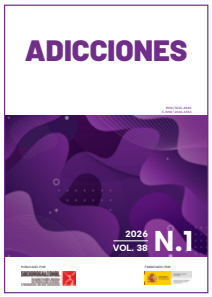
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ORIGINAL

Receptivity to persuasive narratives in juvenile offenders who use cannabis: Influence of motivational variables and engagement

Receptividad a narrativas persuasivas en menores con infracciones que consumen cannabis: Influencia de variables motivacionales y engagement

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Abstract

Persuasive narratives have been shown to be effective in influencing health behaviors. However, their impact on at-risk populations, such as justice-involved juveniles who use cannabis, has received limited attention. This study analyzes the response of 93 juveniles serving court-ordered sentences in detention centers to persuasive video-based narratives. These narratives were developed in accordance with the Health Action Process Approach (HAPA) and were gender-adapted. Additionally, variables influencing receptivity to the persuasive message, assessed in terms of favorability, were examined. Prior to exposure to the narrative, motivational variables such as risk perception, outcome expectancies (both positive and negative) of cannabis non-use, and self-efficacy for action were measured. Following the viewing, generated thoughts (cognitive responses) and engagement with the narrative, focusing on identification with the protagonist and narrative transportation, were assessed. The results revealed that the thoughts generated focused on the message content and personal experiences, with favorable thoughts predominating. No significant sex differences were observed, although the analyses did not allow conclusions to be drawn on equivalence between groups. Furthermore, narrative transportation acted as a significant mediator between risk perception and message favorability. This study provides empirical evidence on the effect of persuasive narratives in this population, indicating that their design, based on health behavior change theories, enhances receptivity. The findings support their integration into prevention programs within the context of juvenile justice.
Keywords: persuasion, audiovisual narrative, motivation, engagement, juvenile offenders, cannabis use, prevention

Resumen

Las narrativas persuasivas han demostrado ser efectivas para influir en los comportamientos de salud. Sin embargo, su impacto en poblaciones en riesgo, como menores en conflicto con la ley que consumen cannabis, ha sido poco explorado. Este estudio analiza la respuesta de 93 menores que cumplen medidas judiciales en centros de internamiento ante narrativas persuasivas en formato video. Estas narrativas se elaboraron conforme al modelo del Proceso de Acción en Salud (*Health Action Process Approach*, HAPA) y adaptadas por género. Asimismo, se investigaron las variables que influyen en la receptividad al mensaje persuasivo, evaluada en términos de favorabilidad. Antes de la exposición a la narrativa, se midieron variables motivacionales como percepción del riesgo, expectativas (positivas y negativas) de resultados del no consumo de cannabis y autoeficacia para la acción. Tras la visualización, se analizaron los pensamientos generados (respuestas cognitivas) y el *engagement* narrativo, a través de la identificación con el/la protagonista y el transporte narrativo. Los resultados revelaron que los pensamientos se centraron en contenido del mensaje y en experiencias personales, predominando aquellos de carácter de favorable. No se observaron diferencias significativas por sexo, si bien los análisis no permiten concluir equivalencia entre grupos. Además, el transporte narrativo actuó como mediador significativo entre la percepción del riesgo y la favorabilidad. Este estudio aporta evidencia empírica sobre el efecto de las narrativas persuasivas en esta población, demostrando que su diseño, basado en teorías de cambio de conducta de salud, favorece la receptividad. Los hallazgos respaldan su integración en programas de prevención en el contexto de la justicia juvenil.
Palabras clave: persuasión, narrativa audiovisual, motivación, engagement, menores con infracciones, consumo de cannabis, prevención

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Within the field of health communication, the use of narrative messages to promote healthy behaviours and reduce risk has become established as an effective strategy (de Graaf et al., 2016; Hinyard & Kreuter, 2007; Igartua et al., 2021; Miller-Day & Hecht, 2013; Perrier & Martin-Ginis, 2018; Petraglia, 2009). Various studies indicate that these narratives have the capacity to influence beliefs, attitudes, intentions, and behaviours (Braddock & Dillard, 2016; de Graaf et al., 2016; Perrier & Martin-Ginis, 2018), making them a promising tool in addiction prevention (Herrera-Sánchez et al., 2019; Miller-Day & Hecht, 2013).

However, the application of these strategies in at-risk youth populations, such as minors who have committed offences (hereafter MO), has not been explored. Adolescents in the juvenile justice system show high rates of psychiatric comorbidity, trauma exposure, and substance use (Chassin et al., 2016; Feldstein & Ginsburg, 2006). Within this group, cannabis stands out as one of the most commonly used illegal substances, characterised by earlier initiation and more problematic patterns of use compared with minors without a history of problems with the law (Tolou-Shams et al., 2021a). These factors not only increase their vulnerability but may also reduce the effectiveness of interventions targeted at this population (Kemp et al., 2023). In this regard, it is essential to examine how this population responds to persuasive messages in a context where psychoactive substance use is highly prevalent.

This study aims to contribute to the understanding of persuasive communication in the prevention of cannabis use, specifically targeting MO as an at-risk population. To this end, the effects of a narrative audiovisual intervention are designed and examined, based on a theoretical model that integrates the processes associated with narrative persuasion within the framework of narrative engagement and the motivational variables that drive behaviour change.

Narrative persuasion, resistance, and engagement

Narrative persuasion is a form of communication that conveys messages through structured stories, aiming to influence audiences and generate changes in attitudes and behaviours. Unlike more direct approaches, such as expository discourse that presents data and logical arguments, persuasive content is embedded within a story in which characters are portrayed with clear intentions to achieve goals (Igartua et al., 2021) and engage in events within a dynamic setting shaped by conflict, transformation, and resolution (Braddock & Dillard, 2016). These events may be presented non-chronologically; however, the underlying structure follows patterns of cause and effect or action and reaction, linking situations and characters into a coherent narrative (de Graaf et al., 2016). These elements give narratives their distinctiveness and facilitate the audience's ability to infer more complex relationships between events (Bilandzic & Busselle, 2013).

