Educational influence of knowledge of the masked presence of alcohol on *Instagram* on behavior change

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Abstract

The push strategy of anti-alcohol campaigns targeting young people, both in traditional media and on social media, has shown a limited capacity to contribute to the development of healthy behaviors. Even when young people know about the harmful effects of alcohol, they develop reactance attitudes, self-affirmation reactions, defensive responses, and neutralization of the persuasive attempts of institutional messages. It is necessary to seek new educational communication strategies that are effective in modifying behaviors favorable to alcohol consumption among young people. The aim of this research is to implement an educational method that favors this change toward healthy behaviors. On the basis of the *Instagram* campaign "Like my addiction," 124 young people (age: *M* = 23.6 years, *SD* = 2.8 years) participated for 3 weeks in three phases to test whether the presence of alcohol on *Instagram* had an impact on their beliefs, attitudes, and behaviors, as well as the effectiveness of the educational method tested. Half of the subjects followed a process of becoming aware of the presence of alcohol in this *Instagram* campaign and then participated in an interactive process of discussion according to the critical–dialogical educational method. The results show that this educational method is effective. Subjects in the control group who did not follow the method did not modify their behavior on *Instagram*. In contrast, the experimental group became aware of the masked presence of alcohol on *Instagram*. These subjects exhibit self-persuasion that makes them modify their activity favorably between the pre-test and post-test phase as they change their attitudes and behaviors toward alcohol. The results show that the critical–dialogical formative method can be favorably applied to implement campaigns and educational actions to fight alcohol addiction among young people.

Keywords

1. Introduction

Excessive alcohol consumption among young people has been repeatedly highlighted as a problem, with repercussions on physical, mental, and social health. Various scientific publications specializing in the study of alcoholism (e.g., *Alcoholism: Clinical and experimental research*; *Alcohol research: Current reviews*; *Alcohol and alcoholism*; *Journal of studies on alcohol and drugs*; *Drug and alcohol dependence*) have highlighted these pernicious effects. In general, these studies, mainly from biomedical and psychosocial perspectives, have focused their efforts on understanding the phenomenon's prevalence, investigating the psychophysical disorders derived from consumption, possible pharmacological and psychological treatments, or public health policies. However, hardly any studies have been carried out from a communica-

tive or educational perspective to seek to attenuate and modify behaviors in relation to some of the factors that contribute to and favor alcohol consumption. From the latter perspective, institutions have resorted to push strategies through anti-alcohol advertising campaigns for several decades in an attempt to counteract the effects of excessive alcohol consumption among young people. These show, for example, the pernicious effects of alcohol through negative emotional appeals (**Antonetti**; **Baines**; **Walker**, 2015; **Lee**, 2017; **Dunstone** *et al.*, 2017) and call for individual responsibility or present social models (**Alhabash** *et al.*, 2020). These campaigns, although embedded in traditional media (Image 1), have been ineffective in changing young people's behaviors, as they took place in a context of distrust toward advertising among young people, described in the literature as strategies to resist advertising (**Fransen** *et al.*, 2015), defensive responses (**Brown**; **Locker**, 2009; **Van't-Riet**; **Ruiter**, 2013), reactance attitudes (**Stanojlovic**, 2015), self-affirmation reactions (**Knight**; **Norman**, 2016), and explicit neutralization and counter-arguing by young people after becoming aware of such explicit persuasive attempts by health authorities (**Piacentini**; **Chatzidakis**; **Banister**, 2012, **Banister**; **Piacentini**; **Grimes**, 2019). Likewise, the transfer of this type of push advertising to the Internet and social media also produces rejection among young people (**De-Frutos-Torres**; **Pastor-Rodríguez**; **Martín-García**, 2021). Systematic reviews of the effectiveness of such anti-alcohol media campaigns yield heterogeneous results (**Yadav**; **Yobayashi**, 2015) and conclude that, even when they produce

Image 1. Example of an institutional anti-alcohol push campaign. Source: *Ministry of Health and Consumer Affairs* of Spain. *https://www.sanidad.gob.es/ca/campannas/campanas06/img/Cartel2.jpg*

cognitive and emotional effects, there is little evidence that they reduce alcohol consumption or promote beneficial behavioral changes (**Janssen** *et al.*, 2013; **Young** *et al.*, 2018; **Stanojlovic** *et al.*, 2020; **Henehan** *et al.*, 2020). In addition, alcohol is also present in a masked form on social media, e.g., in enjoyment and entertainment content that appeals to young people (**Barry** *et al.*, 2016; 2018a; 2018b; **Zerhouni**; **Bègue**; **O'Brien**, 2019). In this new context, it is necessary first to investigate the effect that this type of trivialized presence of alcohol on social media has on young people and second to seek alternative strategies other than the traditional alcoholism prevention campaigns to contribute to a reduction in unfavorable behaviors regarding alcohol tolerance. We must think about and implement new approaches and strategies to prevent alcoholism and promote healthy behaviors, adapted to new forms of institutional and socioeducational communication with young people.

The present study is framed from a communicational and educational perspective to answer the aforementioned general objectives. The theoretical foundation of the research is critical–dialogical theory (**Bermejo-Berros**, 2021). This theory uses a critical–dialogical method in the context of interactions with a sociocultural nature (**Wertsch**, 1993; **Rogoff**, 1990; 2003), in which the educator promotes media competence and addresses young people's critical attitudes according to the theories of such activity (**Leontiev**, 1978; **Engeström**, 2014). An approach based on successive steps (**Gal'perin**, 1969; **Talizina**, 1988; **Solovieva**; **Quintanar**, 2020) is also employed, using a formative process that starts from the periphery of knowledge (the *what*) then continues to the center (the *how*, *why*, and *what for*) (**Piaget**, 1985), resulting in a progressive improvement in the understanding and expression of the five structures that make up narrative thinking (**Bermejo-Berros**, 2005; 2021). The critical–dialogical method includes the interweaving of four dimensions:

a) the competences of the subject activated/fostered in the activity;

b) a concrete media product;

c) a critical–dialogical sociocultural activity promoted and channeled by the educator in successive steps, and (d) collective participation of the group members (**Bermejo-Berros**, 2021, p. 113).

