patient-healthcare professional relationship (Farnood, 2021); 3) how the source of a message change a person perspective (Donghee N. Lee, 2024); and 4) how a person can have free access to medical information (Marcio von Muhlen, 2019). However, it is important to continuously analyse its role preventing generalized misinformation, such as rumours, spam, and fake news (Liang Wu, 2019), as well as mitigating the risk of potential public health concerns like it happen in the past. This already happened in 2006, in Portugal, due to an episode of a famous teen soap opera (Boissoneault, 2017); in that time, social media wasn't as present as nowadays, but it is easy to imagine it happening in the current times. Another example occurred in Germany between 2019 and 2021, when young people started having Tourette-like tics as response to the videos of a popular German youtuber with Tourette's. The intense viewing of the influencer led to mimicking those behaviours. (Kathrin Hartung, 2024; Chaplin, 2024) it's a clear example how a person online can influence others' lives, even if they are unaware of it.

Although, social media can bring many benefits, like breaking down geographical barriers and the creation of online communities (Clement, 2018), and in health related issues it can be a source of information, explore options and share experiences (Househ M, 2014). But it can also be a place that leads to problems like lack of trust and misinformation (Liang Wu, 2019).

The background and demographics of a person influence how they interpret a message that an influencer – person who promote products, services, beliefs, ideologies, and lifestyle habits (Wellman, 2024) – shares online. Because of that, there can be different interpretations of the same message, due to how it's presented and by who (Kaplan & Haenlein, 2010), having the source credibility a great impact on the message interpretation (Do Yuon Kim, 2021). As well, in social media there are numerous of ways of communication, by video, text, images and

several others (Patrick, 2022), but the style of communication also varies, for instance storytelling or informational, and it also change how a content is perceived (Stubb, 2018).

Thus, the present study, using an experimental design, examines how the legitimacy of expertise of an influencer and the style of communication that it is used in an online social media post, can influence a person's trust, perceived empathy, and intention of following recommendations. Answering to the **following research question**:

*How does the legitimacy of expertise (high vs low) and the style of communication (storytelling vs. informational) interact in order to influence individuals' trust in the message, perceive empathy and intention of following recommendations in health-related content on social media.*

In the current section, the introduction, is presented the general topic of research and the research question that is going to be answered. In the following one, Section one, it's going to be analysed the literature review that sustains the respective hypothesis of this research. Section Two describes the methodology employed to proceed with the experimental design, while in Section Three is analysed and outlined the study's results. On Section Four is presented the general discussion of results being analysed the confirmation or rejection of the hypothesis, the limitations of the study, future research, and practical and theoretical implications. And on Section Five is provided the main conclusions of the study.

## **1. Literature review**

### **1.1.Social Media and Social Media Usage**

According to Ellison & Boyd (2013), social media has been defined as web-based communication platforms with three distinct features: 1) they allow users to create unique profiles and content to share with other users, 2) they create a visible network connection between users that can be browsed by other users, and 3) they provide users with a space to broadcast content, consume information, and interact with others in a continuous stream of information. Several applications like Facebook, Instagram and Snapchat satisfy these criteria. (Emily B. O'Day, 2021).

Information on social media can be shown in the form of video, text, comments, and images (Patrick, 2022), and there are six types of social media platforms, whose examples and purposes can be seen in Appendix 1.

It's known that social media changed the way people communicate with others (Emily B. O'Day, 2021) and its usage has been expanding alongside the global digital population (Dixon, 2024). Today social media has over five billion users worldwide, but it is expected to reach up to six billion by 2028 (STATISTA, 2024).

Worldwide, according to STATISTA (2024), the average time people spend on social media is around 143 minutes per day, and they use it to find entertaining content and share photos and videos with friends, but they mainly use it to be in touch with current events. Most people believe that social media changed their lives, not only in online activities but also in offline behaviours, since 57% of people – represented in a survey that occurred in 2019 – believe that social media increased their access to information and ease of communication. Although 50% believe social media allowed them freedom of expression, 49% consider that it worsened their personal privacy, 47% that it is a distraction during the day, and 44% that it led to polarization in politics (STATISTA, 2022).

## **1.2. Social media in health-related learning**

Social media has been used in health communication since 2010 (Yuehua Zhao, 2017) and it has been constantly studied, given that it has changed the health care as a whole and is going to continue to do so as it evolves (Patrick, 2022).

Consumption of health-related information on social media, is seen not only by people with specific health conditions, as well as their friends and family, but also by people with public health concerns. That is why the population who search for health information online can be considered as consumers of health information (Yuehua Zhao, 2017).

Using social media platforms as a way to seek information, consumers of health information get advantages such as: access to information from other users, asking for or giving help and advice to others, access to a sense of community where they share experiences, and access to information that is more effective and personal than in traditional information retrieval (Yuehua Zhao, 2017). This kind of information on social media, can also be a way to promote and facilitate a better interaction between health researchers/providers/policy analysts, or other science-based health professionals, and health consumer (Burke-Garcia & Scally, 2014).

However, it is important not to forget that due to the constant misinformation found on social media, health-related information can bring concerns regarding its quality and authoritativeness, which may inhibit consumers' use of the information (Yuehua Zhao, 2017). Also, due to confirmation bias – a cognitive bias/error of thinking that suggests that a person

seeks and trusts information that confirms and is congruent with their beliefs, even if they are incorrect (Casad & Luebering, 2024) - information on social media can impact a person's medical decision making (Patrick, 2022).

Health content on social media can be related to many different topics such as diabetes, sexual health, mental health, the flu, nutrition, and many others (Moorhead SA, 2013). As a result, not only can it bring lot of benefits for the general public, patients, and health professionals, but also some disadvantages/limitations inherent to the use of social media in this context. These benefits and disadvantages can be found in Appendix 2.

### **1.3. Source credibility**

Messages on social media have three biggest components whether a person find it misinformation or not: the agent, the message, and the interpreter (Wang, 2019). So, not only the interpreter of a message should have a critical spirit, but also the agent who shares the message has the greatest responsibility of the verity of the information they share. In fact, according to a study made by UNESCO (2024), around 62% of content creators doesn't confirm the verity of the information before sharing it. Moreover, 41,6% measure the verity of the message according to the popularity of it (likes, number of followers of the source, etc) and only 17% search for documents and proof of the message they are going to share (Ha & Unesco, 2024). This study focused exclusively on content creators, but its results raise concerns about the representation of the online population as a whole.

A content creator is more commonly known as "influencer". A social media influencer is a person who promotes products, services, beliefs, ideologies, and lifestyle habits (Wellman, 2024) by sharing a part of their life and opinions. Influencers should be people who have exhibited proficiency and expertise in a particular subject (Patrick, 2022), specifically since they can drive conversations and/or shape their audience attitudes (Kim & Zituo Wang, 2024) regardless of their education, qualifications, or expertise (Patrick, 2022). Due to it, the lines of who is credible and who is an expert have been blurred.

According to Do Youn Kim (2021), source credibility is defined as the image that a speaker held by a listener at a given time. Also, the impact of source credibility on misinformation beliefs depends on how much the source aligns with the audiences' worldviews (Paige L. Kemp, 2024) bringing again the impact confirmation bias have on decision. Expertise refers the degree to which a communicator is perceived as a credible source of information, and a speaker's expertise can be perceived and recognized through the depth and quality of their information,

level of skill, education, professional achievements and soundness of their judgment (Do Yuon Kim, 2021).

In health-related content, the perceived source credibility may be a strong predictor of motivation to seek, attend to and follow public health directives. The factors, such as the expertise perceive and transparency, affect how a source is perceived (Avery, 2010).

#### **1.4. Style of communication on social media**

The type of communication through which a message is convey on social media can change how a person perceives the content that is being shared. It can switch not only by the forms of communication possible on social media (video, text, images (Patrick, 2022)) but also by the style and how the information is being told.

The most common styles used in social media are storytelling – also known as narrative (Stubb, 2018) – and informational. The storytelling one convey messages to the audience using a story with the why's, who's, and when's (Farivar, Wang, & Yufei Yuan, 2021), are designed to include an emotional appeal (Stubb, 2018) and normally they describe a particular experience rather than a general truth (Li J, 2019). On the other hand, the informational style – also known as statistical – feature a list of informations, facts and explanations about what is being presented (Farivar, Wang, & Yufei Yuan, 2021), also conveys arguments and statistical evidence with the objective of providing valuable facts (Stubb, 2018). Both styles of communication are used by influencers on social media, and while storytelling may create hedonic value to the audience since is being use a personal story, the informational one creates a utilitarian value by focusing just in facts (Farivar, Wang, & Yufei Yuan, 2021).

In literature, the storytelling style (under the name narrative) is more commonly studied given that it had been included in the Narrative Paradigm by Walter Fisher. Fisher (1987) states that all communications that are meaningful are done in a form of storytelling or reporting of events, since human beings are more persuaded by a good story than by a good argument.

In health-related content, the style of communication used also has an important role on the effect it can cause to person's life (Graaf, Sanders, & Hoeken, 2016). Both storytelling and informational are used in health-related content on social media, the first try to address cognitive and emotional aspects while the second entails a statistical summary of quantitative information (Gesser-Edelsburg, 2021).

Studies done, not only associated to health-related content, in the area of this two styles of communication, have shown contradictory results: ones suggest that people are more willing to accept opinions from stories (storytelling) rather than logical arguments (informational) (Li J, 2019), others that statistical evidence has a stronger impact on beliefs and attitudes, whereas narrative has a stronger influence on intention (Stubb, 2018). Nevertheless, all studies indicate that depending on the strategic purpose of the use of the communication, both can be effective (Stubb, 2018).

### **1.5. Trust**

Trust is defined as the belief that something or someone is good, sincere, honest, and others, and will not try to harm or trick (Oxford, 2024). In interpersonal relationships, trust is the confidence one person or group rely on one another, it reflects the extent to which each party believe they can depend on to fulfil what they say they will do (Association, 2024). Trust is considered, by most psychologists, to be a fundamental component in mature relationships with others, whether they are intimate, social, or therapeutic (Association, 2024).

Source credibility also affect the trust an audience have in the speaker/influencer when seeing content on social media, given that “a perceive credibility of specific sources stems from a combination of expertise and trustworthiness” (Wellman, 2024), and the credibility and perceived trust of a source plays a crucial role in the acceptance of the message (Eastin, 2001).