The immediate impact of a persuasive message is related to information processing, that is, the ability to critically analyse the implicit persuasive content. This process of scrutiny or detailed analysis of the message is known as elaboration (Petty & Cacioppo, 1986). Bilandzic and Busselle (2013) conceptualise elaboration, within the narrative context, in a broader way, as reflection on the topic without necessarily evaluating argument quality. From this perspective, elaboration encompasses both the persuasive message content and the plot and characters. In this study, two key processes linked to message elaboration are addressed: resistance to persuasion and narrative engagement.

Resistance to persuasion is the phenomenon whereby individuals question or refute the messages they receive, thereby opposing attitude change (Bilandzic & Busselle, 2013). Attitudes refer to the favourable or unfavourable evaluation a person holds toward an object, person, or idea, which in turn influences behaviour. This resistance can take various forms. Petty et al. (2004) describe it across four dimensions: (1) as an outcome, that is, the absence of attitude change following persuasion, which may involve no change or change in a direction opposite to the persuasive content; (2) as motivation, implying the desire to avoid modifying one's attitude, which may or may not lead to a resistant outcome; (3) as a process, referring to the specific cognitive and behavioural mechanisms used to resist the message, including counterarguing; and (4) as a quality, whereby resistance is not an action in itself but an inherent characteristic of individuals' prior attitudes that makes them difficult to modify, for example, the more certain a person is about their attitude, the more resistant they are to change.

This study adopts the perspective of Ratcliff and Sun (2020), which places resistance within the cognitive domain. According to these authors, resistance is a motivated response triggered by the perception of an attempt at influence, manifested with the aim of disregarding the persuasive intention and/or content. From this perspective, it is considered an immediate process that occurs during message processing and may precede or influence subsequent changes in attitude or behaviour.

Accordingly, a critical component is cognitive resistance, which is expressed through the generation of counterarguments, that is, thoughts that oppose the persuasive position of the received message, thereby reducing the audience's willingness to accept the arguments presented. In this study, cognitive resistance is assessed using the polarity index derived from the thought-listing technique (Igartua, 1998). This indicator makes it possible to quantify the orientation of cognitive responses to the

persuasive message, reflecting greater resistance when unfavourable thoughts predominate, or greater receptivity or openness when favourable thoughts prevail.

Within research on narrative persuasion, processes have been identified that help reduce this questioning of the message and enhance its receptivity. Among these, identification with the story's protagonist and narrative transportation stand out (Green & Brock, 2000; Moyer-Gusé, 2008; Moyer-Gusé & Nabi, 2010; Perrier & Martin-Ginis, 2018; Slater & Rouner, 2002). Both processes form part of the broader concept of narrative engagement, understood as audience involvement with both the plot and its characters, and encompassing perceived similarity, empathy, and immersion in the story (Kim et al., 2012).

Identification with a c haracter refers to perceived similarity (cognitive) and empathic responses (emotional) toward a character in the narrative, typically the story's protagonist. It indicates that the viewer adopts the character's feelings, perspectives, and goals (Cohen, 2001). When this occurs, the character's attitudes and beliefs are more likely to be adopted, which may increase receptivity to the persuasive message.

On the other hand, narrative transportation refers to deep immersion in the plot, involving a temporary detachment from the real world and a stronger focus on the story (Green & Brock, 2000). This experience engages the audience cognitively, affectively, and visually, which may produce a temporary disconnection from one's own beliefs and prior knowledge. This process can affect how the persuasive narrative is processed and responded to. By fostering greater immersion, critical processing of the message is reduced, thereby decreasing resistance (Green & Brock, 2000; Moyer-Gusé & Nabi, 2010; Slater & Rouner, 2002).

The role of familiarity and gender in narrative persuasion

Adolescent audiences, like other groups exposed to persuasive strategies, process messages in accordance with their values, beliefs, norms, and attitudes. Meta-analytic evidence has shown that persuasive narratives can produce significant changes (Braddock & Dillard, 2016), particularly when the audience perceives the content as relevant to their context. In this regard, familiarity with the content and characters may enhance effectiveness (de Graaf et al., 2016). When narrative content is perceived as close and recognisable, adolescent audiences are more likely to view the actions and decisions taken by the protagonist as applicable to their own lives.

Familiarity can be assessed by considering the similarity between the character and the audience, whether in terms of demographic or psychological characteristics (Igartua et al., 2021) or prior experiences related to the plot (Bilandzic & Busselle, 2013). Greater gender congruence between protagonist and audience has been proposed to facilitate identification and absorption. Likewise, the alignment of prior experiences strengthens the persuasive effect. However, the scientific evidence is inconclusive, highlighting the need for further research in this field (de Graaf et al., 2016).

Meta-analytic studies have found that the relationship between narrative engagement and resistance tends to be stronger in samples with a higher proportion of women (Ratcliff & Sun, 2020), which may suggest that certain narrative content aligns more closely with this population. However, this difference may be attenuated when there is gender similarity between the narrative protagonist and the audience (de Graaf et al., 2016; Igartua et al., 2021). In this study, narratives were designed so that the protagonist's gender matched that of the MO population, ensuring that the narrative content and context realistically reflected their experiences, language, and social environment. This strategy aims to maximise receptivity and reduce potential gender-related differences and is proposed as an exploratory hypothesis in a population for which no prior studies exist.

The role of motivational factors in narrative persuasion

A key component in high-risk groups is motivation, as it may promote or interfere with the cessation of health-compromising behaviours. Theories grounded in sociocognitive models identify risk perception (the subjective evaluation of the potential harm associated with specific behaviours), outcome expectancies (positive or negative contingencies between behaviour and its consequences), and self-efficacy (confidence in performing an action) as antecedent variables of change (Bandura, 2001; Schwarzer, 2008). Recent evidence indicates that these three factors are consistently associated with the intention to modify health-related behaviours. Higher risk perception has been linked to a lower likelihood of engaging in unhealthy behaviours, whereas positive expectancies toward such behaviours tend to increase their likelihood of adoption. Self-efficacy, in turn, has been shown to be one of the most robust predictors of change intention, as confirmed by the meta-analysis by Zhang et al. (2019), which reported consistent effects across different contexts and health behaviours.

In this study, we examine whether these motivational factors, present prior to exposure to the narrative, may influence the audience's willingness to accept or reject persuasive messages, since, as noted by Moyer-Gusé (2008), audiences do not approach narrative messages in a neutral manner but rather bring prior values, norms, and attitudes that shape their motivation to adopt healthy behaviours. It is therefore likely that MO who, before exposure to a persuasive message, report higher risk perception, more

positive expectations toward non-use and greater self-efficacy, as well as fewer negative expectations, will show more favourable cognitive responses to the narrative message.