The critical–dialogical theory has proved to be effective and useful in fostering the acquisition of critical attitudes and media competence. Therefore, this theory is helpful in addressing the two general objectives pursued in this research, and will not only allow for the comprehension of the effects induced by the masked presence of alcohol on social media, but will also be used as a training strategy to contribute to both a critical awareness of alcohol and a positive behavioral change in the use of these media that utilize scenes including alcohol.

To implement the critical–dialogical educational activity, we selected the campaign "Like my addiction," created by *Addict Aide* (2021), an organization that tries to raise awareness among young people regarding alcoholism. The *BETC* agency (Paris) created a social media campaign with the aim of showing how easy it is to miss the signs of addiction. In this campaign, Louise Delage, a 25-year-old Parisian, created a profile on *Instagram*. Her photos had simple captions, such as "Relaxing with friends" or "Dancing," or sometimes just an emoji. *Instagram* users viewing the profile were

unaware that it was a campaign. Just 1 month later, Louise had amassed 65,000 followers and her photos had received 50,000 likes. However, in the final post, it was revealed that the account was fake, with the purpose of showing "a person who people are familiar with on a daily basis but would never suspect of being an addict." In each of her 150 posts, Delage appeared with alcohol (Image 2). The aim of the campaign was to try to serve as a "reveal" to help people struggling with addiction, and the *BETC* campaign was successful in that it received a massive response on *Instagram*. However, it is not known whether the campaign influenced people to reduce alcohol consumption and/or addiction. Nevertheless, this campaign is interesting in that it suggests a pull strategy as an alternative to traditional, push campaigns (**Bermejo-Berros**, 2020).
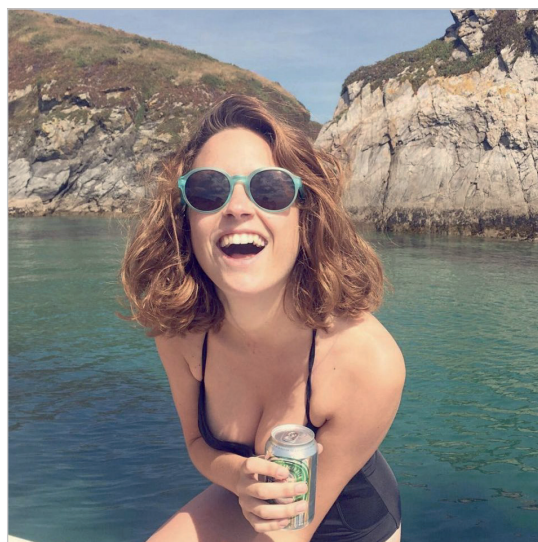
Within the framework of the two general objectives mentioned above, we focused on the content of this campaign to investigate various questions of interest through empirical research. The first specific objective is to investigate the effects of this campaign, namely to understand how the acceptance response on

Image 2. One of Louise Delage's photos on her *Instagram* account

Instagram can be explained, and more importantly, the subsequent psychological influence of the campaign. The photos show the young instagrammer in the foreground in scenarios of enjoyment and reverie, with alcohol present in all of them, and even being consumed in some of them. Although it is not known whether the presence of alcohol in this campaign goes unnoticed or, on the contrary, produces pernicious effects, it is possible that alcohol is associated with the enjoyment of a situation. There is a masking effect of alcohol in the scene surrounding the young Louise, who is the central focus of attention. The question is whether the presence of alcohol is only a secondary element in the scene or whether it is fused with the hedonistic enjoyment that the setting represents. These questions are integrated in our first RQ and hypothesis:

RQ1. What influence does Delage's profile have on young instagrammers in terms of their perception of the photos, their attitudes and intention to engage in response actions on Instagram, and their processing of the presence of alcohol on this *Instagram* profile?

H1. The presence of alcohol in Louise Delage's campaign photos is not perceived or does not invoke rejection. This is manifested in:

H1a. Subjects do not perceive the presence of alcohol in the photos.

H1b. When subjects perceive the presence of alcohol in the photos, they do not counter-argue against that presence bur rather focus on describing the pleasurable themes suggested by the photos.

H1c. Attitudes toward the photos are favorable, and there is no rejection behavior toward their use on *Instagram*.

While H1 inquires about the subject's response to Delage's profile, a second issue that arises is in regard to the subject's beliefs when informed of the explicit presence of alcohol in the profile pictures and whether those beliefs influence their behavior. Specifically, we consider RQ2 and H2:

RQ2. What are the subjects' opinions and beliefs about the final influence of alcohol in campaigns such as Delage's on their own perceptions or behaviors? How do these beliefs influence behavior towards alcohol?

H2. Beliefs about the role of alcohol presence in the *Instagram* campaign influence the subject's behavior on *Instagram*.

Finally, as mentioned above, it is necessary to test methods that allow progress to be made in the search for effective ways of combating alcohol addiction. It is no longer a matter of using coercive methods that induce fear or appealed to responsibility, as was done in the past with unsuccessful results, but of seeking pull strategies that lead young people to voluntarily modify their behaviors in relation to alcohol in the communication environments in which they live and are active (**Bermejo-Berros**, 2022). Research in genetic epistemology has shown that awareness of a behavior or habit can have the effect of reconstruction and positive modification of that behavior (**Piaget**, 1985; 2015). According to genetic epistemology, one way for the subject to achieve an awareness that leads them to modify their actions is to present them with a contradiction (**Piaget**, 1980, 2006). Taking this theoretical framework as a reference, which is integrated into the critical–dialogical theory presented above, a second specific objective that implements a methodology with two dimensions is proposed herein. The first dimension investigates how the subject is emotionally impacted by knowing the campaign's four characteristics: (1) verifying the presence of alcohol in all the photos, (2) discovering that Louise Delage is an alcoholic, (3) noticing that the *Instagram* account was fake and that this young woman was an actress, and (4) learning that the account had been created by Addict Aide to raise awareness about the problem of alcohol use among young people. The second dimension, utilizing the critical–dialogical method, seeks information about the subsequent

group discussion, i.e., whether dialog about the characteristics of the campaign can influence the participants' behavior on *Instagram*, thus promoting alcoholism prevention behaviors. It is postulated that young people are

not aware of the campaign's four characteristics, so this awareness and discussion could present them with a contradiction and thereby improve their behavior. Specifically, the following research question and hypothesis are posed:

RQ3. Can awareness of and reflection on this particular fake account lead to a modification of attitudes and behavior that would be beneficial for the prevention of alcoholism?

