Cyber convivencia as a social scenario:
Ethics and emotions

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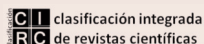Acording EC3 Reports, 2018 (UGR): H5 Index (2013-2017); 1st position in Education (out of 165; H5: 38); 1st position in Communication (out of 51; H5: 38).

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Comunicar, 67, XXIX (2021-2)

Cyber convivencia as a social scenario: Ethics and emotions

La ciberconvivencia como escenario social: Ética y emociones

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Cyber convivencia as a social scenario: Ethics and emotions

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Cyberostracism: Emotional and behavioral consequences in social media interactions

Ciberostracismo: Consecuencias emocionales y conductuales
en las interacciones en redes sociales

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ABSTRACT

This study focuses on the effect of cyberostracism on social networking sites. Based on the temporal need-threat model of ostracism, we examined a) reflexive reactions, specifically worsened mood and threats to the four fundamental needs (i.e., belongingness, self-esteem, meaningful existence, and control), and b) reflective reactions, in the form of prosocial, antisocial, and avoidance behavior. We also focused on the role of social anxiety. Using the experimental tool Ostracism Online, we conducted an online experiment to manipulate ostracism, measure self-reported reflexive reactions, and measure reflective reactions in a newly developed cooperative financial game. The participants were 196 young Czech adults (age 18-30; 62% women). T-tests showed worsened mood and higher threat connected to all four of the fundamental needs in the reflexive stage in ostracized participants. Regression models showed that social anxiety had a small effect on reflexive reactions, but it did not moderate the effect of ostracism. The type of threatened need and social anxiety did not predict a reflective reaction. The only significant predictor of antisocial response was experienced ostracism. Even a mild form of ostracism such as the lack of reactions by strangers to a shared post can lead to negative emotional and behavioral consequences.

RESUMEN

Este estudio se centra en el efecto del ostracismo cibernético en los sitios de redes sociales. Sobre la base de un modelo de necesidad temporal-amenaza del ostracismo, analizamos el efecto en reacciones reflexivas, específicamente el empeoramiento del ánimo y amenaza a cuatro necesidades fundamentales (sentido de pertenencia, autoestima, existencia con sentido y control), y la reacción reflexiva en forma de comportamiento prosocial, antisocial o evasivo. También nos concentramos en el papel que desempeña la ansiedad social. Mediante el uso de la herramienta experimental Ostracism Online (Ostracismo en línea), realizamos un experimento en línea en el que se manipuló el ostracismo, se midieron las reacciones reflexivas autoinformadas en un juego financiero cooperativo recientemente desarrollado. Los participantes fueron 196 adultos jóvenes checos (de 18 a 30 años; 62% mujeres). T-tests demostraron empeoramiento del ánimo y amenaza más alta en las cuatro necesidades fundamentales en la etapa reflexiva de los participantes ostracidos. Los modelos de regresión mostraron que la ansiedad social tenía poco efecto en las reacciones reflexivas, pero no moderaba el efecto del ostracismo. El tipo de necesidad amenazada y ansiedad social no predijo la reacción reflexiva; el único indicador significativo de la respuesta antisocial fue el ostracismo experimentado. Incluso una forma leve de ostracismo en forma de falta de reacciones por parte de extraños a la publicación compartida puede dar lugar a consecuencias emocionales y conductuales negativas.

KEYWORDS | PALABRAS CLAVE

Cyberostracism, social exclusion, Ostracism Online, social networking sites, social anxiety, emotions.
Ciberostracismo, exclusión social, Ostracism Online, redes sociales, ansiedad social, emociones.

1. Introduction

Ostracism is a form of social exclusion in which one is ignored by others and is usually not acquainted with the reasons for such treatment. It is an unpleasant social phenomenon that leads to negative emotional and behavioral consequences, such as a worsened mood, a threat to fundamental needs, and antisocial coping behaviors (Williams, 2009). Since a significant part of today's social interactions happen online (Ryan et al., 2017), people encounter ostracism on the internet, particularly on social networking sites (SNS) and in other online environments that are focused on users' direct interactions (e.g., online discussions, games; Williams et al., 2000). To date, a large portion of research attention has been given to more direct forms of aggression and complex experiences of victimization (Kowalski et al., 2014). However, research which would specifically target this type of negative experience is scarce.

In our study, we intend to enrich current knowledge by focusing on the experience of cyberostracism in young adults. Specifically, we follow the line of research which used the experimental method proposed by Wolf et al. (2015), Ostracism Online (Schneider et al., 2017; Tobin et al., 2018). Moreover, we guide our research by Williams' (2009) temporal need-threat model of ostracism, which predicts the emotional reactions to the experienced ostracism and the behavioral response. By applying the experimental design to simulate the lack of reactions of others on adult participants, we intend to provide more evidence about reactions to cyberostracism. Specifically, we examined the reflexive reactions, like changes in mood and threats to the four fundamental needs, and reflective reactions, like prosocial and antisocial behavior. The study also focused on the role of social anxiety to better understand individual differences in the reactions to ostracism.