On social media, a health-related information post can negatively affect anyone who trust the person who shared it (Patrick, 2022) and according to Pornpitakpan (2004), it doesn't matter the level of expertise, a trustworthy communicator is more influential than an untrustworthy one. Also, since a more trustworthy communicator can “impact on purchase intention, as influencers' credibility defines the expected value of the information provided by their product endorsements” (Weismueller J. H., 2020).

In terms of style of communication, the trustworthiness manifests through transparency and consistency (Wellman, 2024), once it can be a predictor of trust. A storytelling style of communication may bring a sense of trust, since stories forge connection among people, enhancing trust in communications online (Boris, 2017). While an informational style of communication can bring trustworthiness by giving real quantitative information (Gesser-Edelsburg, 2021), however that may be not enough since audiences are more sceptical and need some trust indicators (Curry & Stroud, 2017).

## **1.6. Perceived Empathy**

According to the American Psychological Association Dictionary of Psychology (2023), empathy occurs when understanding a person from their perspective, rather than their own, or vicariously experiencing that person's feelings, perception, and thoughts (path to comprehension).

On social media, empathy can be described as perceived empathy – the extent to which empathy is perceived based on a person's interactions and discourse with others online (Nambisan, 2011). Having that in mind, previous studies shows that normally perceived empathy is higher when the source have prior knowledge of the subject that is being shown (higher credibility) (Hodges, 2010).

Perceived empathy can lead to building a close relationship of a social media user and an influencer (Ki & Kim, 2019). And if a user feels more empathy, then they are more likely to respond positively to an influencer advertising/information, making it more effective (Li, Chen, & Zhou, 2023). To a certain extent, perceived empathy can lead to what is called “parasocial relationship” or “parasocial interaction”. The first, refers to an imaginary relationship or engagement develop by audiences, such as social media consumers, and a media person, such as influencers, being a one-sided relationship where people never had meet (Farivar, Wang, & Yufei Yuan, 2021; Gesser-Edelsburg, 2021). The “parasocial interaction” is the same but only occurs during the exposure of the media and is limited to that period of time, while “parasocial relationship” occurs in a long period and have cognitive and affection components (Farivar, Wang, & Yufei Yuan, 2021).

In addition, the way a message is shown impact the user experience online, and even its perceived empathy, especially if it used a storytelling style of communication (Rovatti, 2023).

## **1.7. Intention of following recommendations**

As described before, an influencer is a person that creates, and shares content related to niche areas of interest or expertise (e.g., fitness, food, games) on social media platforms, by building their online personality and fame (Weismueller J. H., 2020). Nowadays, influencers are related to marketing due to their ability to reach larger audiences (Patrick, 2022), by introducing and promoting products and services.

Consumers follow social media influencers as sources of inspiration and look at them to get advice and recommendations about purchasing decisions (Ki, Park, & Kim, 2022). Someone

on social media being an influencer is not an isolated fact for a person to follow recommendation and make decisions, but the perceive expertise and credibility will change and influence a consumer intention of purchasing products or following recommendations (Pornpitakpan, 2004).

If a consumer has a positive evaluation on the overall credibility of a source, it may generate a purchase intention of the product they were endorsing (Li & Peng, 2021). So, the degree of perceive credibility of the source that send the message, influence people's intention to accept or reject the suggestions made by the source (Pornpitakpan, 2004).

Not only the overall credibility of the source, but also how the message is passed can influence a person's intentions of following recommendations. As described before, people are more willing to accept opinions from stories (storytelling) rather than logical arguments (informational) (Li J, 2019), and the more an audience perceives a message as storytelling, the more likely are to engage with the story elements (like plot and characters). So, storytelling may align well with the dimensions of parasocial relationships, increasing the audiences purchase intentions (Farivar, Wang, & Yufei Yuan, 2021) or follow recommendations.

## **1.8. Research Gap and Hypotheses**

Although previous research focused the effect on how health content in social media affects people's choices – the misinformation, the benefits for the interaction between a health worker and a health consumer, amount others – there is a gap in the literature regarding the impact of the expertise legitimacy of the messenger and style of communication of health-related information online. Hence, this study tries to answer the research question:

*How does the legitimacy of expertise (high vs low) and the style of communication (storytelling vs. informational) interact in order to influence individuals' trust of the message, perceive personal empathy and intention of following recommendations in health-related content on social media.*

In this study we analysed the legitimacy of the expertise (high vs low) and style of communication (storytelling vs informational) on trust of the message, perceived empathy to the influencer, and intention of following their recommendations. To manipulate the legitimacy of expertise, we used the personas “Doctor” for high legitimacy and “Health-coach” to low legitimacy. To answer this, it is proposed the following hypotheses:

***Ha:*** The condition of high legitimacy (Doctor influencer) lead to a higher trust on the message and higher intention of following recommendations and lower empathy than condition of low legitimacy (health-coach influencer).

Moreover, in this study, it is also going to be analysed the difference a style of communication (storytelling vs informational) has in a person trust on the message, perceived empathy, and intention of following recommendations. Leading us to the hypothesis:

***Hb:*** The condition of a storytelling style lead to higher, trust on the message, empathy, and intention of following the recommendations than the condition of informational style.

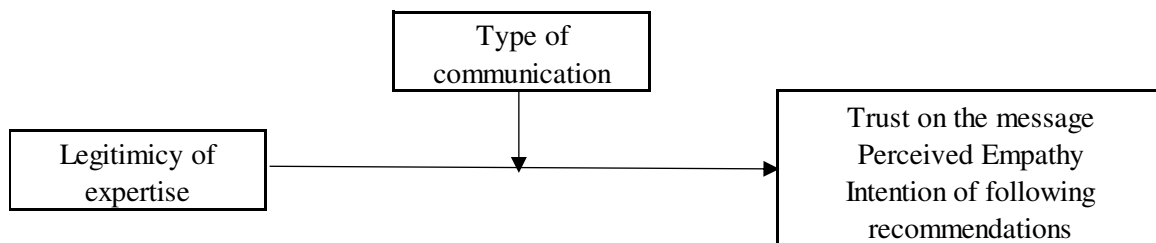
Subsequently, it is proposed that both legitimacy of expertise and style of communication interact. Therefore, the following hypothesis are proposed:

***Hc:*** The effect of storytelling style in the trust of the message, perceived empathy and intention of following recommendations is higher in the condition of low legitimacy (health-coach influencer) than in condition of high legitimacy (doctor influencer).

These three hypotheses will work together and help identify the result of the research question whether the influencer's legitimacy of expertise and style of communication influence a person's perceived trust on the message, empathy and intention to follow recommendations. In this study, the style of communication is an independent variable that will work as a moderator since we expect the results of legitimacy of expertise on the dependent variables to change according to the adoption of different communication styles. The conceptual research model of the study can be seen in Figure 1.

**Figure 1**

*Conceptual Research Model*



## 2. Methodology

### 2.1. Design

This study intent to analyse how people perceive and relate to health information posted online on social media. This includes analysing how the legitimacy of expertise (High vs Low) and style of communication (Storytelling vs. Informational) influence the perception of trust on the message, perceived empathy, and intention to follow recommendations of a person using social media.

The design chosen to answer the research question of this study was an Experimental Design Between Participants with a factorial design of 2x2 being: 2 types of legitimacy of expertise (High vs Low) x 2 styles of communication (Storytelling vs. Informational). For the manipulation of legitimacy of expertise, it was used the personas “Doctor” for high legitimacy and “Health-coach” to low legitimacy.

The survey was completed in an online survey, that also included the analysis of three dependent variables, control, and manipulation questions as well some demographics ones. The full survey can be seen in Appendix 3.

### 2.2. Materials and measures.

#### 2.2.1. Independent Variables

These variables are the ones that were manipulated to the participants.

**Legitimacy of expertise (High vs Low):** This independent variable has two conditions and are distinguished, having in mind a certification associated with the influencer (personas used to manipulate): a Doctor, with a university degree and diploma (High Legitimacy), and an influencer with a Health-Coach certificate (Low Legitimacy). These health-coaches’ certificates, license people to be considered experts and mentors who can help other through giving personalized diet and lifestyle changes (INN, 2024).

Before the presentation of the post, participants were presented with a description of the person they were going to see and, in the post himself, it was clearly presented by presenting “Dr. Lucas Vale” and “Health-Coach Lucas Vale” as it can be seen in Appendix 3.

**Style of communication (Storytelling vs Informational):** Also, an independent variable with two conditions that are manipulated by how the information is presented – in a more storytelling/narrative style or just giving information (informational). The difference in each

scenario was stated in two forms: first, in the description of the person was written in two of them “Dr. Lucas himself suffer from Gluten Intolerance” and “Lucas, himself, suffer from Gluten Intolerance” stating here the personal story, stating that storytelling was going to be presented. Second, the storytelling posts would have an “I” connotation, including personal story, while the informational ones would have a different kind of communication and only presenting information. Once more, the images can be seen in Appendix 3.

Each four participants that answer the survey, were presented with a different scenario with facts and recommendations for and about the Celiac Disease and Gluten Intolerance. Each participant first would see a description about the person they were going to see a post of, then following with the simulation of the post himself. **The scenarios created were:**

**1<sup>st</sup> Scenario (Doctor/Storytelling):** Participants were presented with a post of Dr. Lucas Vale (Medical doctor) who presents information about Gluten Intolerance and suffer from it (Storytelling).

**2<sup>nd</sup> Scenario (Health-coach/Storytelling):** Participants were presented with a post of Lucas Vale (Health-Coach) who presents information about Gluten Intolerance and suffer from it (Storytelling).

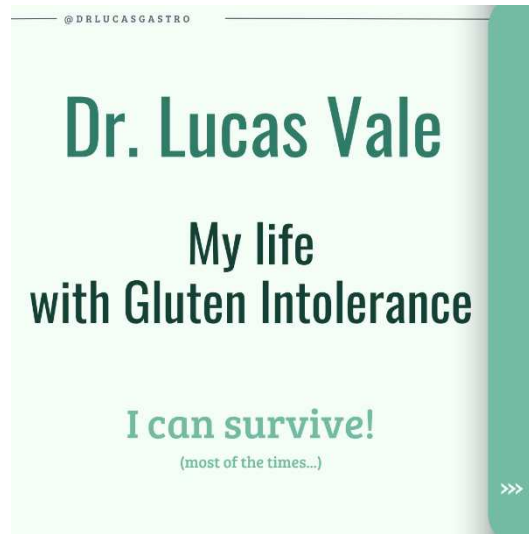
**3<sup>rd</sup> Scenario (Doctor/Informational):** Participants were presented with a post of Dr. Lucas Vale (Medical doctor) who only presents information about Gluten Intolerance (Informational).