Given the central role of these motivational factors in readiness for change, it is essential that narratives integrate them to enhance their effectiveness. For this reason, when narrative persuasion is used to promote healthy behaviours, it is recommended that story characters display a transition from an undesired behaviour to a positive one, obtaining benefits during the process (Bilandzic & Busselle, 2013; de Graaf et al., 2016; Moyer-Gusé, 2008). In line with behaviour change theories, this implies that the narrative incorporates risk perceptions, outcome expectancies, and self-efficacy as narrative drivers that support the character's progression.

It can be understood that if the audience shares this readiness for change, they are more likely to identify with the character and perceive the story as relevant, thereby increasing receptivity to the desired behaviour. In this way, motivational factors would be related to narrative engagement, expressed through identification with the character and narrative transportation. Consequently, a greater predisposition to change combined with a higher level of immersion will tend to favour cognitive responses consistent with the persuasive message.

In turn, this narrative engagement may function as an indirect and mediating factor in persuasive outcomes. The literature suggests that the effectiveness of persuasive communication develops through these mediating processes (Igartua & Frutos, 2017; Slater & Rouner, 2002). In the case of MO, exposure to narratives that present conflicts similar to their own and depict a credible change process—where protagonists overcome barriers and obtain benefits—may facilitate message acceptance and increase readiness to modify unhealthy behaviours. Thus, the influence of motivational factors on cognitive responses is likely to be channelled through narrative engagement.

To examine the effect of narrative persuasion among MO who have already initiated cannabis use, the following objectives were proposed:

1. To examine how MO respond to a persuasive message based on behaviour change narratives designed specifically for this population, identifying their cognitive responses.
2. To analyse the role of gender, motivational variables (risk perception, positive and negative outcome expectancies, and self-efficacy for action), and narrative engagement (identification with the character and narrative transportation) in receptivity to the persuasive message, measured through the polarity index or favourability of thoughts toward the message.

For this second objective, the following hypotheses were formulated based on the reviewed literature:

H1. No significant differences will be observed between males and females in the polarity index after viewing a narrative featuring protagonists of the same gender.

H2. MO who, prior to exposure to the message, report higher levels of risk perception, more positive expectancies regarding cannabis non-use, and greater self-efficacy for action, as well as lower levels of negative expectancies regarding non-use, will be significantly associated with a polarity index more favourable to the message.

H3. Motivational variables (risk perception, positive and negative expectancies, and self-efficacy for action) and narrative engagement variables (identification with the protagonist and narrative transportation) will jointly explain a significant proportion of the variance in the polarity index.

H4. Narrative engagement variables (identification and transportation) will mediate the effect of motivational variables on the polarity index.

Methods

Participants

This study forms part of a broader project aimed at analysing the effectiveness of a preventive intervention targeting problematic cannabis use among minor offenders. MO serving court-ordered sentences in Juvenile Offender Detention Centres (known in Spain as CIMI) participated between September 2021 and June 2022.

A purposive sampling strategy was used with the following inclusion criteria: (a) being aged between 14 and 18 years; (b) having used cannabis prior to admission to the centre; (c) having completed the observation phase in accordance with Decree 98/2015 regulating the organisation and functioning of CIMI (Junta de Andalucía, 2015); (d) being under closed, semi-open, or open regimes, with precautionary measures or a final judicial sentence; and (e) voluntarily agreeing to participate in the study. Exclusion criteria were: (a) a diagnosed psychopathological disorder; (b) receiving treatment for substance misuse; and (c) displaying disruptive behaviours that prevented participation.

Although the literature indicates that MO populations present high rates of psychiatric comorbidity and substance misuse, this study opted to work with a sample lacking a clinical diagnosis or active treatment for substance misuse. This decision is based on the need to obtain clear results not confounded by clinical symptomatology or ongoing therapeutic interventions. At the same time, detention as a legal measure constitutes a key moment for addressing substance-related problems in adolescents, as well as for prevention among those who have initiated harmful patterns of use. This may help prevent escalation of

use or support the maintenance of abstinence once the deprivation of liberty has ended. While both strategies are essential, treatment tends to predominate in these contexts, relegating preventive interventions to a secondary role (Funk et al., 2020; Sales et al., 2018). In this regard, the exclusion of these variables allows the findings to be interpreted within a framework of selective or indicated prevention targeting at-risk groups, rather than a strictly therapeutic approach.

A total of 103 MO were recruited from 5 of the 13 CIMI located in Andalusia (Spain). Overall, these centres provide 751 places. The final sample was reduced to 93; the main reasons for non-participation among initially recruited minors were disruptive behaviour or unwillingness to participate at the time of the study. The sample had a mean age of 16.34 years (SD = 0.96), with 80% males. The mean age of initiation of use was 12.35 years (SD = 1.86), with a mean duration of use of 3.98 years (SD = 2.03). The average duration of the detention measure was 14.26 months (SD = 6.83), while the mean length of stay in the centre was 6.16 months (SD = 5.54).

Procedure

Approval prior to the start of the study was obtained from the Research Ethics Committee of the Virgen Macarena and Virgen del Rocío University Hospitals of the Andalusian Health Service. The research was conducted in accordance with the ethical and legal regulations in force in Spain for research involving minors within the context of juvenile justice. In this regard, the rights established in Organic Law 5/2000 of 12 January, regulating the criminal responsibility of minors (Jefatura del Estado, 2000), and Decree 98/2015 (Junta de Andalucía, 2015) were guaranteed. Particular attention was paid to the protection of personal data, confidentiality of information, and the right to receive clear, accurate, and understandable information about participation. In addition, voluntary participation was ensured, guaranteeing that minors could refuse without any consequences for their legal status or detention regime.

Accordingly, the directors of each CIMI were contacted to present the study and agree on sample recruitment in line with the established criteria. Technical staff were responsible for recruitment and for obtaining informed consent from the minors and their legal guardians.