1.1. Cyberostracism

On SNS, ostracism can take the form of ignoring someone in a chat or a comments section (Donate et al., 2017; Tobin et al., 2015). However, people can feel excluded even with milder signs of ostracism, such as by not getting sufficient feedback on a shared post (Schneider et al., 2017; Tobin et al., 2018; Wolf et al., 2015). This often occurs because of the lack of usage of paralinguistic digital affordances (PDA; Hayes et al., 2016); in other words, one-click tools (e.g., a "Like" on Facebook, a "♥" on Instagram) commonly carry the meaning of support or, at least, validation of being noticed (Wohn et al., 2016). It has been shown that PDA acquisition can lead to pleasant feelings of happiness, self-worth, increased self-esteem, and higher satisfaction of the need to belong (Burrow & Rainone, 2017; Reich et al., 2018). Conversely, the lack of a reaction can lead to sadness (Hayes et al., 2016) and, as prior experimental studies have shown, ostracism, even within a group of strangers (Schneider et al., 2017; Tobin et al., 2018; Wolf et al., 2015).

Past research on cyberostracism often used versions of the virtual ball-tossing game called Cyberball (Williams et al., 2000). In it, the ostracized participant plays the game with two or three other online players. After a few initial tosses, they do not receive the ball again. Unfortunately, this situation does not strongly correspond to the current experiences of cyberostracism, especially on social media. For our study, we adapt the method proposed by Wolf et al. (2015) Ostracism Online. Ostracism Online simulates the conditions of getting insufficient feedback for shared content and better aligns with the experiences of cyberostracism. We use this new experimental method to examine the feeling of ostracism in young adults that is invoked by the lack of PDA reactions.

1.2. Temporal need-threat model of ostracism

Specific reactions to experiences of ostracism are described and explained in a temporal need-threat model of ostracism (Williams, 2009). This model describes the effect of ostracism in three phases: reflexive, reflective, and resignation. The first two phases are described below, the third is not included in our study, because resignation is a reaction that is associated with feelings of alienation, worthlessness, helplessness, and depression after long-term ostracism, which is impossible to study with our experimental design.

1.2.1. Reflexive phase

The reflexive phase includes the immediate reactions to experienced ostracism, which manifest in a change in mood and a threat to the four fundamental needs: belonging, self-esteem, meaningful existence, and control. From an evolutionary perspective, ostracism and social exclusion might have had a large impact on an individual's chances for survival and reproduction. This probably led to the development of an innate adaptive mechanism to detect even mild signs of ostracism and allow a person to act accordingly (Williams & Wesselmann, 2011). The detection occurs quickly, and it is basically a reflex; it is associated with the experience of social pain that is neuroanatomically similar to the experience of physical pain (Eisenberger et al., 2003). The experience of social pain caused by ostracism manifests in the lower satisfaction of the four human needs: belonging, self-esteem, meaningful existence, and control. Williams (2009) explained that the need to belong is endangered because a person is denied being part of a group or a dual relationship. A lack of awareness of the reasons for such treatment leads to reflections on why they deserved that, which is hurtful for self-esteem (even more than dealing with a specific reason). Ostracism can also lead to an existential threat in the form of the threat to meaningful existence (likened to "social death") and since one does not encounter any reaction and thus cannot solve the situation, one also loses control. The social pain caused by the ostracism is also related to a decrease in positive affect and an increase in negative affect, which includes anxiety, sadness, and anger (Eisenberger et al., 2003; Williams, 2009).

These proposed effects of ostracism have already been examined in experimental studies. However, while Wolf et al. (2015) succeeded in verifying the negative impact on all four needs using the new Ostracism Online method, the subsequent replication by Schneider et al. (2017) failed to verify the effect on a control need. Thus, in our study, we will re-examine the effect of ostracism with the same design; moreover, we will also examine the presumed effect on the decrease in positive affect.

- H1a. Ostracized people will derive lower satisfaction from belonging, self-esteem, control, and meaningful existence than non-ostracized people.
- H1b. Ostracized people will be in a worse mood than non-ostracized people.