**4<sup>th</sup> Scenario (Health-coach/Informational):** Participants were presented with a post of Lucas Vale (Health-Coach) who only presents information about Gluten Intolerance (Informational).

The posts presented were a simulation of an Instagram Carrousel Post. This kind of posts are distinct, since they are posts with more than one picture, or video, and are considered to have a greater potential to elevate consumers’ interactive and engagement experience (I. Rahyadi, 2023). The images used to simulate each Instagram carrousel post of this study can be seen in Appendix 3. They were created by using Canva. Canva is a free and online graphic design tool with a drag-and-drop format that can be used by any average user (Gehred, 2020), and create multiple designs with multiple formats that can be publish anywhere (Canva, 2024). Figure 2 shows an example an example of the cover used for the first scenario: doctor (legitimacy of expertise) and storytelling (style of communication).

## Figure 2

Cover of post of the scenario doctor (legitimacy of expertise) vs storytelling (type of communication)



The information about the disease was searched in websites like Associação Portuguesa de Celíacos (2024), previous studies like the one made by Marciniak and et all (2021), and all the materials and medical content was verified by a Portuguese doctor.

### 2.2.2. Dependent variables

These variables are the ones where we want to measure the effect of the manipulation caused by the independent variables. As stated before, this study had 3 dependent variables:

**Trust on the message:** To measure this variable, was used a 7-point rating scale – inspired in Likert scales – this kind of scales help analyse the thinking, feelings and actions of a person in a scientifically accepted, validated and reliable manner (Ankur Joshi, 2015) – were participants would answer the question “How much do you trust the content presented in the post?” from 1 “Do not trust at all” and 7 “Trust Completely”

**Perceived empathy:** To measure this variable was also used a 7-point rating scale where participants would state from 1 “Not at all” to 7 “Completely” how they feel about some sentences. It was adapted from The Empathy Scale of Lijiang Shen (2010). In the report the author created her own scale having in mind other existing ones, to better fulfil the research objectives. So, to the current study we also adapted the questions to better analyse our variable empathy having in mind the overall research objective.

**Intention of following recommendations:** To measure this variable the 7-point rating scale used was from 1 “Not follow at all” and 7 “Definitely follow”, answering the question “To what extent would you follow the recommendations provided?”. It was also asked, using again a 7-point scale, if participants would feel the need to search for more information before taking any recommendation (from 1 “Not need at all” to 7 “Definitely need”), followed by the question “What kind of information would you search more?”, where were presented some options to choose from.

Social media can be used for lot of reasons like keep in touch with friends, connect with other who share same hobbies or interest and to follow celebrities/personalities they feel a connection to (Emily B. O’Day, 2021). So, to analyse how participants felt in general with the post and person presented, it was asked in a 7-point rating scale if they would be willing to follow the person presented on Instagram and how much would they send the post to a friend.

### **2.2.3. Control variables**

To better understand the participants habits using social media, some control questions were made. First, participants were asked if they used social media by answering a “yes” or “no” question, follow by the time of usage of the social media platforms where they should choose from five options. Participants were also asked to choose the social media platforms that they use more, choosing between seven options and were even given the option to answer and write “other”. Connecting to health-related content, participants were asked if they search this kind of information on social media and needed to choose from “yes”, “no” or “I’m not sure”. After that they should choose from five options the kind of information, they would more likely search on social media and online, was once more given the opportunity to answer and write “other”. The last control question was regarding if they follow health influencers on social media, answering once more from “yes”, “no” or “I’m not sure”.

The Celiac Disease and Gluten Intolerance are two health conditions that have been more and more talked about online, to analyse participants familiarity with it, they were presented with some sentences which they should choose from.

Also, to control and understand the success of the post created to this study, participants were asked to rate in a 7-point scale (1 “Not at all” to 7 “Definitely similar”) if the post presented was similar to a real one and if the post was engaging (1 “Not at all” to 7 “Definitely engaging”).

#### **2.2.4. Manipulation check**

To ensure that participants fully understood their assigned scenario, they were asked which communication style was used by the influencer (“The influencer described in the post presented”) and who was the influencer (“The influencer presented was...”) followed by four options in which they need to choose the right one.

#### **2.2.5. Demographics**

Demographics were asked so we could have a better understanding of the characteristics of our participants: they were asked their gender, age, and nationality.

### **2.3.Procedure**

As stated before, the information to answer this study was collected by using an online survey that was designed on the platform Qualtrics. Before publication, it was pre-tested on a small group of participants that not only had helped eliminate potential errors, but also were presented with the posts created to the manipulation of this study. These small group of participants were asked to analyse if they could feel a difference between the style of communication (storytelling vs informational) in each influencer (medical doctor vs health coach) and if they felt a difference between the posts of each influencer, i.e if they felt a difference between the legitimacy of expertise. As stated before, all medical content presented in each post, was also verified by a General and Family Portuguese Health Doctor.

Afterward, the survey was published in November of 2024 and was online for 10 days. It was mainly distributed through the author personal network and through social media channels like WhatsApp, LinkedIn, Facebook, and Instagram.

The participants started the survey by reading a short introduction and answering if they would like to procedure with the study. After that, through a randomizer, participants would be assigned to one of the four experimental conditions, corresponding to the different scenarios with the manipulation of legitimacy of expertise and style of communication.

After that, participants were asked all the questions related to the: dependent variables (trust on the message, perceived empathy, and intention of following recommendations), the control questions, the manipulations check, and the demographics. In the end, participants were thanked and given the opportunity to provide a comment before concluding the survey.

### 3. Results

#### 3.1. Participants

In total 271 responses were collected, although, after the screening of incomplete responses, we ended up with 164 completed ones. However, the final dataset ended up with 140 responses, since 24 participants didn't pass the manipulation check. The distribution of the 140 responses per experimental condition can be seen in Table 1.

**Table 1**

*Distribution of participants per experimental condition*

		Style of Communication		Total
		Storytelling	Informational	
Legitimacy of Expertise	Doctor	33	34	67
	Low (Health-coach)	40	33	73
	Total	73	67	140

The distribution of gender was not equally distributed in the sample, with 65,00% of participants being female and only 32,10% male, 2,09% preferred not to say. Neither it was equally distributed in nationality since 92,90% of respondents were Portuguese, while 2,01% were Brazilian and the remaining 5,09% were others. See Appendix 4 for a more detailed information about the nationalities. In terms of age, our sample had participants in a range from 17 to 68 years old, however 64,30% of participants had between 19 and 29 years old, being the respondents with 22 years the ones who answered more (8,6%).

#### 3.2. Control variables

##### 3.2.1. Social media usage

All participants as a whole (97,1%) use social media, being only 2,9% that don't use it. 82,1% use social media multiple times per day and 15,7% once a day, while only 1,4% use it two times per week and 0,7% never use it.

The most used social media platform by participants is Instagram with 95% of users – which is meaningful since our study simulate an Instagram post – followed by 54,3% that use YouTube, 38,6% Facebook and 31,4% TikTok. 5% of users mentioned that they use other

platforms that were not presented as an option, like Reddit, WhatsApp, and Treads from Instagram. In Appendix 5 can be seen the information of the remaining platforms used.

### **3.2.2. Health-related content**

This thesis presents a health-related content focus, and 53,6% of participants state that they search health-related information on social media and online, while 39,3% don't and 7,1% are not sure.

Participants would search all kind of health-related information on social media and online: 29,9% search about well-being information like gym tips, 27,1% about nutrition like recipes tips, 17,4% about psychology, 11,6% about woman health like pregnancy information and others, and only 9,1% search for sexual health information. 4,9% stated that they searched for other type information online like their hobbies and games, and about searching health-related information, they would go to google and search for medicine journals and certified websites.

The majority of participants (47,9%) follow health-related influencers on social media, while 41,4% don't and 10,7% are not sure.

### **3.2.3. Disease familiarity**

The disease presented in the scenarios is not very familiar to a common person, however 43,6% of participants have heard about it before, 37,1% have some familiarity with it (a friend or someone they know suffer from it), 9,3% have lot of familiarity with it (them or someone close like a relative suffer from it) while only 6,4% have never heard about the disease before and 3,6% don't know anyone who suffer from it.

### **3.2.4. Engagement and similarity of the post to a real one**

To understand if the posts (scenarios) in the different conditions were providing a similar level of engagement and were equally similar to a real social media post, it was performed an ANOVA for each variable.

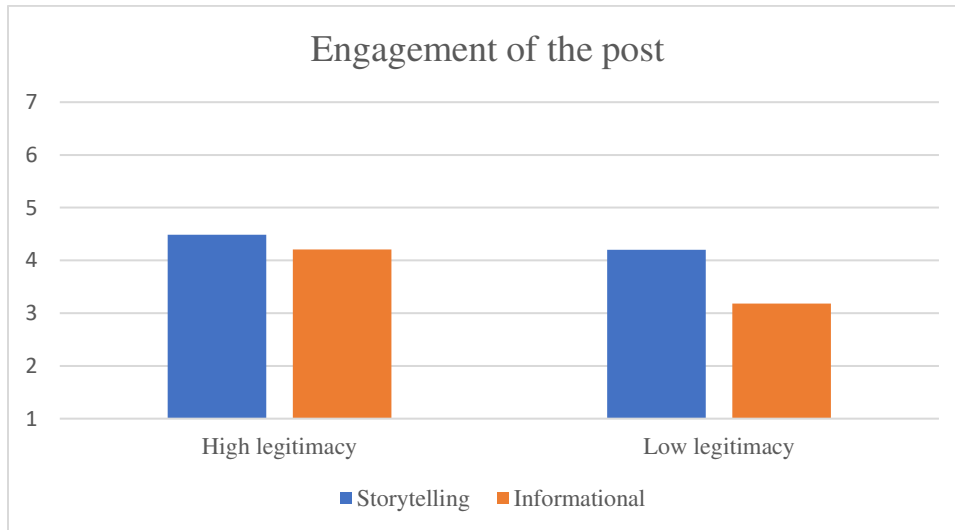
The ANOVA on the variable engagement, shows that there no effect of legitimacy of expertise on trust ( $F(1,136) = 1.56, p = .21, M_{highleg} = 4.34, SD_{highleg} = 1.65, M_{lowleg} = 4.03, SD_{lowleg} = 1.53$ ).