Participants initially completed a questionnaire assessing motivational variables. One week later, they viewed the audiovisual material described in the following section and subsequently completed a second questionnaire in which measures related to narrative engagement and cognitive responses to the message were obtained. Separate groups of males and females were established, each consisting of 4 to 6 participants, who viewed the narrative corresponding to their gender. To ensure confidentiality, the study was conducted in a designated space within the centre, with only the research team present.

Audiovisual material

An audiovisual tool was developed consisting of two fictional stories, featuring Laura and Manu, both minors in CIMI. Each story is divided into two sections. In the first, Laura or Manu recount their experience in the centre in the first person, with an emphasis on cannabis use. They describe their family and emotional context, the onset of use, and the problems that led to their detention. They also narrate their experience in the centre, sharing their transition from initial resistance to admission to the CIMI to assuming responsibility for having reached that situation. They reflect on their relationship with CIMI professionals, their desire for change, and how they gradually develop a sense of control over cannabis use once the custodial measure ends. In the second section, Laura's psychologist and Manu's psychologist provide their perspective on each MO's personal and family difficulties, describing the observed progression toward achieving control over cannabis use.

To develop this audiovisual material, the following steps were undertaken:

1. **Preliminary analysis of the context of cannabis use.** Statistical and epidemiological data on cannabis use from the Spanish Observatory on Drugs and Addictions were consulted, together with sociodemographic data on MO from the National Statistics Institute. This information was complemented with interviews with professionals from CIMI and other addiction treatment centres (49 in total).
2. **Analysis of life stories related to cannabis use among MO.** Twenty-two interviews were conducted with MO in the final phase of their detention measure in order to extract relevant information about their trajectories of use and experiences of change within the centre. This analysis enabled the creation of a chronology of key events before admission, during their stay, and in the period prior to the completion of the custodial measure.
3. **Story construction using the storytelling technique.** Two narratives centred on the characters Laura and Manu were created, integrating both the information gathered in the previous phase and the processes of change toward healthy behaviours. Their development drew on theoretical foundations of behaviour change (Perrier & Martin-Ginis, 2018; Petraglia, 2009), enabling the characters to be portrayed as models of transition toward healthier lifestyles (Bilandzic & Busselle, 2013; Moyer-Gusé, 2008). In particular, the narratives were designed following the principles of the Health Action Process

Approach (HAPA) model (Schwarzer, 2008), which clearly and distinctively specifies the mechanisms required to initiate and maintain behavioural change.

To enhance familiarity, efforts were made to create stories closely aligned with the reality of the target population (de Graaf et al., 2016; Igartua et al., 2021; Miller-Day & Hecht, 2013), including events, situations, and characters presented from a gender perspective. For example, Laura was serving a judicial measure for domestic violence, whereas Manu was serving one for theft. The testimonies were recorded in a setting that simulated a CIMI in order to achieve a higher degree of realism. An audiovisual technical team adapted the narrative language to the visual format, ensuring its suitability for the target population.

4. **Validation of the narratives.** CIMI professionals reviewed a first draft of the narrative script featuring Laura and Manu's stories and provided suggestions regarding both content and form to better adapt it to the MO profile and clearly incorporate the health behaviour change processes of the HAPA model. A second version was produced with improvements that included simplifying the language to enhance comprehension without losing realism, clarifying episodes related to family conflict and use, and more explicitly incorporating negative effects following use and during adaptation to the centre. Institutional routines were also added to increase the credibility of the narrative.

This second version was validated using an ad hoc questionnaire comprising several sections. The first assessed whether the script clearly reflected the model's behaviour change processes, such as risk perception, outcome expectancies, self-efficacy, and action planning. For example, one item asked whether "the story describes the negative consequences of smoking cannabis," corresponding to outcome expectancies. Subsequent sections focused on the credibility and coherence of the story, with items adapted from previous work on narrative realism (Cho et al., 2014; Hall, 2003). Questions were included for professionals to evaluate the story's ability to capture attention, be understandable, and generate empathic responses. Finally, two open-ended questions were added for an overall appraisal (what they did not like and how it could be improved).

The questionnaire was completed by 13 professionals from different CIMI, allowing for further adjustments. Overall, the script featuring Laura's story received 85.7% positive evaluations, while Manu's reached 80.8%. In their qualitative observations, professionals suggested refining certain aspects, such as removing behaviours that were not representative and increasing the prominence of support from professionals and significant figures. Taken together, this process strengthened content validity by integrating the core behaviour change components of the HAPA model and improving the narrative quality of the persuasive stories. The scripts of Laura and Manu's audiovisual narratives, indicating their correspondence with the theoretical components of the HAPA model and the links for viewing them, are available in the supplementary material of this article.

Variables and measurement instruments

Cognitive responses to the message

Thought listing. To identify cognitive responses to the message, the thought-listing technique was used (Igartua, 1998). This technique has proven suitable not only for analysing the content of thoughts but also for examining associated variables, such as perceived confidence in those thoughts (Horcajo et al., 2022). After exposure to the message, each participant was asked to write down the thoughts that arose while watching the video. Ten boxes were provided for recording one thought in each, and participants were required to write at least three. Two members of the research team independently coded the responses across two dimensions. First, by the origin of the thought, with three categories: (1) Message, thoughts referring directly to the message content and the story shown in the video (e.g., "the boy must have had a hard time"); (2) Experience, when referring to personal experiences (e.g., "I smoke when I have problems"); and (3) Irrelevant, when unrelated to the task (e.g., "I didn't think anything"). Second, by response polarity, classified as: (1) Favourable, thoughts supporting the content and source of the persuasive message or reinforcing it based on personal experience (e.g., "I liked when he started changing his goals and improving his relationship with his mother, not wanting to worry her"); (2) Unfavourable, thoughts opposing the content and source of the persuasive message or using personal experience to contradict it (e.g., "as soon as I'm released I'm going to smoke a joint"); (3) Reflective, when they evoke a more considered analysis of the issue without indicating a clear position for or against (e.g., "it reminded me of when I was on the street"); and (4) Irrelevant, when unrelated to the task (e.g., "it's a good centre"). In total, 449 thoughts were coded. Inter-rater agreement was 94.8% for coding thought origin and 93.9% for coding polarity. Discrepancies were resolved through discussion to reach consensus.