H3. Awareness and group discussion about the campaign's four features influence medium-term subject behavior change on *Instagram*, with the benefit of reducing behavior related to alcohol exposure.

2. Method

2.1. Participants and Procedure

Participants were selected in accordance with Louise Delage's age profile. University students of both sexes participated voluntarily in the research, carried out in the *LipsiMedia* laboratory of the *University of Valladolid*. Of the 146 initial participants, 22 were excluded, either because they did not complete one of the phases or because they did not send the data requested in phases 1 and 3. A total of 124 young people (71 women and 53 men) between 19 and 25 years old (M = 23.6 years, SD = 2.8 years) completed the three phases of the research. To participate in the research, it was necessary for the participant to have an active *Instagram* account, as well as to be unaware of the "Like my addiction" campaign, as verified in Phase 2 of the research (*Addict Aide*, 2021; **Hunt**, 2016). Data collection was carried out in accordance with the ethical principles of research, guaranteeing confidentiality and with informed consent from the participants. The activities, factors, and variables included in the research are summarized in Table 1 and specified in the three phases listed below:

Phase 1 (pre-test)

In the first session, subjects came to the laboratory and were informed about how they could obtain a backup copy of their *Instagram* activity data for 1 week. They were also informed of the data that they had to send to the researcher by email. To ensure privacy and security, they were informed that these data do not correspond to content but rather to numerical data, which would be kept private at all times. As specified in the following section, to complete the *Instagram behavioral index* (*Ibehi*), they had to send the total figures of their metrics included in the *Instagram* backup corresponding to the week prior to Phase 2 to the researcher.

Phase 2 (experimental)

A week later, a face-to-face session took place in the laboratory room. The first part of the session aimed to test H1. On a computer screen, the subject viewed a selection of 12 photos from Louise Delage's *Instagram* account (Annex). The subject then answered the first questionnaire on the computer, with questions appearing successively on the screen as the subject completed the questionnaire. The first factor that this questionnaire investigated was the degree to which the subjects perceived the presence of alcohol in the 12 photos, their reactions to the photos, and how they processed these reactions. The questions posed, using different scales, sought to collect information on four variables: (1) the description of the THEMES and content perceived in the photos, (2) the ATTITUDES toward the photos, (3) their RESPONSE BEHAVIORS on *Instagram*, and (4) the perception of the PRESENCE of alcohol.

Then, in the second part of the session, the participant completed a second questionnaire aimed at testing H2. Previously, the subjects were randomly divided into two groups: INF (informed) and UNINF (uninformed). The difference between them is that the INF experimental group was provided with all the information about the objectives of the "Like my addiction" campaign. They were made aware of the campaign's four characteristics, and in addition, a group discussion following the critical–dialogical method was carried out regarding what that information meant to them, the meaning of likes on *Instagram*, and opinions about the campaign and its possible effects. In contrast, the UNINF control group was limited to viewing and commenting on *Instagram* images for an equivalent period. The second questionnaire investigated two other factors. The first was emotional impact (variable IMPACT), which corresponded, in this research, to the attitudinal reaction experienced by INF participants after being told that the supposedly true profile of Delage was fake. They became aware of the four characteristics of the anti-alcohol campaign behind the misleading profile. The evaluation of the reaction to each of these characteristics is measured using the questionnaire's four IMPACT scales included in Annex, whose items inquire about the emotional reaction to being informed regarding each of the campaign's four characteristics. These characteristics, along with some examples, are described in Sect. 3.3 (Influence of becoming aware of alcoholism).

The third factor included four scales whose items analyzed two types of beliefs.

- The first belief type (variable CULTIVATION) concerns beliefs regarding the supposed influence on one's attitudes, values, and behaviors as a consequence of interacting with social networks, as was the case with the followers of Louise Delage's profile. Thus, this first belief type inquires about participants' representations concerning the campaign's

ability to cultivate first-level beliefs, particularly its influence on the trivialization of the consumption of alcohol. The notion of cultivation is understood in the sense put forward in the current Cultivation Theory (**Morgan**; **Shanahan**; **Signorielli**, 2015) and its exploration in terms of *Instagram* (**Stein**; **Krause**; **Ohler**, 2021).

- The second belief type (variable KNOWLEDGE) concerns beliefs regarding the supposed influence of this type of alcoholism awareness campaign on young people's behavior. As illustrated by the "Like my addiction" campaign, the aim was for the young person to become aware of the profile's falsehood and, consequently, of the false interaction with the person on *Instagram*. In short, this third factor analyzed whether knowing the four characteristics of this campaign against alcohol could influence beliefs about its effectiveness in changing behaviors on *Instagram*.

All the items of all the scales and variables included in the questionnaires (Annex) can be consulted on: *https://uvadoc.uva.es/handle/10324/52682*

Likewise, an online version of the questionnaire completion process can be consulted on: *https://www.encuestafacil.com/respweb/cuestionarios.aspx?EID=2724126*

Finally, in the third and final part of the session, there was a group discussion for the INF group (according to the critical–dialogical method) regarding the information received about the campaign during the second part of the session. Meanwhile, for a period of time equivalent to the INF group's group discussion (40 minutes), the UNINF group viewed *Instagram* photos and their respective comments, and had a group conversation about photography in general. During these activities, the subjects in the UNINF control group were not informed of the characteristics of the Delage campaign. To end the session, participants were simply informed that they would be contacted by mail one week later.