The ANOVA also didn't reveal an effect of style of communication on engagement of the post ( $F(1,136) = 1.51, p = .22, M_{story} = 4.33, SD_{story} = 1.65, M_{info} = 4.01, SD_{info} = 1.51$ ), nor an

interaction effect ( $F(1,136) = .36, p = .849$ ). In Figure 3 is possible to see the marginal means of this variable.

**Figure 3**

*Marginal means of engagement of the post*

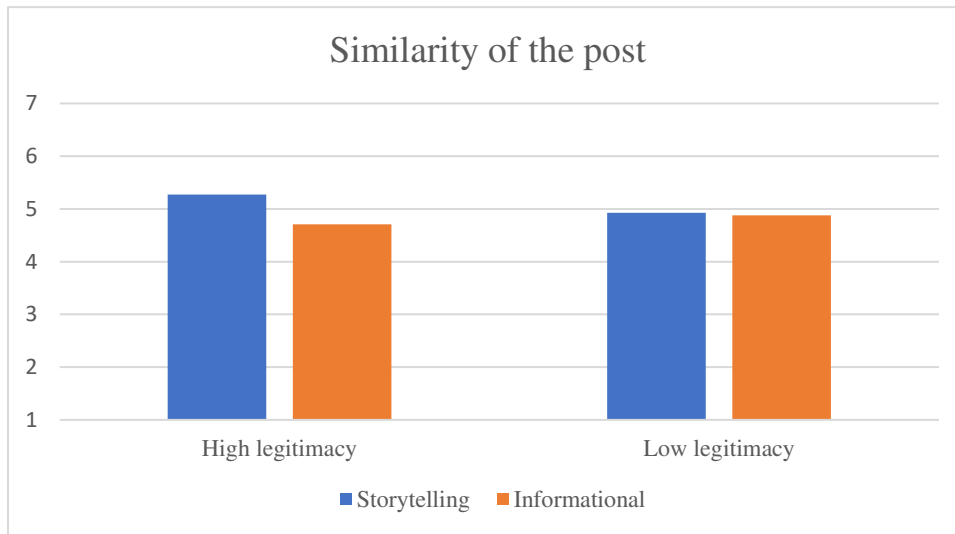


As a comparison with a real post, the ANOVA on the variable similarity, shows that there no effect of legitimacy of expertise on similarity ( $F(1,136) = 0.09, p = .76, M_{highleg} = 4.99, SD_{highleg} = 1.571, M_{lowleg} = 4.90, SD_{lowleg} = 1.725$ ).

The ANOVA also didn't reveal an effect of style of communication on similarity of the post ( $F(1,136) = 1.19, p = .28, M_{story} = 5.08, SD_{story} = 1.68, M_{info} = 4.79, SD_{info} = 1.61$ ), nor an interaction effect ( $F(1,136) = .86, p = .35$ ). In Figure 4 is possible to see the marginal means of this variable.

**Figure 4**

*Marginal means of similarity of the post*



Since we didn't find any effect on engagement and similarity of the post, we can infer that the scenarios were equal to a real post.

### **3.3. Manipulation check**

From the dataset of 164 complete responses, it was made a screening for the accuracy in the manipulation check question and 24 participants didn't pass. So, as stated before, the final dataset ended up with 140 responses.

For the first question participants should choose the right disease and the way it was transmitted (disease and style of communication), and in the second one, should choose the right description of the person (legitimacy of expertise). 24 participants (14,6%) answered totally wrong in the manipulation, choosing the wrong disease and/or the wrong expert, and these participants were the ones deleted. However, 19 participants (11,6%) answers partially wrong since they choose an answer that should not be considered – “the influencer presented was a person with a professional background in nutrition” – since the content presented was related to the digestive system and people assume it is related to nutrition, we considered this question to be done in a dubious way and decided to keep these 19 participants.

### **3.4. Trust**

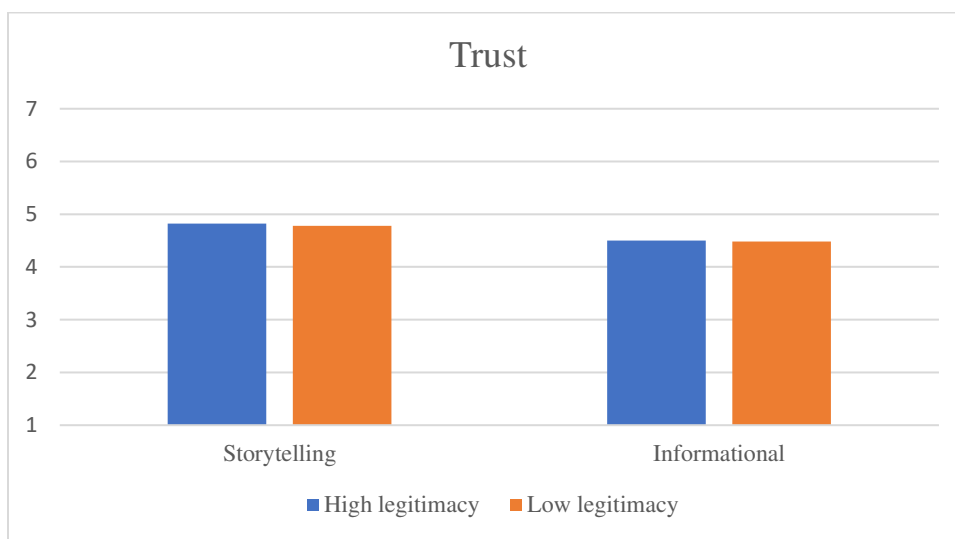
The ANOVA on the dependent variable Trust, shows that there no effect on legitimacy of expertise on trust ( $F(x) = 0.51, p = .82, M_{highleg} = 4.66, SD_{highleg} = 1.38, M_{lowleg} = 4.62, SD_{lowleg} = 1.43$ ).

The ANOVA also didn't reveal an effect of style of communication on trust ( $F(x) = 1,367$ ,  $p = .24$ ,  $M_{story} = 4.8$ ,  $SD_{story} = 1.4$ ,  $M_{info} = 4.49$ ,  $SD_{info} = 1.40$ ), nor an interaction effect ( $F(x) = .027$ ,  $p = .87$ ).

We do not confirm our hypotheses. The graphic of the marginal means of trust can be seen in Figure 5.

**Figure 5**

*Marginal Means of Trust*



### 3.5. Perceived Empathy

The variable perceived empathy was measured with 5 different questions, so to evaluate its internal consistency it was performed the Cronbach's alfa (see Table 2). Since Cronbach's alfa = 0,842, we consider that there is a high level of internal consistency. If any question (item) was deleted from the analyse, the Cronbach's alfa would be lower (see Table 3). So, the analyse of this dependent variable on the independent ones will be evaluated having in mind the average of the 5 responses.

**Table 2**

*Cronbach's Alpha of dependent variable Perceived Empathy*

Cronbach's Alpha	Reliability Statistics	
	Cronbach's Alpha Based on Standardized Items	N of Items
0,842	0,842	5

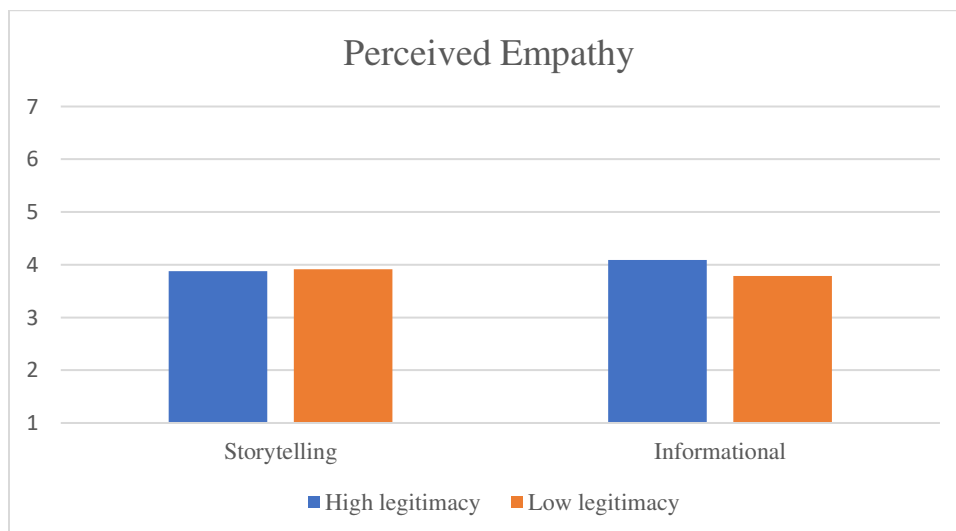
**Table 3***Cronbach's Alpha if an Item is deleted*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
<b>Empathy_1</b>	15,91	27,32	0,61	0,43	0,821
<b>Empathy_2</b>	14,23	30,31	0,58	0,45	0,827
<b>Empathy_3</b>	15,63	27,31	0,72	0,61	0,790
<b>Empathy_4</b>	16,04	27,62	0,61	0,57	0,821
<b>Empathy_5</b>	16,57	25,96	0,72	0,66	0,787

The ANOVA, on the dependent variable perceived empathy, shows that there is no effect on legitimacy of expertise on perceived empathy ( $F(x) = .359, p = .550, M_{highleg} = 3.99, SD_{highleg} = 1.27, M_{lowleg} = 3.9, SD_{lowleg} = 1.31$ ).

The ANOVA also didn't reveal an effect of style of communication on perceived empathy ( $F(x) = .035, p = .85, M_{story} = 3.90, SD_{story} = 1.34, M_{info} = 3.94, SD_{info} = 1.24$ ), nor an interaction effect ( $F(x) = 0.58, p = 0.45$ ).

We do not confirm our hypotheses. The graphic of the marginal means of perceived empathy can be seen in Figure 6.