Polarity index. Based on the coding of response polarity obtained through the thought-listing procedure, the polarity index was calculated by subtracting the percentage of unfavourable thoughts from the percentage of favourable thoughts and dividing the result by 100. This procedure produces values ranging from −1 to +1, where −1 indicates that all thoughts are unfavourable to the message, +1 that all are favourable, and 0 that there is an equal proportion of favourable and unfavourable thoughts. Thus, the polarity

index indicates the extent to which favourable responses (greater receptivity) or unfavourable responses (greater resistance) toward the persuasive message predominate.

Motivational variables

Risk perception of cannabis use. Perceived vulnerability regarding cannabis use was measured with the question: How much risk to your health do you think you have if you use cannabis? Response options were: 1 (no risk), 2 (a small risk), 3 (moderate risk), 4 (great risk), in addition to the option "I don't know." This question was answered according to frequency of use (once or twice a month, once a week, once a day, or more than twice a day). The reliability of the scale was α = .86.

Outcome expectancies. Beliefs about the contingencies of cannabis non-use and its positive or negative consequences were assessed. To facilitate responses, an open-ended question was used so that participants could identify up to six consequences and rate their importance on a scale from 1 (not important) to 5 (very important). Responses were categorised into positive consequences (pleasant and favourable to non-use, such as "I have fewer problems") and negative consequences (unpleasant and unfavourable to non-use, such as "I can't sleep"). Two members of the research team participated in this categorisation to achieve inter-rater agreement, which reached 95.5%. Subsequently, two variables were generated: positive outcome expectancies regarding cannabis non-use and negative outcome expectancies regarding cannabis non-use. Both variables were calculated by considering the total number of positive or negative consequences weighted by the importance assigned.

Self-efficacy for action. Personal belief in the ability to carry out a specific action—here, abstaining from cannabis use after completion of the detention measure—was assessed with the question: "Are you sure that you will not use cannabis once the detention measure in the centre ends?" A response scale from 1 (not at all sure) to 4 (completely sure) was used.

Narrative engagement variables

Identification with the character. The five items selected by Tal-Or and Cohen (2010), based on Cohen (2001), were used. These items include statements concerning understanding of the character and events, experiencing similar feelings, the ability to take the character's perspective, and understanding their motivations. The statements were adapted to the type of study and the story's protagonist. A 7-point Likert scale was used (1 = strongly disagree, 7 = strongly agree). Reliability for this sample was α = .66.

Narrative transportation. The short version of the Transportation Scale by Appel et al. (2015) was used. It contains five items assessing the cognitive and emotional dimensions of narrative transportation. Items were adapted to the audiovisual format, as the original scale was designed for written narratives. A 7-point Likert scale was used (1 = strongly disagree, 7 = strongly agree). The reliability obtained was α = .81.

Data analysis

Before statistical analysis, missing values in the variables risk perception (5), positive expectancies (7), negative expectancies (8), and self-efficacy (4) were imputed using mean substitution. Data normality and homoscedasticity were assessed using the Kolmogorov–Smirnov and Levene tests, indicating that the data did not follow a normal distribution; therefore, non-parametric tests were employed.

To test H1, the Mann–Whitney U statistic was calculated using R (version 4.5.1), along with effect size using Cliff's δ and the corresponding confidence intervals. These values were interpreted following Romano et al. (2006), whereby an effect size of |0–0.147| is considered trivial, |0.147–0.33| small, |0.33–0.474| medium, and values greater than 0.474 large. For H2, correlation analyses were conducted using Spearman's rho coefficient. For H3, after confirming that model residuals met normality criteria, stepwise multiple linear regressions were applied, and effect size (f^2) was calculated using GPower 3.1. For H4, the PROCESS macro for SPSS was used with bootstrapping of 5,000 resamples with bias correction for mediation analysis (Model 4), which was accepted if the confidence interval (CI) was statistically significant, that is, if the 95% CI did not include zero (Hayes, 2022). The proportion mediated was calculated as the ratio between the indirect effect and the total effect ($ab/ab + c'$). The Sobel test (1982) was applied to confirm the mediation effect, calculating the ratio between the point estimate and its standard error. The mediation effect was considered statistically significant if the z value was greater than or less than ±1.96 for a two-tailed alpha of 0.05, or ±2.58 for a two-tailed alpha of 0.01.

Results

First, cognitive responses of MO to the persuasive narrative were identified. The analysis revealed that 52.03% of thoughts focused on the video content (message), whereas 46.90% evoked personal experiences. Regarding polarity, favourable thoughts predominated (60.5%) compared with unfavourable ones (19.45%), with 15.31% classified as reflective thoughts. See Table 1.

Table 2 presents the descriptive statistics of the variables used in the inferential analysis. Median values for the motivational variables indicate that, prior to viewing, MO showed a moderate perception of risk associated with cannabis use (9.00), as well as both positive (10.00) and negative (10.00) expectancies regarding cannabis non-use.

However, based on interquartile range values, responses for negative expectancies were somewhat more clustered than for positive expectancies. In addition, participants reported moderate confidence in their ability to remain abstinent after completing their detention measure (2.00).

Post-viewing measures indicated that scores for identification with the protagonist and narrative transportation were located in the upper range of their respective scales, with medians of 25.00 and 26.00, respectively. The interquartile range for both variables confirmed this tendency. Finally, the polarity index showed a positive median value (0.57), with a range from 0.07 to 0.83, suggesting a clearly favourable tendency toward the persuasive message.

To test H1, differences in the polarity index between males (n = 75) and females (n = 18) were examined. The Mann–Whitney U test showed no statistically significant differences between groups (U = 758; p = .42). Medians were similar (males: Mdn = .60, IQR = .21–.80; females: Mdn = .42, IQR = −.45–.88). The effect size estimated using Cliff's δ was small and non-significant (δ = 0.12, 95% CI [−0.22, 0.44]). As the confidence interval exceeded the predefined equivalence margins (±0.147), it was not possible to conclude either equivalence or non-inferiority between male and female groups in the polarity index (Table 3). Therefore, although the results appear consistent with the stated hypothesis, they do not allow a conclusive confirmation.

To assess H2, a bivariate correlation was conducted using Spearman's rho (Table 4). Results indicate that the polarity index was significantly and positively correlated with risk perception (r = .40, p < .001), positive outcome expectancies (r = .25, p < .05), and self-efficacy for action (r = .28, p < .01). In addition, a significant negative correlation was observed with negative outcome expectancies (r = −.26, p < .05). Therefore, it can be confirmed that the motivational variables of the HAPA model are related to the polarity index and, consequently, receptivity to the persuasive message increases when levels of risk perception, self-efficacy for action, and positive outcome expectancies are high, and negative outcome expectancies are low.