1.2.2. Social anxiety

The original theory states that the reflexive reaction should be resistant to the effects of situational and personality factors. However, based on prior knowledge about the role of social anxiety, we intend to re-examine the possible moderating effects of this personal characteristic. In general, socially anxious people are more afraid of evaluations from others, they quickly register even the slightest signs of rejection, and they tend to interpret unclear situations rather negatively (Miller, 2009). In line with social compensation hypotheses, socially anxious people may even be more vulnerable to a negative online experience because they may have fewer opportunities to compensate for the online experiences with another interaction (Valkenburg & Peter, 2007). Prior studies showed that social anxiety is linked to additional negative online experiences. For instance, McCord et al. (2014) found a strong link between social anxiety and anxiety during interactions on Facebook. Specifically, socially anxious people were worried that they would not receive feedback for a message or a request for friendship, they had greater fear of writing posts on their own or on someone else's wall, and they fretted about commenting on the posts of others. Regarding cyberostracism, Zadro et al. (2006) found that people with higher social anxiety take longer to recover from the experience of ostracism induced by the Cyberball task. Even though the study did not show a moderating effect in the immediate reactions, we take into consideration that Ostracism Online is more personal and socially interactive than the Cyberball task, and that it could, therefore, be more threatening for socially anxious people. Based on these assumptions, we will re-examine the hypothesis that socially anxious people perceive the experience of ostracism as more threatening.

- H2. Ostracized individuals with higher social anxiety will experience lower needs satisfaction.

1.2.3. Reflective reaction

In the reflective phase, people elaborate and evaluate the episode of ostracism and subsequently apply cognitive and behavioral strategies to proceed toward recovery. According to the need-fortification

hypothesis, people choose behaviors that will strengthen their most threatened needs (Williams, 2009). The model offers two possible responses to recover from the experience of ostracism: prosocial and antisocial. Reacting in a prosocial manner should increase the chances for re-inclusion, which then results in an increase in the satisfaction of belonging and self-esteem. On the other hand, people who are more threatened with respect to the needs for control and meaningful existence should choose an antisocial response, because they tend to provoke a reaction regardless of the possible negative consequences (Williams, 2009).

Wesselmann et al. (2015) stated that ostracized people show more extreme reactions than the other people involved, regardless of whether it is prosocial or antisocial behavior. Most research focuses on each reaction separately, so it can be assumed that ostracized people will be reflected more in any available response in order to fortify at least some needs. In our study, we intend to contribute to this line of research by examining whether the above mentioned dyads of the most threatened needs predict the respective reaction.

- H3a. Ostracized people who are less satisfied in the needs of belonging or self-esteem will tend to choose a prosocial response.
- H3b. Ostracized people who are less satisfied in the needs of meaningful existence or control will tend to choose an antisocial response.

Recently, the evasive reaction was added to the model (Ren et al., 2016). In their study, introversion predicted a higher desire for solitude after experiencing ostracism. We intend to further explore this type of reaction. Though the need-fortification hypothesis does not take this reaction into account –because people with high levels of social anxiety tend to avoid social situations where there is a risk of rejection (Miller, 2009)– we assume that socially anxious people will not want to continue to interact with the group that ostracized them.

- H3c. Ostracized individuals with higher social anxiety will tend to choose an evasive response.

2. Material and methods

2.1. Participants

In November 2019, we shared an invitation for participation in this study in Czech universities' Facebook groups. An incentive was a chance to win one of five prizes of approximately 7€. Therefore, convenience sampling was used. A total of 671 people entered the study and 246 finished it. The largest attrition occurred during experimental manipulation. Fifty participants were excluded, either based on manipulation checks (adapted from Wolf et al., 2015) or reported technical difficulties. The final sample comprised of 196 participants (62% women) aged 18-30 (M=22.51, SD=2.80); 67% had secondary, 32% tertiary, and 1% primary education. Participants were randomly assigned to one of two experimental conditions. The ostracized condition included 88 participants (45% of the sample). The groups did not significantly differ in gender ($\chi^2(1)=0.912$, p=.339), age (t(194)=0.43, p=.666), nor SNS usage (t(194)=1.21, p=.229).

2.2. Procedure and instruments

Participants were told that the study examined SNS users' online behavior and that they would be asked to complete a questionnaire and contribute to a group task with other online participants. They were assured of their anonymity and their right to quit at any time. Participants provided informed consent by entering the survey. The first part of the study was comprised of questions about demographics, anxiety, positively worded self-esteem items (Rosenberg, 1965) (to alleviate the effect of anxiety items), and a question about their use of SNS. Then they engaged in a group task (section 2.2.1), after which they completed the reflexive need-satisfaction and mood questionnaire, and manipulation checks. Then, participants interacted with the group again in a cooperative financial task (section 2.2.3). To fulfill the aim of the study, the participants were misled to believe that they were interacting with real people. In reality, the other participants and their reactions were pre-programmed, and they differed according to the assigned experimental condition. The manipulation was explained after the survey.