**Figure 6***Marginal Means of Perceived Empathy*

### 3.6. Intention of following recommendation

The ANOVA, on the dependent variable intention of following recommendations, shows that there is no effect on legitimacy of expertise on intention of following recommendations ( $F(1,136) = .28, p = 0.87, M_{highleg} = 4.19, SD_{highleg} = 1.49, M_{lowleg} = 4.15, SD_{lowleg} = 1.79$ ).

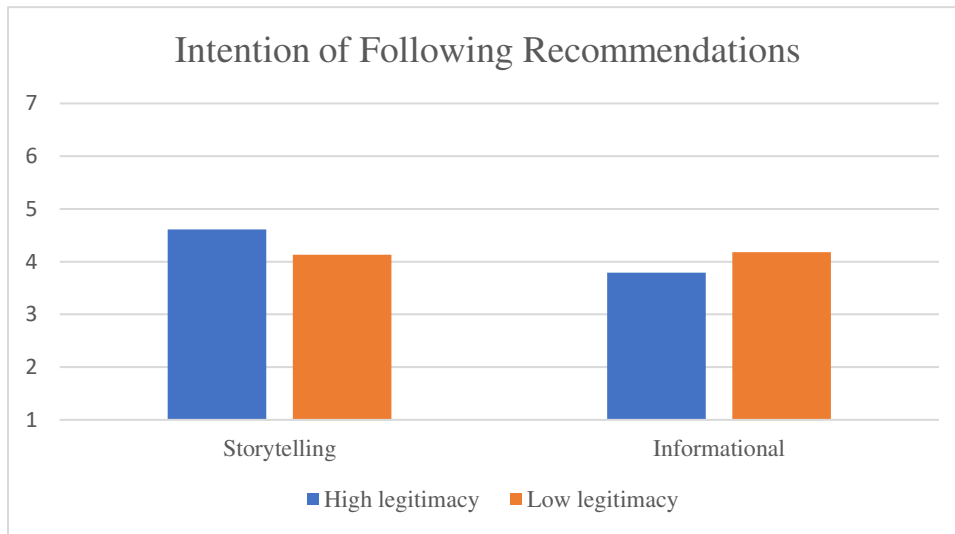
The ANOVA also didn't reveal an effect of style of communication on intention of following recommendations ( $F(1,136) = 1.85, p = .18, M_{story} = 4.34, SD_{story} = 1.67, M_{info} = 3.99, SD_{info} = 1.6$ ). However, there is a tendency to exist an effect of style of communication since  $p$  is close to 1%. After performing the Independent T-test for each independent variable, we can infer that there is no main interaction between the storytelling and the condition of legitimacy of expertise ( $F(1,71) = 8.714, one-sided p = .11, M_{highleg} = 4.61, SD_{highleg} = 1.30, M_{lowleg} = 4.13, SD_{lowleg} = 1.92$ ). Nor and interaction between informational and the legitimacy of expertise ( $F(1,65) = .272, one-sided p = .16, M_{highleg} = 3.79, SD_{highleg} = 1.57, M_{lowleg} = 4.18, SD_{lowleg} = 1.63$ ).

The ANOVA didn't reveal an interaction effect ( $F(1,136) = 2.45, p = 0.12$ ).

Nevertheless, after looking at the graphic of the marginal means of intention of following recommendations, that can be seen in Figure 7, it looked like it could exist an interaction effect of legitimacy of expertise, so it was performed another Independent T-test. It showed that there is no effect of the condition of low legitimacy (Health-coach) in the condition of style of communication on intention of following recommendations ( $F(1,71) = 1.72, one-sided p = .45, M_{story} = 4.13, SD_{story} = 1.92, M_{info} = 4.18, SD_{info} = 1.63$ ). However, there is an interaction effect of the condition of high legitimacy (Doctor) and the style of communication on the intention of following recommendations ( $F(1,65) = 1.02, one-sided p = .012, M_{story} = 4.61, SD_{story} = 1.29, M_{info} = 3.79, SD_{info} = 1.57$ ). So, we infer that there is an interaction of the legitimacy of expertise and the style of communication.

**Figure 7**

*Marginal Means of Intention of Following Recommendations*



### **3.6.1. Information searched before following the recommendation**

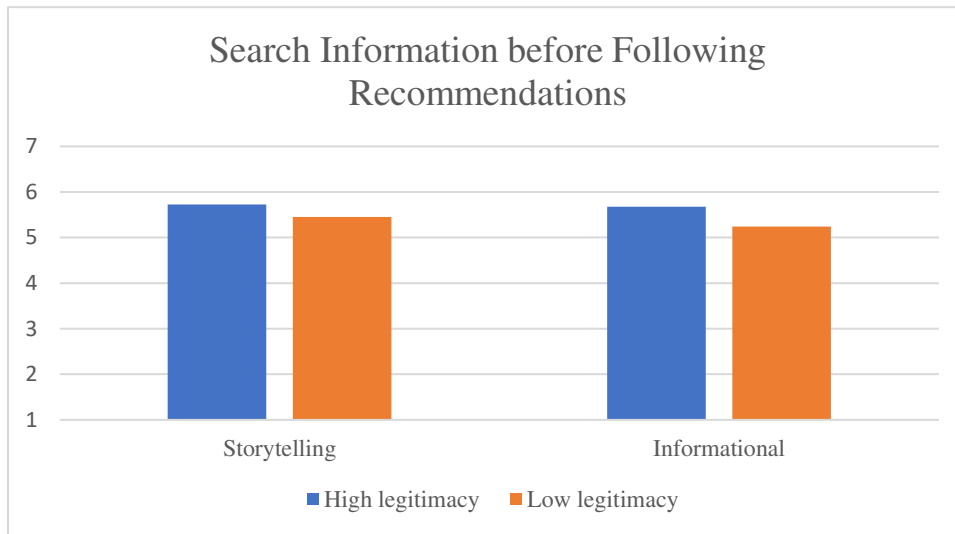
The ANOVA, on the intention of searching for information before following recommendations, shows that there is no effect on legitimacy of expertise on that action ( $F(1,136) = .24, p = .63, M_{highleg} = 5.58, SD_{highleg} = 1.45, M_{lowleg} = 5.46, SD_{lowleg} = 1.64$ ).

The ANOVA also didn't reveal an effect of style of communication on perceived empathy ( $F(1,136) = 1.79, p = .18, M_{story} = 5.70, SD_{story} = 1.314, M_{info} = 5.36, SD_{info} = 1.751$ ). Although, there is a tendency since  $p$  is close to 1%, so it was performed an Independent T-test. There is no interaction effect of storytelling and the legitimacy of expertise ( $F(1,71) = 8.03, one-sided p = .218, M_{highleg} = 5.73, SD_{highleg} = 1.04, M_{lowleg} = 5.45, SD_{lowleg} = 1.79$ ) nor the interaction of the effect of informational and the legitimacy of expertise ( $F(1,65) = .134, one-sided p = .140, M_{highleg} = 5.68, SD_{highleg} = 1.55, M_{lowleg} = 5.24, SD_{lowleg} = 1.71$ ). So, there still no effect of style of communication in the intention of searching for information before following recommendations.

The ANOVA also didn't reveal an interaction effect ( $F(1,136) = .87, p = .77$ ). The graphic of the marginal means of intention of following recommendations can be seen in Figure 8.

**Figure 8**

*Marginal means of Search Information before Following Recommendations*



Despite that information, in general the type of information people would search before following recommendations was: 42% of participants stated that they would search information about the disease presented, followed by 30,4% that would search more about the specific recommendations provided, 15,2% would search about the influencer background, and 8,7% and 3,6% would search previous posts from the same influencer and about similar influencers, respectively. Per experimental condition the differences of what type of information searched before following recommendations varies across the experimental conditions created, and in Table 4 is possible to see the values of it per experimental condition.

**Table 4**

*Type of information searched before following recommendations per condition*

			About the Disease	About the recommendations Provided	About the influencer background	About other posts from the same influencer	About similar influencers
<b>Legitimacy of Expertise</b>	<b>High Legitimacy</b>	<b>Storytelling</b>	24,0%	22,4%	23,5%	16,0%	12,5%
		<b>Informational</b>	21,6%	27,1%	32,4%	8,0%	0,0%
	<b>Low Legitimacy</b>	<b>Storytelling</b>	29,6%	28,2%	14,7%	36,0%	25,0%
		<b>Informational</b>	24,8%	22,4%	29,4%	40,0%	65,0%
<b>Total</b>			100%	100%	100%	100%	100%

### 3.7. Other analysis

In addition to the analysis of the main dependent variables, it was performed and analyse how participants felt in general with the post and person presented to have a full overview of the participants adherence and perception of the information of the post.

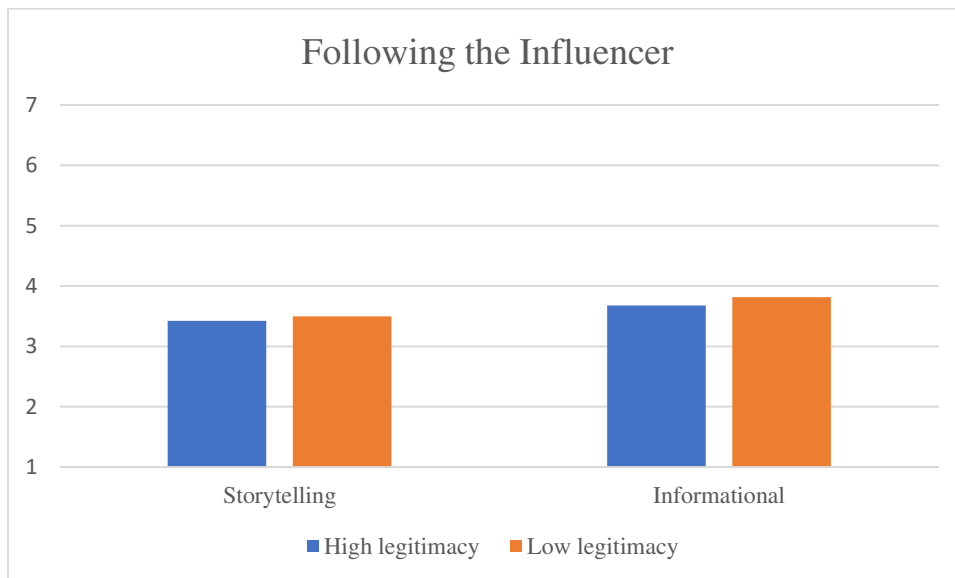
#### 3.7.1. Following the influencer presented

The ANOVA, on the intention of following the influencer presented, shows that there is no effect on legitimacy of expertise on it ( $F(1,136) = .12, p = .73, M_{highleg} = 3.55, SD_{highleg} = 1.73, M_{lowleg} = 3.64, SD_{lowleg} = 1.98$ ).