To test H3, after confirming that the residuals of the variables included in the analysis met normality criteria, a stepwise multiple linear regression was conducted in which

Table 1

Descriptive statistics of cognitive responses

Variables		N	%	Md [RIC]	Min	Max
Thoughts by Origin						
	Message	93	52.03	2 [1-4]	0	10
	Experience	93	46.90	2 [0-4]	0	10
	Irrelevant	93	1.07	0 [0-0]	0	1
Response polarity						
	Favourable	93	60.50	3 [2-4]	0	9
	Unfavourable	93	19.45	0 [0-1]	0	9
	Reflective	93	15.31	0 [0-1]	0	5
	Irrelevant	93	4.74	0 [0-0]	0	3

Note. Md= median; IQR = interquartile range (p25-p75); Min = minimum value; Max = maximum value.

Table 2

Descriptive statistics of study variables

Variables	N	Md [RIC]	Min	Max
Risk perception	93	9 [6-12]	2	16
Positive expectancies	93	10 [0-15]	0	30
Negative expectancies	93	10 [4-16.5]	0	30
Self-efficacy	93	2 [2-3]	1	4
Identification	93	25 [20-30]	10	35
Narrative transportation	93	26 [18.5-29.5]	5	35
Polarity index	93	.57 [.07-.83]	-1	1

Note. Md= median; IQR = interquartile range (p25-p75); Min = minimum value; Max = maximum value.

Table 3

Comparison of Polarity Index by Gender

	Males (*n*=75)	Females (*n*=18)			
	Mdn [RIC]	*Mdn* [RIC]	*U (W)*	*p*	*δ* Cliff [IC95%]
Polarity index	.60 [.21 - .80]	.42 [-.45 - .88]	758	.42	.12 [-.22 - .44]

Note. Mdn = median; IQR = interquartile range; U = Mann–Whitney (reported as W in R). Cliff's δ is interpreted as effect size: |0–0.147| = trivial, |0.147–0.33| = small, |0.33–0.474| = medium, >0.474 = large (Romano et al., 2006).

Table 4

Spearman correlations between motivational variables and the Polarity Index

Variables	**1**	**2**	**3**	**4**	**5**
1. Risk perception	—				
2. Positive expectancies	.42***	—			
3. Negative expectancies	-.31**	-.70***	—		
4. Self-efficacy	.32**	.33**	-.23*	—	
5. Polarity index	.40***	.25*	-.26*	.28**	—

* p <.05, ** p < .01, *** p < .001.

motivational and narrative engagement variables were included as explanatory variables of the polarity index. As shown in Table 5, in the first step only the narrative engagement variable narrative transportation showed a significant fit (R^2 = .25; R^2_{aj} = .24; SEE = .51; F (1, 91) = 29.96; p < .001). In the second step, the model added the motivational variable risk perception, resulting in a significant improvement (R^2 = .30; R^2_{aj} = .29; SEE = .50; F(2, 90) = 19.76; p < .001), as it generated an increase in non-redundant explained variance (ΔR^2 = .06; ΔF(1, 90) = 7.44; p = .008). In the final model (Table 6), narrative transportation was the strongest predictor (β = .40; B = 0.03, SE = 0.007; t = 4.29; p < .001; 95% CI [0.02, 0.05]), while risk perception contributed an additional positive effect (β = .26; B = 0.04, SE = 0.015; t = 2.73; p = .008; 95% CI [0.01, 0.07]). Diagnostic statistics suggested independence of errors (Durbin–Watson ≈ 1.95) and absence of multicollinearity (VIF ≈ 1.15). Overall, the final model shows a medium global effect size (f^2 ≈ .44) and supports that higher levels of narrative transportation and risk perception are associated with a higher polarity index, with narrative transportation as the main contributor and risk perception as a complementary predictor that significantly increases explanatory precision.

To explore H4, a mediation analysis was conducted using the PROCESS macro for SPSS. The results are consistent with partial mediation of narrative transportation in the association between risk perception and the polarity index. First, risk perception positively predicts narrative transportation (Path a), and narrative transportation positively predicts the polarity index while controlling for risk perception (Path b). The indirect effect differs from zero according to bootstrap estimates (ab = 0.023; 95% CI [.007, .044]; ab_{cs} = .147, 95% CI [.046, .265]), indicating that part of the effect of risk perception on the polarity index is transmitted through narrative transportation. However, the persistence of a significant direct effect (c′) suggests that the mediation is partial rather than complete. Approximately 36% of the total effect of the motivational variable risk perception on resistance to persuasion (polarity index) is mediated (ab/c ≈ .364), while the remainder remains direct (c′). In summary, greater risk perception is associated with higher narrative transportation, which in turn is associated with a higher polarity index, providing robust bootstrap evidence of partial mediation (Tables 7 and 8; Figure 1).

Discussion

This study provides relevant findings on how MO respond to narrative persuasion and which variables are associated with message acceptance. The analysis of cognitive responses, conducted using the thought-listing technique, showed that a slightly higher proportion of participants focused their attention on the content of the narrative material (message), and nearly half of the responses evoked personal experiences. This suggests that well-structured persuasive narratives can capture audience interest (de Graaf et al., 2016; Herrera-Sánchez et al., 2019; Miller-Day & Hecht, 2013; Thomas

Table 5

Summary of the stepwise multiple regression model for the effect of motivational and engagement variables on resistance to persuasion

Step	*R*	R^2	R^2_{aj}	SEE	F (*gl1,gl2*)	*p*	ΔR^2	*ΔF (gl1,gl2)*	*p(ΔF)*	f^2	Durbin-Watson
1: Transportation	.50	.25	.24	.51	29.96 (1.91)	<.001	.25	29.96 (1.91)	<.001	.33	-
2: +Risk perception	.55	.30	.29	.50	19.76 (2.90)	<.001	.06	7.44 (1.90)	.008	.44	1.95

Note. SEE = standard error of the estimate.