Phase 3 (post-test)

One week after Phase 2, the researcher asked subjects, just as they did in Phase 1, to download *Instagram* activity data from the week following Phase 2 and email it to the researcher, in order to test H3. The comparison of their behavior metrics on *Instagram* before and after Phase 2 showed whether the participant maintained the same activity on *Instagram*, or if there was an increase or decrease. The participant was informed of this comparison's results and asked to evaluate and comment on it to better understand their activity at the end of the experiment.

Table 1. Research phases, activities, factors, and variables

Phase	Groups	Activities	Factors	Variables
Phase 1 (pre-test)	INF (informed) and UNINF (uninformed)	*Instagram* activity metrics week 1	*Instagram* Behavioral Index (week 1)	Activity data from *Instagram* during week 1
Phase 2 (session in laboratory)	INF and UNINF	* Exposure to 12 photos from Louise Delage's *Instagram* account * Questionnaire 1 (H1)	**Factor 1** (perception of and reaction to the presence of alcohol in photos)	1. Description of the THEMES and contents perceived in the photos 2. ATTITUDES towards the photos 3. RESPONSE BEHAVIORS on *Instagram* 4. Perception of the PRESENCE of alcohol
	INF	* Information on the objectives of the "Like my addiction" campaign * Questionnaire 2 (H2) * Critical–dialogical training session on campaign (H3)	**Factor 2** (emotional impact)	5. Four scales of emotional IMPACT when knowing campaign characteristics
			Factor 3 (beliefs)	6. CULTIVATION of first-level beliefs 7. KNOWLEDGE (influence on behavior)
	UNINF	* Viewing and commenting on *Instagram* photos * Questionnaire 2 (H2) * *Instagram* photo discussion session (H3)		
Phase 3 (post-test)	INF and UNINF	*Instagram* activity metrics week 2	*Instagram* behavioral index (week 2)	Activity data from *Instagram* during week 3

2.2. Dependent variables

The two questionnaires used in Phase 2 collected information on the first two factors (perception of and reaction to the presence of alcohol in photos, beliefs, and impact) whose seven variables were mentioned above (THEME, ATTITUDES, BEHAVIOR, PRESENCE, IMPACT, CULTIVATION, and KNOWLEDGE). With respect to the third factor (CULTIVATION and AWARENESS variables), to understand the subsequent influence that the awareness of the "Like my addiction" campaign had during the research, the *Ibehi* was created. This index measures the *Instagram* activity resulting from participation in this experiment, being obtained as follows: Data included from the three weekly *Instagram* backups from the three datasets were utilized. The numerical data of the five folders provided by the *Instagram* backup Profile [photos or videos publi-

shed on the profile]; Direct [images, multimedia files, and audios sent or received]; Stories; Photos; and Videos). In addition, the number of three types of JSON files was also considered: comments (participant's comments on *Instagram*), likes (photos and videos that the participant "liked"), and messages (sent and received via *Instagram* direct messaging). One point was attributed to each of the activities performed in any of these eight variables. To calculate the *Ibehi* for Phase 1 (pre-test), the total number of points from the eight variables during the week analyzed was summed. To calculate the *Ibehi* for Phase 3 (post-test), the same procedure was followed, taking the average by type of the two post-test weeks. Next, the percentage difference between the *Ibehi* for the pre-test and post-test phases was calculated. This gave a percentage increase or decrease in *Instagram* activity between Phase 1 (pre-test) and Phase 3 (post-test). These typified data are referred to as the *Instagram behavioral index* (*Ibehi*).

> The trivialization of alcohol in social media influences the pro-alcohol behavior of young people

3. Results

3.1. Influence of alcohol on campaign reception

The first observation pertains to the description of the photos (THEMES), with 74.2% of the subjects explicitly mentioning the presence of alcohol. A significant fraction of the responses suggest that the participants related the photos with desirable positive perceptions, such as hedonism [(enjoyment, pleasure, and fun; 52.9%), tranquility (23.7%), and idyllic life (9.6%)] and the suggestibility of the influencers (7.1%). Only 6.7% of the responses alluded to the association between alcohol and addiction.

Secondly, the questionnaire includes several specific questions regarding the perception of alcohol in the context favorably described by the subjects. When asked whether there was anything striking in the photos, half of the subjects said no (56.5%) while the other half alluded to the presence of alcohol, but without negative connotations (43.5%). A total of 79.2% said that there was alcohol in the photos, although only 29.2% said that there was alcohol in all the photos, as was the case (in one or two photos 12.5%, in three or four 16.7%, in almost all 37.5%). Therefore, these results indicate that there is an association between alcohol and enjoyment, as in traditional advertising. The subjects perceived the presence of alcohol, but this neither worried them nor constituted a disturbance of the context represented in the photo, so it can be considered to be an indirect indicator of the normalization of alcohol in the lives of young people.

Finally, the next result regarding the variable ATTITUDES (AT) clearly showed that the photos were perceived as relating to enjoyment: 59.2% of the subjects liked the photos quite a lot or very much (five-point scale: $M = 4.59$, $SD = 0.89$), whereas only 7.4% did not like them at all or very little (Annex: AT.3). Regarding the possible response actions on *Instagram* (AT.2–5), 48.1% of the subjects would give a like to all or almost all of the photos, while 66.6% would give a like to half or more of them. Only 11.1% would not give a like to any of the photos (AT.4). Among the reasons that the subjects expressed for giving a like to the photos were the justification for esthetics (74.1%) and because they inspired something positive, such as peace or freedom (7.4%). A total of 14.8% of the subjects stated that they would not give a like to the photos because they were not interested in the content, either because they did not know the person or because they did not share similar values. Only 3.7% of the subjects justified not giving a like to the photos because they considered some of the photos to encourage drinking (AT.5). Most of the subjects would not comment on the photos (74.2%), 9.7% would comment on some of them, while only 3.2% would comment on half (AT.6). As a justification for these answers, a significant part of the subjects affirmed that they do not usually post comments on *Instagram* (59.3%) or that they do not post comments on the profiles of people they do not know or are not interested in (29.6% + 3.7%). The small percentage of subjects who would post comments said they would do so if the photos were striking (3.5%) or depending on the moment (3.4%) (AT.7). In line with these findings, the majority of the subjects would not share these photos on *Instagram* (63%), or would share only some of them (33.3%), whereas only 4.1% would share almost all of the photos (AT.8). The response categories chosen to justify not sharing photos highlight that either that they do not usually share photos of other people (34.3%), that they share them with friends because they attract their attention (25.9%), or because they never share photos (19.2%). A total of 15.4% of the subjects would not share these photos because they consider them to be of low quality and interest, while only 3.8% would not share them because of the appearance of alcohol (AT.9). Finally, in line with the previous results, a large number of the subjects would keep none (63%) or only some of the photos (22.2%). Only 7.4% would keep half of them, while another 7.5% would keep almost all of them (AT.10). Participants stated that they would not keep these photos because it is not content they personally relate to (40.7%). Another 14.8% do not usually keep photos, and 11.1% do not usually keep photos of other people. Regarding the reasons for keeping photos, 22.2% would keep them as an example of inspiration, while 11.3% would keep them for esthetic reasons (AT.11).