2.2.1. Ostracism

We adapted Ostracism Online (Wolf et al., 2015) to manipulate the level of ostracism. Participants were told that they had to solve a short group task with other people online. In reality, only the participants were involved in the experiment; the other profiles and reactions were programmed. From the provided options, the participants chose their display name and a profile picture. They also wrote a short text (140-400 characters) to introduce themselves to the group. Then the participants were asked to "meet" the others in a pre-programmed virtual room, where they were to inspect the other profiles and where they could "Like" and receive "Likes" (Figure 1). Participants were instructed that this part would last three minutes, and it was important that they engaged in it. To increase credibility, an animation was used to represent the established connection. Although the experimental procedure was limited in external validity, it overcame the limitations of Cyberball by simulating a situation which can be encountered on social media. Concerning the internal validity, the pre-programmed manipulation and random assignment of experimental conditions could ensure higher internal validity, though online administration limited the overall control of the procedure.

Figure 1. Example profile

In their original study, Wolf et al. (2015) created 11 pre-programmed profiles and tried to achieve the maximum diversity in terms of age, gender, and race by asking people from different backgrounds to write an introductory paragraph about themselves. In this study, we followed a similar procedure, though only people from the considered population –the users of SNS, aged 18 to 30 (n=10)– were addressed. They were mostly university students. The descriptions were then revised and piloted in the cognitive interviews (n=5).

In the experiment, a total of nine profiles (including the participant's) were displayed, with the participant's profile in the upper left corner. In both conditions, the pre-programmed members received the same amount of "Likes" (ranging from two to seven). In the experimental condition, the participants received only one "Like" on their profile (i.e., the least amount of "Likes" in a group) and, in the control condition, participants received four "Likes" (i.e., the average amount).

2.2.2. Reflexive reactions

Belongingness, self-esteem, meaningful existence, and control were measured with the Reflexive Need-Satisfaction Questionnaire (Williams, 2009). The tool assesses four dimensions of the feelings experienced during the manipulation with 20 items and a five-point Likert scale (1=Strongly disagree, 5=Strongly agree). CFA in R (*lavaan* package), using UWLS, confirmed the four-dimensional structure. The 19-item model (one item –"I felt I was unable to influence the action of others"– was deleted due to low discrimination) had a satisfactory fit (TLI=.972, CFI=.976, SRMR=.080, RMSEA=.056). The subscales' scores were computed by averaging the answers. Belongingness was measured with five items (e.g., "I felt I belonged to the group"), M=3.3, SD=0.95, α=.842. Self-esteem was measured with five

items (e.g., "I felt liked"), M=3.0, SD=0.83, α=.792. Meaningful existence was measured with 5 items (e.g., "I felt invisible (R)"), M=3.3, SD=0.89, α=.812. Control was measured with four items (e.g., "I felt powerful"), M=2.5, SD=0.85, α=.724.

Mood was measured with four items ("I feel good/friendly/angry/sad") on a five-point Likert scale (1=Strongly disagree, 5=Strongly agree) adapted from Williams' (2009). The items "angry" and "sad" were reversed, and the final score was computed as an average (M=3.94, SD=0.88, α=.827).

2.2.3. Reflective reactions

The second group task was in the form of a cooperative financial game measuring reflective reactions (e.g., prosocial, antisocial, evasive). The task was to collectively manage money in order to maximize the group's overall profit. Participants were told that everyone was randomly assigned a game credit of a different amount. The minimum amount (500CZK – approximately 19€) was required to play the game. The participant received credit of 800CZK. Seven of the pre-programmed players received a sufficient amount of game money (e.g., 500CZK to 1,000CZK). One received only 200CZK; this player then asked the participant for a 300CZK loan, which would allow both to play the game. Refusing the loan meant the other player would not be able to play the game, which strengthened the participant's position in the game.

The participant could respond in three ways. Their response was coded as prosocial when they provided the money (82%), antisocial when they refused the request (16%), and evasive if they chose not to play the game (1.7%). Due to the low prevalence, the evasive response was not included in the analysis and H3c could not be tested. After participants responded to the request, the manipulation was ended, followed by debriefing.

2.2.4. Internalization of manipulation

To verify the effect of ostracization, we included four control items about the internalization of manipulation (Wolf et al., 2015). The first question was: "If we consider that there was an average number of 'Likes' in the group (for example, around four), how would you consider the number of 'Likes' you received?" Participants answered Below average, Around average, or Above average. They generally answered accordingly, 94% of the ostracized group chose the option "below average" and 94% of the non-ostracized group chose either "around average" or "above average".