The ANOVA also didn't reveal an effect of type of communication on intention of following recommendations ( $F(1,136) = .81, p = .37, M_{story} = 3.47, SD_{story} = 1.90, M_{info} = 3.60, SD_{info} = 1.81$ ), nor an interaction effect ( $F(1,136) = .110, p = .92$ ). In Figure 9 is possible to see the marginal means graph.

**Figure 9**

*Marginal means of following the influencer*



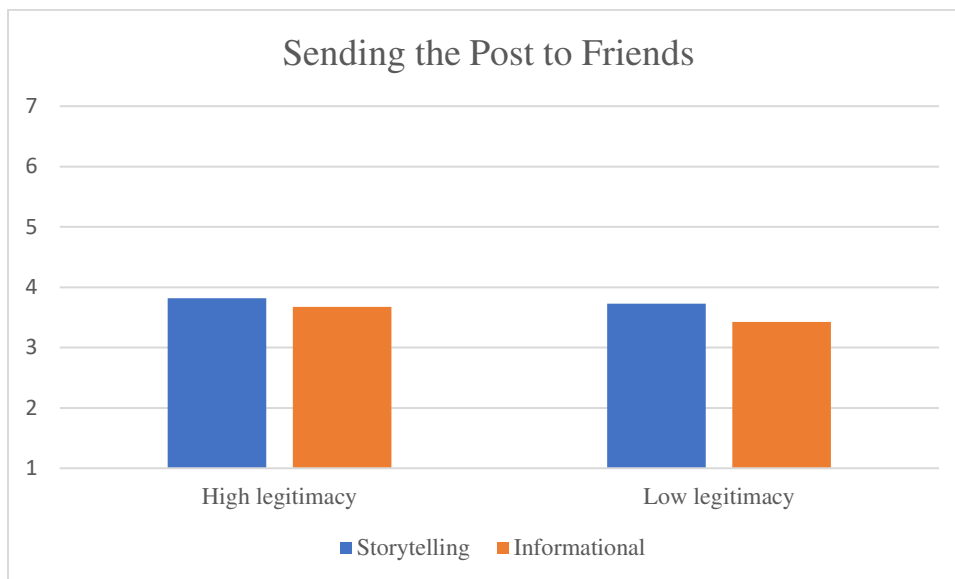
#### 3.7.2. Send post to friends

The ANOVA, on the intention to send the post to friends, shows that there is no effect on legitimacy of expertise on that action ( $F(1,136) = 0.32, p = .58, M_{highleg} = 3.75, SD_{highleg} = 1.76, M_{lowleg} = 3.59, SD_{lowleg} = 1.85$ ).

The ANOVA also didn't reveal an effect of style of communication on intention of following recommendations ( $F(1,136) = .516, p = .47, M_{story} = 3.77, SD_{story} = 1.84, M_{info} = 3.55, SD_{info} = 1.77$ ), nor an interaction effect ( $F(1,136) = .067, p = .79$ ). The marginal means can be seen in Figure 10.

**Figure 10**

*Marginal means of sending the post to friends*



## 4. General discussion

This study aimed to analyse the impact legitimacy of expertise (high vs low) and style of communication (storytelling vs informational) has in the perceived trust on the message, empathy, and intention of following health recommendations in a social media.

Overall, there were no significant results in response to the hypothesis presented in this study. It showed that neither legitimacy of expertise (high vs low) nor style of communication (storytelling vs informational) significantly influences on trust of the message, perceived empathy, and intention of following recommendations. Even though there is not a main effect of legitimacy of expertise and style of communication on intention of following recommendations, there is a tendency to happen an effect since the results showed an interaction effect.

Even though previous literature about the impact of the style of communication used in a message, state contradictory results, like: people are more willing to accept opinions from stories (storytelling) rather than logical arguments (informational) (Li J, 2019), and others that statistical evidence has a stronger impact on beliefs and attitudes, whereas narrative has a stronger influence on intention (Stubb, 2018). And other literature on perceived credibility state that perceived credibility of a source plays a crucial role in the acceptance of the message (Eastin, 2001). With the results of this study, it is possible to infer that the communication style and legitimacy of expertise doesn't affect the trust of the message and perceived empathy once people perceive the information the same way in both independent variables conditions.

In this study, could have occur confirmation bias – a cognitive bias of thinking that suggests that a person seek and trust information that confirms and are congruent with their beliefs, even if they are incorrect (Casad & Luebering, 2024) – on the persons trust on the message and consequent perceived empathy, since it changes according to a person's previous knowledge of the information that is being presented.

The hypothesis of the study are rejected for trust and perceived empathy, but in fact they have impact on the intention of following recommendations due to the tendency of the interaction effect. This is somehow aligned with the literature, that state that the degree of perceive credibility of the source that send the message, influence people's intention to accept or reject the suggestions made by the source (Pornpitakpan, 2004) and that a storytelling style of communication may engage more with the message and consequently increase audiences purchase intentions (Farivar, Wang, & Yufei Yuan, 2021).

It's considered that the results for trust and perceived empathy are different than the intention of following recommendations and may even be considered as less relevance, since when looking online and on social media, people seek for information that gives them concrete solutions and actions they should take, like recommendations, and when dealing with health content, people look for health guidance (Sinha & Serin, 2024) .

#### **4.1.Theoretical implications**

This study contributed to the existing literature by trying to explain the acceptance and perceptions of health recommendations and information on social media. Even though, there are no significant effects on our study, it could be a bridge for future research.

In terms of theoretical implications, the inexistent significance of results could be related to the variables chosen. Re-analysing the existing literature, it is possible to find variables that could bring significant results.

Considering, people are surrounded by information from all over the place, the tv, the outdoors in the cities, the social media, the internet, and all it had to offers. This research is also relevant for the emergent concerns with misinformation. Sometimes is difficult to trust and believe in all we see, especially in social media since it can have a big dissemination of misinformation and disinformation: rumour, spam, and fake news (Liang Wu, 2019). By definition, misinformation is false or inaccurate information—getting the facts wrong and disinformation, it is false information which is deliberately intended to mislead—intentionally misstating the facts (American Psychological Association, 2024). It becomes even more concerning when we are talking about health-related content since its misinformation can be related to false, inaccurate, or misleading information compared with the best evidence at the time (Patrick, 2022; Wen-Ying Sylvia Chou, 2020). That's why a dependent variable about the perceived misinformation or the perceptions of information accuracy could help understand the impact of the influencer and message credibility.

It is known that the regular use of social media may affect the well-being and mental health of its users (Bashir & Bhat, 2017). It can affect and trigger anxiety, stress, depression, loneliness, fatigue, body image concerns and eating disorders, among others (Bashir & Bhat, 2017). Due to the sensibility some people may have when seeing content on social media, another dependent variable that could affect our study is the emotional response to the post presented. Emotional response refers to and individual reactions and feelings experienced during and event or stimuli (Niedenthal & Halberstadt, 1995), so more than the perceived

empathy a person could feel in an online post, the overall emotions felt can impact the overall perception of the post, and study.

This study had participants with a big discrepancy in terms of age. It is known that every person is different and in terms of usage of social media, age can take a crucial role. The way different generations engage with technology change according to their exposure, or lack of, to digital environments (Sinha & Serin, 2024). Along with the fact that different generations search and apply health information gain on social media differently (Sinha & Serin, 2024). So, the variable age could be a good moderator for the study and reduce possible bipolar information.

Style of communication changes how a message is conveyed. Nevertheless, another variable that could be used as independent variable was framing of the message. Frame of message suppose that an issue is conveyed in a certain way to transmit a certain meaning (Ballejo, Plaza, & Lambertucci, 2021), like a positive vs negative one, or urgent vs non-urgent. The way a message is framed could influence the general perception and intention to take attitudes on the health content presented in this study.

## **4.2. Practical Implications**

This study can also present practical contributions, in addition to the theoretical ones, with a concrete suggestion

It is suggested that any healthcare provider or entrepreneurs in health field that want to use social media as a tool to be closer to any consumer of health information, to consider using an influencer with a high level of legitimacy of expertise (like a specialized doctor) using a storytelling communication style.

The storytelling style used should be conveyed not only with the personal narrative from previous personal experiences with the disease (the “I”), but also explaining the facts in a narrative way, telling a story, more than presenting logical arguments.

This suggestion comes from the fact that this study found a positive tendency to have a significance of the impact of high legitimacy of expertise and the using of storytelling in the intention of following recommendations. Even though trust and perceived empathy didn’t have any significant result, they would still be impacted by the choice of this influencer and style of communication. In fact, by even changing the way the information is presented (from a writing post to a video one), the parasocial relationship – imaginary relationship with cognitive and

affection components in a long period of time (Farivar, Wang, & Yufei Yuan, 2021) – or parasocial interaction – an imaginary relationship that only occurs during the exposure of the media (Farivar, Wang, & Yufei Yuan, 2021) – between the influencer presented and its audiences, can grow.

### **4.3.Future research and limitations**

This research has the potential to contribute with relevant knowledge for the academic researchers, health-care providers, and entrepreneurs in health field. Nevertheless, and as in all research, certain limitations are attributed to this study, as well future research indications.

Having in consideration the importance of the manipulations for the study, it is possible that the ones created weren't strong enough to catch the participants and putting themselves in the position to clearly understand the scenario presented. And even though the majority of participants considered the post created similar to real ones on Instagram, in future research should be considered and make manipulations where differences between influencers (legitimacy of expertise) and style of communication are clearly perceived. So, although the manipulations created were tested by a small group of participants, in future research is important to do a more detailed pre-test whether people distinguish the legitimacy of each influencer, and even the communication styles used, since in writing posts it could be more difficult to differentiate. It is also important to analyse if on social media people perceive these two personas (doctor and health-coach) the same way and give them the same credibility or not.

It was also possible that the post created was so similar and engaging to a real one, that occurred a social media phenomenon and participants didn't paid attention to the post like they do in their day to day use of social media – the actual attention span is less than 9 seconds, some consider it to be 2 seconds in social media (Nussenbaum, 2023; David, 2024). With this in mind, we suggest that in future research it is consider implementing a predefined time limit per page of the survey, more specifically in the manipulation, during which participants are unable to move forward with the images until the time has elapsed. This approach could help ensure that participants fully read and view all the information presented.