Thus, these photos were largely well liked. Regarding the response actions, the presence of alcohol did not appear as a rejection criterion for not liking, commenting on, sharing, or keeping the photos. The criteria for acceptance or rejection that led to some of these actions were based on two main arguments. One has to do with personal closeness, i.e., the subject does not usually comment, share, or keep photos of other people. This is, therefore, an interpersonal communication relationship. The other argument relies on an esthetic criterion for both the acceptance and rejection of a photo.

In conclusion, the analysis of the themes and attitudes leads to the confirmation of H1. The presence of alcohol went unnoticed by the subjects in regard to their perceptions, attitudes, and action decision-making. The main criterion in the

interaction with Delage's profile was based on the universe to which it refers (hedonistic, relaxation) and on esthetics. Alcohol appeared as just another element of the scenery. It did not attract attention and was not shocking for most of the subjects. Therefore, we can affirm that the presence of alcohol in this campaign is introduced in a context of normalization, and the integration of alcohol into these scenarios encourages its consumption. This result allows us to understand the success that this campaign had on *Instagram*, accumulating several tens of thousands of likes in a very short time.

3.2. Beliefs about the campaign's influence

The findings described in the previous section illustrate that the subjects perceived a desirable universe where alcohol had a nonconfrontational presence in the photos. The first part of the second questionnaire is now analyzed, in which the subjects were asked for a set of opinions exploring their beliefs regarding the subsequent persuasive influence of social network interaction in campaigns such as this. We thereby explore the subjects' opinions on the supposed effects of cultivation (variable CULTIVATION, CUL).

In the first question, the subjects were asked whether they believed that seeing the lives of some people on social networks, such as the profile of Louise Delage, influences people and their attitudes, values, beliefs, or behaviors (CUL1). The overwhelming majority of the subjects believed that it does indeed have quite a lot (72.7%) or a great deal of influence (27.3%). It is noteworthy that no subject believed that it has no influence at all, perhaps a little, or some. The subjects refer to three reasons to justify their responses: the idea that there is an influence by imitation and conditioning, e.g., influencers affect opinions and behaviors (72.7%) (CUL1B); the influence occurs because the photos show idyllic worlds that attract us, thus showing a projected desire (22.7%); and finally, that influence occurs because some people have inadequacies and insecurities and look to influencers as a mirror in which to look at themselves (4.5%).

In the second question, the subjects were asked whether they believed that the presence of alcohol in *Instagram* photos, such as Louise Delage's, could influence people by trivializing the consumption of alcohol. A total of 40.9% said that it has quite a lot of influence, 13.6% said a lot, while 18.2% said somewhat. Regarding those who considered it to have little influence, 13.6% believed that it does not influence at all while 13.6% believed perhaps a little. Therefore, most of the subjects believed that the presence of alcohol could contribute to the trivialization of its consumption (CUL2). Subjects gave six types of arguments to justify their responses, of which three have to do with the trivialization of alcohol, including normalization by associating alcohol and youth (36.4%), association of alcohol with a glamorous life and enjoyment (22.7%), and because instagrammers are models that some follow (9.1%). For 18.2%, there was influence, but little. Two reasons were given for the belief that there is no influence. In one case it was stated that alcohol is not seen in all the photos (4.5%), which is incorrect because alcohol was present in all the photos seen by the subjects. However, these data underline the aforementioned idea that alcohol appears in these photos as a secondary element of the photo's composition. The second reason given for the lack of influence is that seeing a photo of alcohol does not necessarily translate into drinking behavior (9.1%) (CUL2B). In short, a majority of the subjects (86.4%) believed that the presence of alcohol influences the trivialization of its consumption.

> Anti-alcohol push campaigns have not favored the development of healthy behaviors in young people

Finally, after reminding subjects of the rapid success that this account had in terms of likes on *Instagram*, they were asked whether they believed that the followers of Delage's account who gave likes were aware of what they were liking. A total of 63.6% of subjects believed they were not aware, while 36.4% were unsure. No subject affirmed that they were aware (CUL3). The subjects gave the following explanations to justify their responses. Among those who thought they were not aware, 36.4% believed that people only look at the esthetics of the photo or at something on the surface of the image (clothes, landscapes, and fun), 27.3% were not aware because they were unaware of the real profile that was hidden behind Louise Delage, 22.7% were not aware because they do it automatically without thinking, and 13.6% of the subjects stated that they did not know a reason that answered this question (CUL3B). Lastly, in a fourth question linked to the previous one, the subject was asked whether, in their case when using *Instagram*, they had ever reflected on what it meant for them to like a certain post (CUL4B). Two response categories emerged. In the first, 68.2% of the subjects stated that they do not reflect on it, and when they give a like, they do so because they like the content, it catches their attention, or it reflects their personality; while in the other response category, 31.8% of the subjects said that they do reflect on the like, but only to see if the content fits and corresponds to themselves.

In summary, as posited in H2, the subjects believed that these types of images on *Instagram* influence behavior but without being aware of the significance of interactive actions such as likes.