Three other items asked if participants felt ignored, excluded, and if others liked their contribution (1=Definitely not, 5=Definitely yes).

2.2.5. Social anxiety

Social anxiety was measured with the 10-item Short Form of Social Interaction Anxiety Scale (Kupper & Denollet, 2012) (e.g., "I am nervous mixing with people I don't know well") with answers on a four-point Likert scales (1=Strongly disagree, 4=Strongly agree). The final score was computed by summing the items (M=23.06, SD=7.38, α=.915).

3. Results

The following analyses were conducted with IBM SPSS Statistics 26. First, we checked the manipulation. The average score across the items measuring internalization of manipulation was used to test the difference between groups. As expected, participants in the experimental condition felt more ignored and excluded (M=3.36, SD=0.87) than the control group (M=1.93, SD=0.64), t(153.65)=-12.71, p<.001, d=1.87.

3.1. Reflexive reactions

To test the hypotheses that ostracized people are more negatively affected in their reflexive reactions (H1a and H1b), we performed a series of independent t-tests. We applied Bonferroni correction to reduce the risk of a Type 1 error in multiple testing; the required p-value to reject the null hypothesis was p<.01. As expected, the satisfaction of all four needs (belongingness, self-esteem, meaningful existence, and control) and mood were lower in the experimental (ostracized) group than in the control group (Table

1). The effect sizes ranged between 0.5-0.9, showing moderate to large effects. H1a and H1b were thus supported.

Table 1. Independent t-tests of needs satisfaction and mood								
	Inclusion (n=108)		Ostracism (n=88)		t	df	p	d
	M	SD	M	SD				
Belongingness	3.64	0.83	2.87	0.91	6.18	194	<.001	0.88
Self-esteem	3.21	0.79	2.75	0.81	4.06	193	<.001	0.58
Meaningful existence*	3.63	0.72	2.90	0.91	6.20	164.16	<.001	0.90
Control	2.70	0.87	2.24	0.75	3.89	194	<.001	0.56
Mood	4.13	0.86	3.70	0.85	3.44	194	.001	0.50

Note. *Welch's test for unequal variances was used.

3.2. Moderation of reflexive reactions

To test whether social anxiety moderates the relationship between ostracism and reflexive responses (H2), we conducted four hierarchical multiple linear regressions to predict the satisfaction of needs (belongingness, self-esteem, meaningful existence, and control). Control variables (age, gender) were entered in the first step, followed by the experimental condition (second step), social anxiety (third step), and the interaction of the condition and social anxiety (fourth step).

The general pattern of results in the first three steps was similar. Ostracism and social anxiety predicted all four needs negatively. A weak gender effect showed higher self-esteem satisfaction among men. Adding the interaction term did not significantly improve any model (all $\Delta R^2 \leq .06$) and the interactions were not significant; hence, H2 was not supported. To interpret the main effects, we present the results of step 3 (i.e., without the interaction; Table 2).

Table 2. Standardized regression coefficients predicting satisfaction of needs (step 3)								
	Belongingness		Self-esteem		Meaningful existence		Control	
	β	p	β	p	β	p	β	p
Gender	-.016	.810	.124	.042	.100	.105	.081	.230
Age	-.026	.700	.093	.127	.054	.383	.057	.406
Ostracism	-.415	<.001	-.293	<.001	-.421	<.001	-.273	<.001
Social anxiety	-.159	.017	-.446	<.001	-.321	<.001	-.241	<.001
R^2	.189		.315		.293		.145	
ΔR^2 from step 2	.025		.194		.101		.057	
F	11.15***		21.88***		19.83***		8.08***	

Note. ***p<.001.

3.3. Reflective reactions

To test the hypotheses related to the reflective reactions (H3a, H3b), we performed a 2×2 χ^2-test of independence on an ostracized subsample. We hypothesized that the participants with the most threatened (least satisfied) inclusionary need would behave prosocially, while those with the most threatened power/provocation need would behave antisocially. We created two groups: a prosocial group comprised of the participant who scored lowest on belongingness or self-esteem; and a provocative group comprised of those who scored lowest on meaningful existence or control. There was no significant association with the reflective reaction ($\chi^2(1,81)=0.003$, p=.956, Cramer V=.006), so H3a and H3b were not supported.

These results suggest that there is no direct link between the most threatened need and reaction. To further explore the relationship, we tested whether the reaction was affected by the magnitude of each of the threatened needs. We performed four moderated logistic regressions with the total sample to predict the binary outcome (0=prosocial, 1=antisocial) according to the controls (gender, age) (first step), ostracism (second step), the separate satisfaction of needs (third step), and their interactions (fourth step). Adding the interaction term did not significantly improve any model (all $\Delta R^2 \leq .013$), and the interactions were not significant; thus, for parsimony, we present the results of step 3 (Table 3). The results indicate that the threatened needs did not sufficiently explain why people chose the antisocial response. The only significant result suggests that ostracized people chose the antisocial reaction more often than the control group. However, when testing a model with ostracism as the single predictor, we found that ostracism had

a very weak predictive ability and explained only 4.7% of the variance (Nagelkerke's R^2) of the reflective response.