Nowadays on social media, people are presented with lot of different influencers, types of posts, and styles of communication, and the presentation of information in the form of short videos is the most common used. With that, it is suggested that in future research the manipulations created are done in a form of video, ensuring an even more engaging and similar social media post to real life. In addition, the present study can be considered to be created in a

lab setting since participants were forced to pay attention to post presented, so it could be important in the future to capture and convey consumers' real-life attention to the different stimuli. Considering this suggestion, it could also be important to have the comparison of data from real influencers, comparing the manipulation and study done, to the data that occur in real life.

The design used in this study was a between participants, where each participant would be presented with a different experimental condition, meaning that the study was shorter and the risk of losing attention is lower. However, for future studies, we suggest that is used a mixed design between style of communication and within legitimacy of expertise since the same participant will be presented with two experimental conditions. This design would allow us to test better the interaction hypothesis (like  $H_c$ ) and how people perceive the legitimacy of expertise of an influencer since they are presented with both levels of legitimacy, not being biased by the style of communication used, once participants may have a preferred one.

## **5. Conclusions**

This study aimed to investigate the effects of legitimacy of expertise and style of communication on perceived trust, empathy, and intention to follow health recommendations on social media. It was done using a 2x2 experimental design, where participants were presented with one out of four manipulations condition.

The data analysis results, showed that there are no significant differences for trust nor perceived empathy for either the different legitimacies of expertise or style of communication. However, they showed a tendency to have significance in the interaction effect of intention of following recommendations in the condition of high legitimacy and style storytelling.

While future research is needed to improve our studies results and suppress some limitations in order to go deeper and analyse factors that may influence the trust on the message and perceived empathy of health-related content on social media. Healthcare providers or entrepreneurs in health field that want to use social media as a tool to be closer to any consumer of health information by giving recommendations, should use an influencer with a high level of legitimacy of expertise (like a specialized doctor) using a storytelling communication style.

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## Appendix

### Appendix 1 - Various types of social media

Type of Socia Media	Purpose	Examples
Social networks	Connect with people	– Facebook
		– Twitter (X)
		– LinkedIn
		– Sina
		– Weibo
Media sharing networks	Share photographs, videos, podcasts, and other media	– Instagram
		– Snapchat
		– YouTube
		– Apple Podcasts
		– Tik Tok
Discussion forums	Share news and ideas	– Reddit
		– Quora
Bookmarking and content curation networks	Discover, share and save new content	– Pinterest
		– Flipboard
Consumer review networks	Find a review business	– Yelp
		– TripAdvisor
Blogging and Publishing networks	Publish content online	– WordPress
		– Tumblr
		– Medium

Adapted from: (Patrick, 2022)

## Appendix 2 - Benefits and Limitations of using social media for health communication for the general public, patients, and health professionals

	General Public	Patients	Health Professionals
<b>Benefits</b>			
Increase interactions with others	✓	✓	✓
More available, shared and tailored information	✓	✓	✓
Increase accessibility & widening access	✓	✓	✓
Peer/social/emotional support	✓	✓	✓
Public health surveillance	✓	✓	✓
Potential to influence health policy	✓	✓	✓
<b>Limitations</b>			
Lack of reliability	✓	✓	✓
Quality concerns	✓	✓	✓
Lack of confidentiality & privacy	✓	✓	✓
Often unaware of the risk of disclosing personal information online	✓	✓	
Risks associated with communicating	✓	✓	

harmful or incorrect advice			
Information overload	✓	✓	
Not sure how to correctly apply information found online to their personal health situation	✓	✓	
Certain social media technologies may be more effective in behaviour change than others	✓		
Adverse health consequences	✓		
Negative health behaviours	✓		
Social media may act as a deterrent for patients from visiting health professionals		✓	✓
Currently may not often use social media to communicate to patients			✓

Adapted from: (Moorhead SA, 2013)

## Appendix 3 – Survey Layout

### *Start of Block: Introduction*

**Q1** Dear participant,

This questionnaire is carried out within the scope of the Master's Final thesis project in Management with specialization in Strategic Marketing from Católica Lisbon School of Business & Economics. This study aims to understand how people perceive information shared in social media. There are no right or wrong answers, we are only interested in your opinion. Your participation in this questionnaire is anonymous and confidential and the information collected only be used for the purpose of this study. The questionnaire is designed to last approximately 9 minutes. We thank you in advance for your availability and participation in this study. If there is any question or comment, you can contact me via [s-gsgodinho@ucp.pt](mailto:s-gsgodinho@ucp.pt)

**Q2** Do you agree to continue and to complete the survey?

- Yes
- No

Skip To: End of Survey If “Do you agree to continue and to complete the survey?” = No

### *End of Block: Introduction*

### *Start of Block: Storytelling doctor*

**Q3** In this survey, you will be asked to see a fictitious social media post about digestive health and then you will be asked to give your opinion about it. Please read carefully.

### *Start of Block: Storytelling doctor*

**Q3.1** Imagine that you are scrolling through your Instagram feed, and you came across a post of Lucas Vale.

Lucas is a **gastroenterologist, a doctor specialized in problems in the digestive system**, especially the Celiac Disease and Gluten Intolerance. All his studies were based on this area, and he has helped more than 500 people that suffer from Celiac Disease and Gluten Intolerance.

In addition, **Dr. Lucas himself suffers from Gluten Intolerance.** So, to spread awareness about it and to connect with people, Dr. Lucas presents lot of information on his Instagram account.

Now you will see a post that Dr. Lucas made on Instagram.

Please read carefully.

*Page Break*

@DR.LUCASGASTRO

# Dr. Lucas Vale

## My life with Gluten Intolerance

**I can survive!**  
(most of the times...)

>>>

## My symptoms?

After eating cakes, pasta or bread I experience:

- Diarrhea
- Fatigue
- Bloating

**IT'S SUCH A BUMMER!**

>>>

## I suffer from gluten intolerance!

My symptoms are so banalized, that 1 to 2% of the mundial population has celiac disease and don't even know it!

The Celiac Disease is an autoimmune disease while the Gluten Intolerance only causes a digestive discomfort.

It has been increasing!  
Check this

Year	Celiac Disease (%)	Gluten Intolerance (%)
1980	0	0
1985	0	5
1990	0	10
1995	0	15
2000	0	20
2005	10	30
2010	90	50

>>>

## What about you?

If this sounds familiar, think about booking an gastroenterology consultation to get checked.

↓

**You may be gluten intolerant**

That's how I got diagnosed even before I became a doctor

>>>

**Get tested, feel better**

---

As a Dr. specialist in the area, I really recommend:

**Book an appointment with a gastroenterology specialist.**

and

**Test your diet at home to see how your body reacts**

**This can help you get answers !** >>>

**Did I help you?**

More people should know about celiac

Share with your friends!

♥ ↘ 📌 💬

@DRLUCASGASTRO  
MEDICAL DOCTOR

**Q3.2** Having in mind what you learned about celiac disease and gluten intolerance. How much do you trust the content presented in the post? Evaluate from 1 “Do not trust at all” to 7 “Trust completely.

- 1 - Do not trust at all
- 2
- 3
- 4
- 5
- 6
- 7 - Trust Completely

*Page break*

**Q3.3** Please select what applies best and describes what you feel according to the following statements. From 1 “Not at all” to 7 “Completely”

1  
Not at all      2      3      4      5      6      7  
Completely

---

I can feel  
the emotions  
of Dr Lucas

---

I can see  
Dr. Lucas’  
point of view

---

When  
reading the  
message, I  
was fully  
absorbed

---

I can  
somehow  
relate to what  
Dr. Lucas was  
going through  
in the message

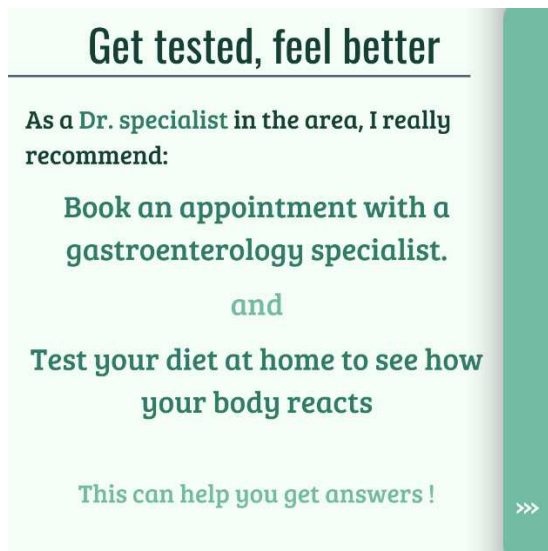
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I can  
identify with  
Dr. Lucas

---

*Page break*

**Q3.4** Previously, you were presented with the post below, with recommendations from the influencer. Having in mind these recommendations, please answer the following question.



**Q3.5** To which extent would you follow the recommendations provided? From 1 "Not follow at all" and 7 "Definitely follow"

- 1 - Not follow at all
- 2
- 3
- 4
- 5
- 6
- 7 - Definitely follow

*Page break*

**Q3.6** Would you feel the need to search more information before taking any recommendation? From 1 "Not need at all" to 7 "Definitely need"

- 1 - Not need at all
- 2
- 3
- 4
- 5
- 6
- 7 - Definitely need

*Page break*

**Q3.7** What kind of information would you search more?

- About the disease
- About the influencer background
- About other posts from the same influencer
- About similar influencers
- About the recommendations provided

*Page break*

**Q3.8** Would you be willing to follow this person on Instagram? From 1 "Not willing at all" to 7 "Totally willing"

- 1 - Not willing at all
- 2
- 3
- 4
- 5
- 6
- 7 - Totally willing

*Page break*

**Q3.9** How much would you send this post to a friend? From 1 "Not send at all" to 7 "Totally send".

- 1 - Not send at all
- 2
- 3
- 4
- 5
- 6
- 7 - Totally send

*Page break*

Fantastic! Now let's continue with some few additional questions.