3.3. Influence of becoming aware of alcoholism

In Phase 2, the subjects were divided into two groups and underwent a different recognition process regarding the "Like my addiction" campaign. Unlike the control group (UNINF), the experimental group (INF) was informed of the campaign's four characteristics.

First, they were informed that alcohol was present in each of Louise Delage's 12 photos. The total percentage of responses was distributed as follows: 69.5% of the subjects stated that they were quite surprised, wondered about the presen-

ce of alcohol, and expressed a desire to know why; 13% were somewhat surprised that there was alcohol in all the photos; only 4.3% had not noticed the presence of alcohol, but did not think it was important; and finally, 8.7% said they did not care, as they were not affected by

> This research proposes an effective method to promote healthy behaviors on *Instagram*

the presence of alcohol because they were nonconsumers or skeptical about the possible effects of alcohol. Overall, this information provokes surprise and a desire to understand (IMP1).

Second, they were informed that Louise Delage, the instagrammer in the photos they saw, is an alcoholic. A total of 39.1% of the subjects were quite surprised and would like to know how she got to that state of dependence, 26.1% were a little surprised that she is an alcoholic because she looks like a cheerful girl who is just having fun, 13% said the young woman in the photos does not look like an alcoholic, so they would like to know if she tried to hide it in the photos, and 8.7% simply noted that the instagrammer does not look like an alcoholic in the photos (IMP2). On the whole, finding out that the instagrammer is an alcoholic was surprising to the subjects because her image does not seem to reveal this dependence. Third, subjects were then informed that the girl in the photos is not who she claims to be; She is not Louise Delage, but an actress, and the *Instagram* account was a fake. They were reminded that people interacted with this account thinking that this girl was who she claimed to be (she received many likes, had thousands of followers, etc.). In response to this information, 56.5% were quite surprised and would like a detailed explanation as to why this set-up was made, 13% were equally surprised and wondered why the fake account had been made, another 13% were a little surprised that there are people who do these things, and 17.4% were only somewhat surprised because they know that there is a lot of false information circulating on social networks (IMP3). Finally, subjects were informed that Louise Delage's *Instagram* account was created by an organization called *Addict Aide* with the aim of raising awareness about alcohol consumption and alcoholism. In response to this, 69.6% were quite surprised and wanted to know in detail how this campaign was conducted and the results obtained, 26.1% were surprised and wondered how effective the campaign was, and 4.3% were simply a little surprised that this campaign was carried out (IMP4).

The revelation of these four pieces of information about the campaign's true intentions had an impact on the subjects. It provoked surprise, as they could hardly imagine such a reality. It also stimulated a desire to learn more about the campaign to understand the reasons that led to its execution. Finally, the subjects were curious about the possible effectiveness of this type of campaign in general, and of this one in particular. This state of curiosity was conducive to opening up a group discussion regarding the questions raised by these queries and by the experiment as a whole in the final part of the session. Before beginning the group discussion, some questions regarding the influence of learning this information were raised to conclude the individual questionnaire. Specifically, they were asked whether they thought that knowing that Louise Delage is an alcoholic could influence people by causing them to interact differently with the *Instagram* account than they would if they did not know she was an alcoholic (CON1). We found that 81.9% of subjects believed it would have quite a bit or a lot of influence, while few subjects believed it would have very little (9.1%) or some influence (9.1%).

In explaining the reasons for such influence, the subjects cited three arguments: 42.1% thought that knowing that this instagrammer was an alcoholic would make them stop following her and giving likes; for 31.6%, the influence would occur because this information would generate debate against her, while 21.1% argued that alcoholism is a cause for rejection, so the instagrammer would be rejected; and finally, only 5.3% of subjects said that the influence would be slight because alcohol is normalized. Then, the subjects were asked whether they believed that awareness campaigns, such as this one featuring Louise Delage in which a false profile was shown and the problem of alcoholism raised, could be useful to change the behavior of people toward alcohol consumption. The subjects' responses were rated on a five-point scale, with approximately half of the subjects believing that these campaigns are quite (36.4%) or very useful (9.1%), 27.3% believing them to be somewhat useful, 13.6% very little useful, and another 13.6% not at all useful (CON2). In justifying these responses, three reasons were found in favor and one against. Forty-five percent believed that it was useful because in society alcohol is not seen as a problem; for 35% it was also useful but needed to be well explained because the photos alone were not enough, since they were seen as artistic; 5% thought it was useful in the long term; and the remaining 15% believed that it was not very useful because the photos were idealized (CON2B).

3.4. Influence of knowledge and discussion of alcoholism on *Instagram* on behavior change

The results regarding the influence of awareness of and reflection on alcoholism toward the modification of the subjects' behavior on *Instagram*, as posed in RQ3, are presented below.

First, the experimental treatment had significant effects (Figure 1). The UNINF group saw the images of the campaign but had not been subjected to the treatment of being informed of the intentions of the campaign and discussions about it. According to the independent-sample *t*-test, the UNINF group maintained the same behavior on *Instagram* between the pre-test and post-test phase (*t*(60)= 0.536, *p* < 0.594). In contrast, the INF group, which followed the experimental treatment, significantly modified their behavior by reducing their activity on *Instagram* (*t*(60)= 4.461, *p* < 0.000). This shows that being aware of the campaign had an influence on participants' behavior on *Instagram* (confirming H3). This awareness is reflected in the question we asked participants in the last session (Phase 3) about their behavior on *Instagram* after Phase 2. Some subjects in the INF group were unaware that they had reduced their *Instagram* activity or had no expla-

nation (12.4%). However, the majority (87.6%) claimed that their reduced activity on *Instagram* was precisely because the "Like my addiction" campaign had made them reflect on their behavior on *Instagram*. They were now more mindful of what they were doing, particularly with regard to alcohol.