Model	Predictor	b	SE	Wald(df)	p	OR	95% CI (OR)
1	Gender	0.54	0.41	1.78(1)	.182	1.72	0.77-3.84
	Age	0.1	0.07	2.05(1)	.152	1.1	0.96-1.26
	Ostracism	0.86	0.44	3.88(1)	.049	2.36	1.00-5.54
	Belongingness	-0.23	0.21	1.1(1)	.295	0.8	0.52-1.22
	(Constant)	-4.52	1.65	7.53(1)	.006	0.01	

Table 3. Logistic regressions predicting antisocial reflective reaction (step 3)

-2LL=160.45, $\chi^2(4)$=10.34, p=.035, Nagelkerke's R^2=.090 (ΔR^2 from step 2=.009)

2	Gender	0.47	0.41	1.3(1)	.254	1.6	0.71-3.56
	Age	0.08	0.07	1.38(1)	.240	1.09	0.95-1.24
	Ostracism	1.11	0.43	6.81(1)	.009	3.05	1.32-7.04
	Self-esteem	0.29	0.26	1.23(1)	.267	1.34	0.8-2.23
	(Constant)	-4.21	1.64	6.54(1)	.011	0.01	

-2LL=160.07, $\chi^2(4)$=10.34, p=.035, Nagelkerke's R^2=.090 (ΔR^2 from step 2=.010)

3	Gender	0.51	0.41	1.58(1)	.209	1.67	0.75-3.72
	Age	0.09	0.07	1.81(1)	.178	1.1	0.96-1.26
	Ostracism	1.06	0.44	5.75(1)	.017	2.88	1.21-6.83
	Meaningful existence	0.08	0.25	0.1(1)	.748	1.08	0.67-1.76
	(Constant)	-4.46	1.65	7.34(1)	.007	0.01	

-2LL=161.44, $\chi^2(4)$=9.35, p=.053, Nagelkerke's R^2=.082 (ΔR^2 from step 2=.001)

4	Gender	0.48	0.41	1.39(1)	.239	1.62	0.73-3.62
	Age	0.08	0.07	1.42(1)	.233	1.09	0.95-1.24
	Ostracism	1.16	0.43	7.24(1)	.007	3.2	1.37-7.45
	Control	0.34	0.25	1.86(1)	.173	1.4	0.86-2.28
	(Constant)	-4.27	1.63	6.84(1)	.009	0.01	

-2LL=159.67, $\chi^2(4)$=11.12, p=.025, Nagelkerke's R^2=.097 (ΔR^2 from step 2=.016)

We also further explored the role of social anxiety as a possible moderator for the relationship between ostracism and antisocial response. We conducted an additional analysis to predict reaction (0=prosocial, 1=antisocial) according to controls (gender, age) (first step), ostracism (second step), social anxiety (third step), and their interaction (fourth step). The final model, including the interaction term, was not significant, -2LL=160.14, $\chi 2(5)$=10.65, p=.059 (ΔR2 = .006), and neither was the interaction, nor the main effect of the social anxiety. The only significant predictor was, again, ostracism.

4. Discussion and conclusion

The aim of this study was to examine how young people react to the experience of ostracism on social networking sites (SNS) with the experimental method Ostracism Online. Based on the theory of the temporal need-threat model of ostracism (Williams, 2009), we examined user reactions both immediately after the experience of ostracism (i.e., the reflexive phase) and as part of a delayed reaction, when users have had the opportunity to process the situation and give it some meaning (i.e., the reflective phase).

The results show that the experience of ostracism led to a threat to all four needs, and mood. A strong effect was found for the needs related to belonging and meaningful existence, and a moderate effect was found for self-esteem, the need for control, and mood. These findings are consistent with previous research (Williams, 2009; Wolf et al., 2015). Williams (2009) states that in studies of the reflexive response to ostracism, the magnitude of the effect ranges from 1.0 to 2.0. However, that work refers to research on offline ostracism. A meta-analysis of 120 studies that used Cyberball manipulation (Hartgerink et al., 2015) showed an average magnitude of the effect as d>|1.4|. In our study, the magnitude of the baseline effect was d=0.96 and even a bit smaller for the subscales. It is possible that ostracism in the form of insufficient feedback within an ad hoc-created group on a SNS is slightly less threatening than exclusion in an offline environment. Nevertheless, the effect is still rather strong, and a valid question is whether more real-life conditions, such as students getting together to participate in a group project, would yield an even stronger negative effect.