Table 6

Final model coefficients

Predictor	*B*	SE(B)	*β*	*t*	*p*	[IC95%] of *B*	*VIF*
(Constant)	-0.71	.186	-	*-3.83*	*<.001*	[-1.08, -0.34]	-
Transportation	0.03	.007	.40	4.29	*<.001*	[0.02, 0.05]	1.15
Risk perception	0.04	.015	.26	2.73	.008	[0.01, 0.07]	1.15

Note. SE(B) = standard error of B; VIF = variance inflation factor.

Table 7

Mediation of narrative transportation on the relationship between risk perception and resistance to persuasion. Path coefficients (PROCESS, Model 4)

						IC 95% *B*	
Path	***B***	**SE(*B*)**	***β***	***t***	***p***	**LL**	**UL**
a: RP-T	0.732	.197	.363	3.72	<.001	.341	1.122
b: T-PI (controlling RP)	0.032	.007	.404	4.29	<.001	.017	.046
c': RP-PI (controlling T)	0.041	.015	.257	2.73	.007	.011	.070
c: Total effect (RP-PI)	0.064	.015	.404	4.21	<.001	.034	.094
	z			***SE***	***p*¹**		
Sobel test	2.35			.01	.02		

Note. RP = risk perception; T = transportation; PI = polarity index; SE: standard error of the estimate; 95% CI: 95% confidence interval; LL: lower limit; UL: upper limit; p1: two-tailed probability.

Table 8

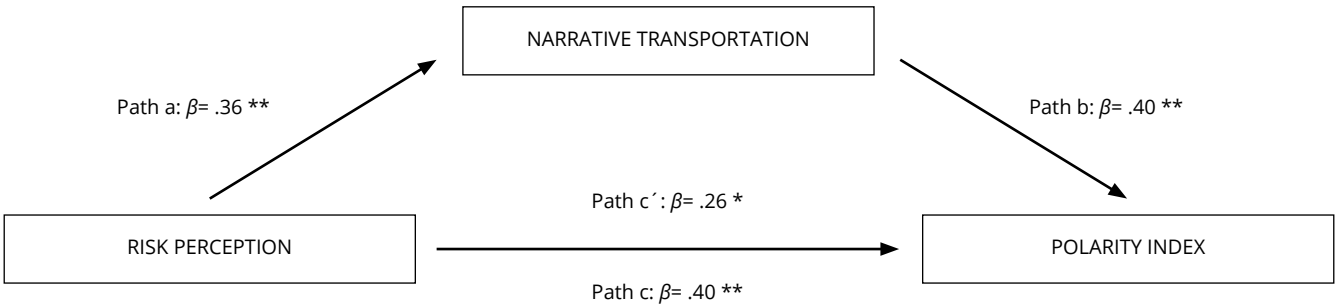
Indirect effect (Bootstrap = 5000; 95% CI percentile)

Effect	Estimate	BootSE	BootLLCI	BootULCI
ab (RP – T – PI)	0.023	.010	.007	.044
ab_{cs}	0.147	.057	.046	.265

Note. RP = risk perception; T = transportation; PI = polarity index; ab = unstandardized indirect effect; ab_{cs} = completely standardized indirect effect; 95% CI = 95% confidence interval; LLCI = Lower limit of the CI; ULCI = Upper limit of the CI; ab/c (mediation percentage) = .364 (36.4%).

Figure 1

Mediation model: Narrative transportation mediating the relationship between risk perception and the polarity index



Note. * p < .01; ** p < .001.

& Grigsby, 2024). In turn, the predominance of favourable over unfavourable thoughts can be interpreted as a positive reception of the persuasive message.

The presence of thoughts related to personal experiences is consistent with previous studies suggesting that memories evoked by a story may facilitate the validation of implicit messages (Hamby et al., 2017; Herrera-Sánchez et al., 2023). Reflective responses were also identified, indicating that reactions to a message are not limited to acceptance or rejection but may involve more elaborate critical processing (Herrera-Sánchez et al., 2023). A future line of research would be to examine how different forms of information processing, according to their origin and direction, influence the ways in which individuals respond to persuasive narratives. Additionally, the findings of this study could be complemented with more open discursive analyses that explore the nature of the discourse generated by the audience in greater depth.

Integrating a gender perspective is essential in this field. Previous research has documented differences between males and females in juvenile justice, both in legal characteristics and risk factors as well as in patterns and trajectories of substance use (Arteaga et al., 2021; Conrad et al., 2017). With this purpose, narrative material was developed to minimise gender effects through the creation of stories tailored to the reality of each group. Regarding H1, the results suggest a tendency toward similar responses between males and females, although without sufficient statistical strength to confirm this finding.

For this reason, these results should be interpreted with caution, as the study did not manipulate exposure to messages to compare groups and the sample included a higher proportion of males. The meta-analytic study by Ratcliff and Sun (2020) showed that the relationship between narrative engagement and resistance to persuasion was stronger in samples with a higher proportion of women, also indicating that effect size increased as the percentage of female participants rose. Therefore, the use of designs that allow for balanced samples in future research is recommended. Given that the juvenile offender population is predominantly male (Arteaga et al., 2021), it may also be appropriate to focus on analysing each group separately rather than conducting direct comparisons between males and females. This approach would allow for a better understanding of the particularities and specific factors influencing narrative persuasion and help avoid biases derived from the overrepresentation of one group. The ultimate goal is to expand research to, for example, examine how meanings of substance use are constructed according to gender and to develop sensitive interventions tailored to the specific needs of each group (Javdani & Allen, 2016; Tolou-Shams et al., 2021b).

The results of the bivariate correlation, showing significant associations between motivational variables and the polarity index, provided empirical support for H2. Specifically, MO who perceived greater risks associated with cannabis use and focused more on the benefits and less on the drawbacks of cannabis non-use tended to exhibit a more favourable cognitive response to the persuasive message. Likewise, those who reported higher self-efficacy tended to be more receptive to messages emphasising the capacity to refrain from use. These findings are consistent with those derived from sociocognitive models that highlight the role of motivational variables in the adoption of healthy behaviours (Schwarzer, 2008; Webb et al., 2010).