*Page break*

**Q3.10** Normally, do you use social media platforms?

- Yes
- No

*Page break*

**Q3.11** How often do you use Social Media?

- Less than once a week
- 2 times per week
- Once a day
- Multiple times per day
- Never

*Page break*

**Q3.12** Which social media platforms do you use more?

- Facebook
- Instagram
- LinkedIn
- Pinterest
- X (Twitter)
- Tik Tok
- YouTube
- Other \_\_\_\_\_

*Page break*

**Q3.13** Do you normally search for health-related information on social media? From nutrition, to fitness, psychology, and others?

- No
- I'm not sure
- Yes

*Page break*

**Q3.14** Which information would you be more prompt to search on social media and online?

- Nutrition – recipes tips
- Woman health – pregnancy and others
- Psychology
- Well-being – gym tips
- Sexual health
- Other \_\_\_\_\_

*Page break*

**Q3.15** Do you follow health influencers on social media?

- Yes
- I'm not sure
- No

*Page break*

**Q3.16** Are you familiar with the celiac disease and gluten intolerance?

- I have lot of familiarity with it (I or a person close to me suffer from it)
- I have some familiarity with it (a friend or someone known suffer from it)
- I've heard about it before
- I've never heard about it before
- I don't know anyone who suffer from it

*Page break*

We are almost finishing it...

*Page break*

**Q3.17** Think about the post presented: How engaging do you feel it was? From 1 "Not at all" to 7 "Definitely engaging"

- 1 - Not at all
- 2
- 3
- 4
- 5
- 6

- 7 - Definitely engaging

*Page break*

**Q3.18** How similar to a real post on Instagram was the one presented? From 1 "Not at all" to 7 "Definitely similar"

- 1 - Not at all
- 2
- 3
- 4
- 5
- 6
- 7 - Definitely similar

*Page break*

**Q3.19** The influencer described in the post presented:

- Celiac disease symptoms based on their own experience.
- Asthma symptoms based on their own experience.
- Celiac disease symptoms based on the experiences of other people.
- Asthma symptoms based on the experiences of other people.

*Page break*

**Q3.20** The influencer presented was (choose 2):

- A person with a professional background in medicine
- A person with a professional background in nutrition
- A person with a professional background with the disease
- A person with a professional health-coach certificated

*Page break*

**Q3.21** What is your gender?

- Male
- Female
- Non-binary / third gender

- Prefer not to say

*Page break*

**Q3.22** What is your age?

---

*Page break*

**Q3.23** What is your nationality? Choose one option.

American	Dutch
Australian	French
Austrian	German
Belgian	Hungarian
Bolivian	Italian
Brazilian	Mexican
British	Polish
Bulgarian	Portuguese
Canadian	Russian
Colombian	Spanish
Croatian	Swedish
Danish	Ukrainian
Dominican	Other

---

**All the questions for the other scenarios were very similar (changing only the name of the influencer on question Q3.3 and the image in Q3.4).**

Now it is going to be presented the description and post of the other scenarios: storytelling health coach, informational doctor, and informational health coach.

*Start of Block: Storytelling health coach*

**Q4.1** Imagine that you are scrolling through your Instagram feed, and you came across a post of Lucas Vale.

Lucas is a young influencer that took a **master’s degree in marketing and have a health-coach certificate**, that allows him to prescribe health food suggestions, nutrition, and lifestyle. His work is to share on his social media accounts, especially on Instagram, lifestyle tips and to help people with some digestive system issues and he have helped more than 500 people that suffer from Celiac Disease and Gluten Intolerance.

**Lucas, himself, suffer from a Gluten Intolerance**, so he posts more about it to make people more aware of it. Now you will see a post that Lucas made on Instagram.

Please read carefully.

**Health Coach Lucas Vale**

**My life with Gluten Intolerance**

**I can survive!**  
(most of the times...)

**My symptoms?**

After eating cakes, pasta or bread I experience:

- Diarrhea
- Fatigue
- Bloating

**IT'S SUCH A BUMMER!**

**I suffer from gluten intolerance!**

My symptoms are so banalized, that 1 to 2% of the mundial population has celiac disease and don't even know it!

The Celiac Disease is an autoimmune disease while the Gluten Intolerance only causes a digestive discomfort.

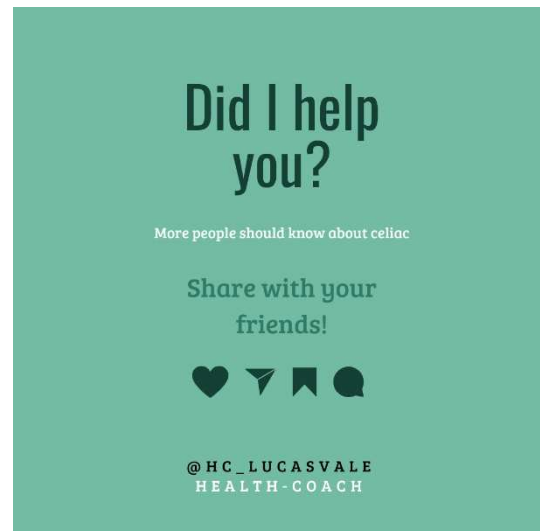
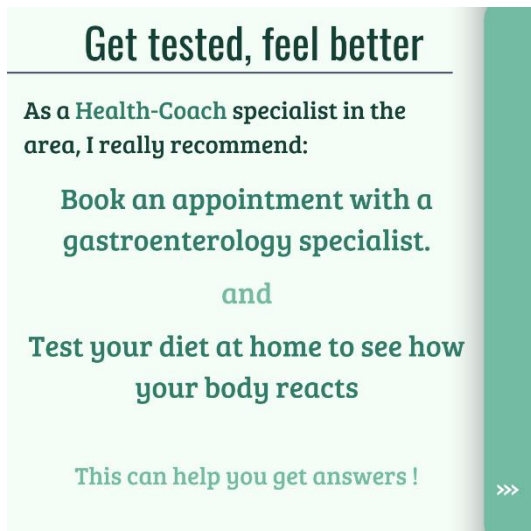
It has been increasing!  
Check this

**What about you?**

If this sounds familiar, think about booking an gastroenterology consultation to get checked.

**You may be gluten intolerant**

That's how I got diagnosed even before I became an health-coach



***Start of Block: Informational doctor***

**Q5.1** Imagine that you are scrolling through your Instagram feed, and you came across a post of Lucas Vale.

Lucas is a **gastroenterologist, a doctor specialized in problems in the digestive system,** especially the Celiac Disease and Gluten Intolerance.

All of his studies were based on this area, and he have helped more than 500 people that suffer from Celiac Disease and Gluten Intolerance.

So, to spread awareness about it and to connect with people, Dr. Lucas presents lot of information on his Instagram account.

Now you will see a post that Dr. Lucas made on Instagram.

Please read carefully.

# Dr. Lucas Vale

## The Celiac Disease

Understanding the impact of Gluten Intolerance



### The symptoms

After eating cakes, pasta or bread people experience:

- Diarrhea
- Fatigue
- Bloating

THIS MAY CAUSE DISCOMFORT

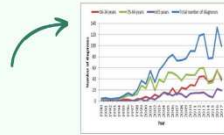


### The information

The symptoms are so banalized, that 1 to 2% of the mundial population has the celiac disease and don't even know it!

The Celiac Disease is an autoimmune disease while the Gluten Intolerance only causes a digestive discomfort.

This disease has been increasing!  
Check this graph



### Notice these symptoms

If these symptoms are present, book an gastroenterology consultation to check



It may be Gluten Intolerance

This is how many people receive diagnosis



### Get proper testing

As a Dr. specialist in the area, I know that is recommend to:

Schedule a gastroenterology appointment.

and

Try an at-home diet test to observe your body's reaction

Testing provides the answers you need



## Share with your friends

More people should know about celiac



@DRLUCASGASTRO  
MEDICAL DOCTOR

*Start of Block: Informational health coach*

**Q6.1** Imagine that you are scrolling through your Instagram feed, and you came across a post of Lucas Vale.

Lucas is a young influencer that **took a master's degree in marketing and have a health-coach certificate**, that allows him to prescribe health food suggestions, nutrition, and lifestyle. His work is to share on his social media accounts, especially on Instagram, lifestyle tips and to help people with some digestive system issues and he have helped more than 500 people that suffer from Celiac Disease and Gluten Intolerance.

So, he posts more about it in order to make people more aware of it.

Now you will see a post that Lucas made on Instagram.

Please read carefully.

@HC\_LUCASVALE

# Health Coach Lucas Vale

## The Celiac Disease

Understanding the  
impact of Gluten  
Intolerance

>>>

### The symptoms

After eating cakes, pasta or bread  
people experience:

- Diarrhea
- Fatigue
- Bloating

THIS MAY CAUSE DISCOMFORT

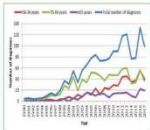
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### The information

The symptoms are so banalized, that  
1 to 2% of the mundial population has  
the celiac disease and don't even  
know it!

The Celiac Disease is an autoimmune  
disease while the Gluten Intolerance  
only causes a digestive discomfort.

This disease has been  
increasing!  
Check this graph



>>>

### Notice these symptoms

If these symptoms are present,  
book an gastroenterology  
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↓

It may be Gluten Intolerance

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>>>

## Get proper testing

As a Health-Coach in the area, I know that I recommend to:

**Schedule a gastroenterology appointment.**

and

**Try an at-home diet test to observe your body's reaction**

Testing provides the answers you need

>>>

## Share with your friends

More people should know about celiac



@HC\_LUCASVALE  
HEALTH-COACH

#### Appendix 4 - Descriptive analysis of nationality

	Frequency	Percentage	Cumulative Percentage
American	1	0,7%	0,7%
Austrian	1	0,7%	1,4%
Belgian	1	0,7%	2,1%
Brazilian	3	2,1%	4,3%
Columbian	1	0,7%	5,0%
German	1	0,7%	5,7%
Hungarian	1	0,7%	6,4%
Italian	1	0,7%	7,1%
Portuguese	130	92,9%	100%
<b>Total</b>	<b>140</b>	<b>100%</b>	

#### Appendix 5 – Descriptive analysis of social media platforms

	N	Percentage
Facebook	54	13,2%
Instagram	133	32,5%
LinkedIn	42	10,3%
Pinterest	29	7,1%
X (Twitter)	24	5,9%
TikTok	44	10,8%
YouTube	76	18,6%
Other	7	1,7%
<b>Total</b>	<b>409</b>	<b>100,0%</b>