In the second analysis, we investigated whether the reflexive reaction is moderated by social anxiety. Although a higher level of social anxiety was related to the lower satisfaction of needs, there was no moderation effect on ostracism; thus, our hypothesis was not supported. These results are consistent with

the findings of previous research on the reflexive response to ostracism (Schneider et al., 2017; Zadro et al., 2006). This suggests that social anxiety is not a factor which would support the stronger feelings of threat to fundamental needs due to ostracism, even though socially anxious people may be more vulnerable to negative experiences in online communication (McCord et al., 2014). However, it should be noted that participants obtained "Likes" from strangers. Some research suggests that the total number of "Likes" is not as important as who provides the response (Hayes et al., 2018; Scissors et al., 2016). Thus, we suggest that the ostracism of strangers may not be especially threatening to people with social anxiety; nevertheless, further research could focus on whether the reflexive phase is resistant to the moderation of social anxiety if ostracism comes from a friend or a family member.

In the reflective phase, most people chose a prosocial reaction. The rest chose an antisocial reaction and almost no one chose an evasive reaction. These results are consistent with the hypothesis that, if people have the option of re-inclusion, they prefer a prosocial response (Twenge, 2005; Williams & Wesselmann, 2011). However, preference for this response may also be affected by social desirability (van-de-Mortel, 2008). Due to the low proportion of avoidance response, we were limited to a focus on prosocial and antisocial reactions.

We tested whether people who reported the highest threats in the needs to belong and self-esteem would react prosocially, while those most threatened in the needs of meaningful existence and control would react antisocially, as postulated by the need-fortification hypothesis. Our results contradict this hypothesis: there was no association between the most threatened need and the behavioral response. In the follow-up analysis, we further explored if individual needs predicted the antisocial response, but no effect was found. The antisocial response was linked only to the experience of ostracism, so that ostracized people chose the antisocial response more often than the control group. Our interpretation is that the hypothesis that linked the reaction only with specific needs threatened in the reflexive phase may be too simplistic to explain the motives for a particular action. Thus, we believe that in order to explain the preference for an antisocial response, it would be better to focus on the individual differences or situational factors rather than only on the level of the satisfaction of needs during manipulation. We attempted to further explain these reactions by examining the effect of social anxiety; however, no direct or moderating effect was found. Nevertheless, there may be other important moderators to the relationship between ostracism and antisocial response (Ren et al., 2018), such as narcissism (Chester & DeWall, 2016; Twenge & Campbell, 2003), rejection sensitivity (Ayduk et al., 2008), and an additional threat to control.

4.1. Limitations and future research

Our findings should be interpreted with several limitations in mind. First, though Ostracism Online more adequately represents real-life conditions than Cyberball, the experimental design still suffers from lower ecological validity, which was briefly discussed above. Thus, future research could try to implement procedures that would allow for the examination of the effects of "Likes" from partners from existing social circles (such as classmates). Furthermore, due to the unequal representation of reflective responses, the sample size requirement for moderated logistic regressions increased significantly (Peduzzi et al., 1996), which could have affected the statistical power. Also, the created method (i.e., the cooperative financial task) had some drawbacks and, as a result, we could not include an evasive reaction due to low prevalence. It is possible that the low proportion of this reaction was influenced by its formulation. For future research, we recommend eliminating or changing the evasive response.

4.2. Conclusions

In conclusion, our study shows that even very subtle signs of ostracism upon ad hoc groups on SNS can lead to the lower satisfaction of the needs to belong, self-esteem, meaningful existence, control, and to worsened mood. In addition, the effect of ostracism on needs satisfaction is resistant to the moderation of social anxiety. In the reflective phase, most people choose a prosocial reaction; the rest choose an antisocial reaction; and almost no one chooses the evasive reaction. People in an ostracized condition choose an antisocial response more often than people in a control condition. No other predictors for the antisocial

response were found in this study. Ostracism was manipulated by the small number of reactions to the shared contribution, while these reactions were provided by strangers. Although it is a very subtle and an often-unintentional form of ostracism, the results of this study suggest that, even with this experience, people are partially endangered regarding their psychological well-being. Based on these findings, we can better understand the importance of paralinguistic digital affordances (PDA) in online social interaction and their role in inducing a sense of belonging. We should keep these conclusions in mind, especially at the present time, when a substantial amount of social interactions (including education and work) occur online. Specifically, those who are responsible for guiding and moderating these interactions, such as the teachers of online lessons, should be aware of the possible negative consequences of allowing/using PDA and help students to understand and cope with negative cyberostracism experiences. Unfortunately, ostracism is an experience that is difficult to influence; a better understanding of this phenomenon could help to develop effective coping strategies.