Second, to refine these results and try to delimit more precisely those variables that may influence this outcome, a cluster analysis was carried out to determine whether groups of subjects within the INF group that had a differential response to the campaign's benefits could be identified. The cluster analysis revealed two factors, the first of, which we call "influence and impact," refers to the degree to which the subject believed that disseminating and posting about anti-alcohol campaigns on social media can impact and influence people's attitudes and values. The second factor, which we call "behavioral change," refers to the extent to which the subjects believe that posting information about alcoholics (like Louise Delage) on social networks may influence people to change their behavior in relation to alcoholism. As shown in Figure 2, the cluster analysis identified two groups of subjects: a skeptical group scoring low on both factors, and a permeable group scoring high on both factors and that also shows high impact by the campaign. While the first group does not believe in the campaign's persuasive influence and the ways to counteract the presence of alcohol, the permeable group does believe that this influence exists and can affect the subject.

The behavior on *Instagram* in the pre-test and post-test phases for these two groups of subjects was also analyzed. As shown in Figure 3, skeptical subjects hardly changed their behavior ($t(60)= 0.574$, $p < 0.568$), whereas permeable subjects were influenced by their awareness of the campaign ($t(60)= 2.690$, $p < 0.000$).

Therefore, the higher the degree of belief that the campaign can influence people's attitudes, the greater the change in behavior in the post-test phase. That is, when a (skeptical) subject believes that the campaign will not have a great influence, the campaign's ability to influence the subject is minimized. This is an indirect form of counter-arguing: by delegitimizing the campaign's persuasive capacity, they acquire an argument in favor of retaining their original behavior on *Instagram*.

Finally, a linear regression analysis was conducted to investigate those variables that could influence the change in behavior on *Instagram*. The regression analysis of the set of seven variables in this research revealed that three explain the significant reduction in activity on *Instagram* of the subjects in the INF experimental group. These three variables are KNOWLEDGE, CULTIVATION, and IMPACT, the results of which are presented in Table 2. The greater the subject's awareness that this campaign can influence people, the more reduced the subject's behavior on *Instagram* in the post-test phase. Likewise, the more a subject believes that beliefs, attitudes, values, and behaviors can be influenced by interacting on *Instagram* with
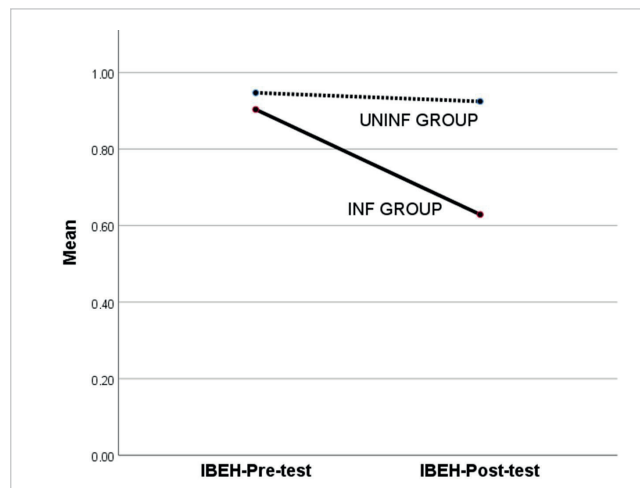

Figure 1. Effect of experimental treatment (UNINF – INF) on *Instagram* behavior change according to the *Ibehi*
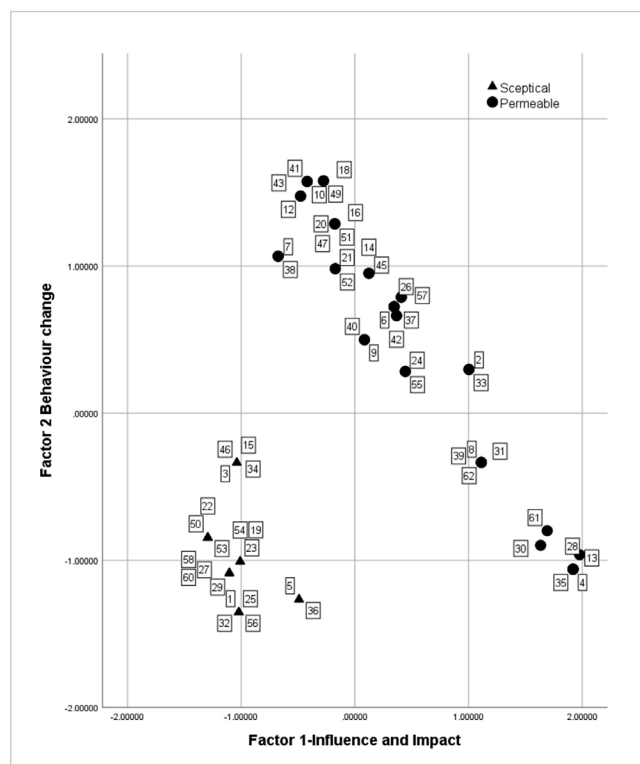

Figure 2. Homogeneous groups identified by the cluster analysis (skeptical and permeable) and two factors (influence and impact; behavior change)
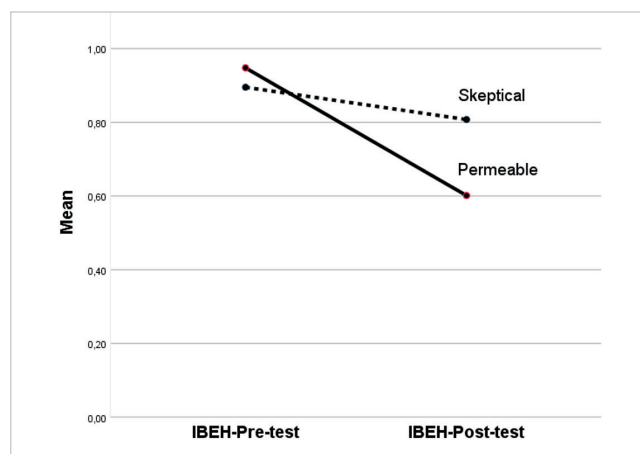

Figure 3. Change in behavior on *Instagram* between the pre-test and post-test phases for the skeptical and permeable groups

profiles such as that used in this campaign, the greater the reduction in the subject's activity on *Instagram* in the post-test phase. The final variable that has a significant influence, albeit less than the previous two, was IMPACT. The greater the emotional impact of knowing the four characteristics of the campaign, the greater the reduction in behavior on *Instagram*.