However, the stepwise multiple linear regression showed that only narrative transportation and risk perception were explanatory variables of the polarity index; therefore, H3 could only be partially confirmed. This result suggests that immersion in the story and perceiving cannabis use as a risk act as key factors in fostering a positive cognitive response to the persuasive message. The use of transition models in the narrative may explain why outcome expectancies and self-efficacy for action, initially associated with polarity, did

not emerge as significant predictors of message favourability. The character's progression within the story may have contributed to a process of natural alignment with MO experiences, facilitating receptivity without depending on individuals' prior readiness for change. Another possible explanation is that risk perceptions are beliefs that directly influence receptivity to messages. The influence of outcome expectancies and self-efficacy may be indirect, mediated by risk perceptions, which is also consistent with the HAPA model.

Likewise, identification with the character did not show a statistically significant effect on the polarity index. One possible explanation lies in the limitations of the measure used, as the identification scale presented reliability below .70. In addition, this study employed only a global score without analysing the effect of its components separately (e.g., perspective taking), which may have resulted in the loss of relevant information. There is agreement on addressing identification as a multidimensional construct, but there is no consensus on how these components are defined and measured (Huang & Fung, 2024). Future studies should consider the differentiated assessment of these components using scales better suited to the characteristics of this population. Finally, meta-analytic studies have indicated that similarity influences identification, with stronger effects when based on shared experiences (psychological similarity) rather than more objective characteristics such as age (Huang et al., 2024). In this study, the characters were designed to reflect the reality of the target population, which limits the possibility of determining precisely their impact on identification and, consequently, on narrative persuasion. Future research is recommended to explicitly manipulate psychological and objective similarity in order to examine more thoroughly their influence on resistance to persuasive messages in this specific population.

Regarding H4, the results showed that narrative transportation partially mediated the relationship between risk perception and the polarity index. This is consistent with previous analyses highlighting the role of narrative transportation in reducing resistance to persuasion (Bilandzic & Busselle, 2013; Green & Brock, 2000; Slater & Rouner, 2002; Thomas & Grigsby, 2024). However, the study by Cohen et al. (2015) identified a moderating rather than mediating role, suggesting that narrative transportation may operate differently depending on the context. In this study, risk perception may be interpreted as a motivational facilitator that intensifies receptivity to the persuasive message, while narrative transportation optimises its cognitive and emotional integration, thereby reducing resistance to persuasion.

In the present study, narrative engagement was addressed through identification with the protagonist and narrative transportation. Although identification did not emerge as a significant predictor, both variables were selected due to their strong theoretical grounding, evidence of their role in facilitating persuasion, and feasibility of measurement in the MO context. However, this construct has been defined in multiple ways, incorporating different cognitive and emotional components. Busselle and Bilandzic (2009) define narrative engagement as an experience that integrates four interrelated processes: narrative understanding, attentional focus (absence of distraction), emotional engagement (feeling for and with characters), and narrative presence (the sensation of entering the narrative world). Weiss (2022) even suggested that self-referencing (thinking about one's own life and experiences in relation to the story) could be considered part of the engagement process. From the Narrative Engagement Theory perspective, Miller-Day and Hecht (2013) conceptualise narrative engagement as the extent to which audiences become cognitively involved with a story and propose that it can be measured through audience interest in the narrative, perceived realism, and identification with characters. From a perspective more focused on the emotional dimension of engagement, Hamby and Jones (2022) argue that engagement depends not only on the intensity of emotions generated by the narrative but also on their nature (discrete emotions) and the cognitive appraisals that give rise to them. Although these variables were not assessed in the present study, their relevance is acknowledged. Future research in this context should expand the measurement of engagement to achieve a more comprehensive understanding of the mechanisms through which narratives reduce resistance.

It is important to consider that the results of this study are based on a specific sample, which limits their generalisability. Despite including participants from several centres, the absence of contextual or institutional data—such as the characteristics of intervention programmes at each centre—prevented assessment of potential nesting effects among participants. Therefore, future studies are encouraged to use mixed-effects models to estimate variability attributable to both individual factors and contextual variables. Another relevant limitation is that the study focuses on immediate cognitive responses to the persuasive message without measuring its effect on changes in attitudes or behaviours. Although the study provides evidence regarding the processes associated with this response, it is not sufficient to determine whether favourable reception translates into sustained change. In addition, the variables examined, such as identification with the character and narrative transportation, were not experimentally manipulated, which restricts the ability to establish direct causal relationships. Finally, the inclusion of ad hoc questions to assess risk perception and self-efficacy, as well as the use of a single item for the latter variable, may have affected the precision of the estimates. This methodological decision is justified by the lack of validated scales for this specific population and the need to minimise participants' cognitive burden given the judicial

context of the study. Future research could address these limitations through longitudinal designs that, using validated scales, allow evaluation of changes in receptivity and their relationship with changes in attitudes and behaviours. Experimental designs, in turn, would facilitate comparison of narrative persuasion with other communication strategies.

Despite these limitations, this study makes an original contribution to the field of persuasive communication by exploring how narrative persuasion may influence MO with a history of cannabis use, a group that might be expected to show greater resistance to influence attempts. The findings suggest that persuasive narrative is also effective with this audience profile, highlighting its potential for interventions targeting this population.

Furthermore, this work addresses a limitation identified by Perrier and Martin-Ginis (2018) in the development of persuasive materials by integrating components of a behaviour change theory into the narrative construction, ensuring a clear and structured progression in the behaviour change process that is readily understood by the audience. In addition, validation of the material by professionals guarantees fidelity to the underlying theoretical principles, strengthening its rigour and applicability in these intervention contexts.

This study is grounded in the psychoeducational principles of persuasive communication to improve the health of MO in CIMI. Beyond their sanctioning function, these centres implement educational and psychosocial intervention programmes. In general terms, these interventions include health education as a key component and, more specifically, incorporate prevention and treatment actions for addictions adapted to the characteristics of the minor population (Junta de Andalucía, 2023). The narrative material developed for this study could be integrated as a complement to preventive actions implemented in these centres. The study findings, showing a predominantly favourable reception, support its potential usefulness in strengthening selective and indicated prevention programmes for cannabis use in this context.

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Conflict of interest

All authors declare that they have no conflict of interest.

Data availability

The data used for this article are available at https://hdl.handle.net/11441/182046 or at https://doi.org/10.12795/11441/182046.

Supplementary material

https://hdl.handle.net/11441/182043 or https://doi.org/10.12795/11441/182043.

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