Table 2. Simple and multiple regression of the variables influencing behavioral change on *Instagram*

	R^2	F	B	SE B	β	t	p
Model 1	0.793	303.036 (1.60)					0.000
Intercept (constant)			40.576	2.695		15.056	0.000
Predictor (KNOWLEDGE)			−17.812	0.794	−0.945	−22.428	0.000
Model 2	0.836	230.237 (2.59)					0.000
Intercept (constant)			41.83	2.119		19.745	0.000
Predictor (KNOWLEDGE)			−11.525	1.183	−0.612	−9.739	0.000
Predictor (CULTIVATION)			−6.012	0.963	−0.392	−6.244	0.000
Model 3	0.854	201.833 (3.58)					0.000
Intercept (constant)			41.723	1.807		23.085	0.000
Predictor (KNOWLEDGE)			−8.359	1.206	−0.444	−6.934	0.000
Predictor (CULTIVATION)			−4.388	0.888	−0.286	−4.939	0.000
Predictor (IMPACT)			−4.888	1.017	−0.297	−4.804	0.000

4. Discussion and conclusions

Media psychology has two dimensions, one that is theoretical and seeks to understand the processes and effects of content, media, and technologies (**Van-Den-Bulk**, 2020), and another that is applied. This study implements a procedure to improve communication in the fields of health communication and media education from the perspective of media psychology. The results of this study are twofold:

1) This research provides insight as to why the "Like my addiction" campaign attracted a large number of followers on *Instagram*, and also highlights the effects of the presence of alcohol on *Instagram*, which is likely to influence young people. This is possible because of two factors. The first is that a masking phenomenon takes place; that is, the young person does not consciously focus their attention on the alcohol. This does not mean, however, that it is not perceived. The user was led to appreciate and interact with this profile on the basis of aspects such as attraction to hedonistic themes and relaxation and the esthetics of the photo (as seen in the subjects' responses), while alcohol is only present at a secondary level. These photos receive likes, and in accordance with the uses and gratifications theory (**Moyo**, 2014), the universe they represent is attractive and appealing to young people. Alcohol is incorporated and diluted in this represented universe, and this in turn contributes to a lack of critical thinking in the young person's thought process, increasing the efficacy of the message. This masking strategy is very different from that used in traditional advertising, as illustrated by the example in Image 1. In this case, alcohol was highlighted in the foreground and an explicit persuasive message was pushed to the receiver, often prescriptive, moralizing, or fear-inducing (e.g., don't do this; you will damage your health). In contrast, we see that, in the pull strategy of masking, there is no explicit attempt at persuasion. Alcohol is not in the foreground but rather subordinate and integrated into the fictional universe of a scene that is attractive to young people (Image 2).

The second factor concerns the process of normalization. The subject perceives the presence of alcohol, but tolerates it and is not bothered by its presence. Given that there is no rejection and that there is repeated tolerance in all the photos, the cultivation of representations linking alcohol to these scenarios of enjoyment is favored (as seen in the 12 photos of Louise Delage in Annex). This contact with media content increases cultivation effects and influences the user within the framework of these pull strategies. In addition, as the analysis of the CULTIVATION variable showed, there is a "third-person effect" (**Antonopoulos** *et al.*, 2015) that makes participants believe that the presence of alcohol will influence others but not them.

In short, the masking and normalization factors are closely connected and explain why the presence of alcohol is effective in negatively influencing young people's values and attitudes toward alcohol on *Instagram*. However, there is room for optimism, as shown by the results of the second part of this study.

2) Young people believe that this type of campaign can influence behavior but this is not enough. This research has shown that the campaign alone is not enough to induce behavioral change (as is the case for the UNINF group). It is also necessary to explicitly disclose the campaign's motives in a dialectical and interactive context in which the young person is actively involved. For a positive behavioral change to occur, it is necessary to become aware of and discuss the campaign's features and intentions (as seen with the INF group). Young people should be involved directly in the process, but in terms of rai-

sing awareness supported by a pull strategy instead of the direct persuasion attempt seen in traditional anti-alcohol push campaigns. The pull strategy encourages young people's curiosity, as seen in their desire to have questions about the campaign answered (Is Louise Delage an alco-

> Young people who follow the tested method become aware of the presence of alcohol on *Instagram*

holic? Why? Etc.). The method started from the point of information collection, i.e., raising individual awareness, toward a change in behavior on *Instagram* to become more favorable to the prevention of alcoholism. This followed the process suggested by the Piagetian genetic epistemology theory (**Piaget**, 1985), which starts from the periphery of knowledge, and advances in a student–teacher dialectic process toward the center of knowledge, ultimately leading to a modification of behavior. This dialogical method, which also draws on activity theory (**Leontiev**, 1981; **Engeström**, 2014, **Bermejo-Berros**, 2021), is also aided by the fact that it is effective in changing behavior among groups identified as "permeable" and sensitive to such an awareness-raising process. Perhaps, exposure to a longer awareness-raising process would also be effective among "skeptical" people. This hypothesis could be developed in future research with new campaigns using such social media pull strategies. Likewise, the change in behavior experienced by the INF group can also be explained through the lens of self-persuasion employed by the strategy (**Loman** *et al*., 2018). While traditional push campaigns used a strategy of direct persuasion (which often generates resistance and rejection among young people), in this study, a pull strategy was employed (providing a noncoercive or prescriptive context of interaction with young people). The young person in the INF group becomes successively more interested in a story that responds to the questions posed (the second part of Phase 2), arouses their curiosity, and facilitates a progressive process of self-persuasion.

In conclusion, from an educational and communicational point of view, the results of this study suggest that an effective way for an anti-alcohol campaign to connect with young people and induce self-persuasion can be direct participation through knowledge-sharing in a dialogical–critical context. Regarding the field of media psychology, this study illustrates the usefulness of investigating not only media effects on beliefs, attitudes, and behaviors but also of connecting them with practical applications that are beneficial for both the individual and society.

5. Annex

Photographs of the campaign and the items of all the scales and variables included in the questionnaires, available at: *https://uvadoc.uva.es/handle/10324/52682*

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