Funding Agency

References

Ayduk, Ö., Gyurak, A., & Luerssen, A. (2008). Individual differences in the rejection–aggression link in the hot sauce paradigm: The case of rejection sensitivity. *Journal of Experimental Social Psychology*, *44*(3), 775-782. https://doi.org/10.1016/j.jesp.2007.07.004

Burrow, A., & Rainone, N. (2017). How many likes did I get? Purpose moderates links between positive social media feedback and self-esteem. *Journal of Experimental Social Psychology*, *69*, 232-236. https://doi.org/10.1016/j.jesp.2016.09.005

Chester, D., & DeWall, C. (2016). Sound the alarm: The effect of narcissism on retaliatory aggression is moderated by dACC reactivity to rejection. *Journal of Personality*, *84*(3), 361-368. https://doi.org/10.1111/jopy.12164

Donate, A., Marques, L., Lapenta, O., Asthana, M., Amodio, D., & Boggio, P. (2017). Ostracism via virtual chat room—Effects on basic needs, anger and pain. *PLoS ONE*, *12*(9), e0184215. https://doi.org/10.1371/journal.pone.0184215

Eisenberger, N., Lieberman, M., & Williams, K. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science*, *302*(5643), 290-292. https://doi.org/10.1126/science.1089134

Hartgerink, C., van Beest I., J.M., W., & K.D., W. (2015). The Ordinal Effects of Ostracism: A Meta-Analysis of 120 Cyberball Studies. *PLoS ONE*, *10*(5), e0127002. https://doi.org/10.1371/journal.pone.0127002

Hayes, R., Carr, C., & Wohn, D. (2016). One click, many meanings: Interpreting paralinguistic digital affordances in social media. *Journal of Broadcasting & Electronic Media*, *60*(1), 171-187. https://doi.org/10.1080/08838151.2015.1127248

Hayes, R., Wesselmann, E., & Carr, C. (2018). When nobody "Likes" you: Perceived ostracism through paralinguistic digital affordances within social media. *Social Media + Society*, *4*(3), 1-2. https://doi.org/10.1177/2056305118800309

Kowalski, R., Giumetti, G., Schroeder, A., & Lattanner, M. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, *140*(4), 1073-1137. https://doi.org/10.1037/a0035618

Kupper, N., & Denollet, J. (2012). Social anxiety in the general population: Introducing abbreviated versions of SIAS and SPS. *Journal of Affective Disorders*, *136*(1-2), 90-98. https://doi.org/10.1016/j.jad.2011.08.014

McCord, B., Rodebaugh, T., & Levinson, C. (2014). Facebook: Social uses and anxiety. *Computers in Human Behavior*, *34*, 23-27. https://doi.org/10.1016/j.chb.2014.01.020

Miller, R.S. (2009). Social anxiousness, shyness, and embarrassability. In M. R. Leary, & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 176-191). The Guilford Press. https://bit.ly/3myP2k4

Peduzzi, P., Concato, J., Kemper, E., Holford, T., & Feinstein, A. (1996). A simulation study of the number of events per variable in logistic regression analysis. *Journal of Clinical Epidemiology*, *49*(12), 1373-1379. https://doi.org/10.1016/s0895-4356(96)00236-3

Reich, S., Schneider, F., & Heling, L. (2018). Zero Likes - Symbolic interactions and need satisfaction online. *Computers in Human Behavior*, *80*, 97-102. https://doi.org/10.1016/j.chb.2017.10.043

Ren, D., Wesselmann, E., & Williams, K. (2018). Hurt people hurt people: Ostracism and aggression. *Current Opinion in Psychology*, *19*, 34-38. https://doi.org/10.1016/j.copsyc.2017.03.026

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press. https://doi.org/10.1515/9781400876136

Ryan, T., Allen, K., Gray, D., & McInerney, D. (2017). How social are social media? A review of online social behaviour and connectedness. *Journal of Relationships Research*, *8*. https://doi.org/10.1017/jrr.2017.13

Schneider, F., Zwillich, B., Bindl, M., Hopp, F., Reich, S., & Vorderer, P. (2017). Social media ostracism: The effects of being excluded online. *Computers in Human Behavior*, *73*, 385-393. https://doi.org/10.1016/j.chb.2017.03.052

Scissors, L., Burke, M., & Wengrovitz, S. (2016). What's in a Like? Attitudes and behaviors around receiving Likes on Facebook. In *CSCW '16: Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing* (pp. 1501-1510). ACM. https://doi.org/10.1145/2818048.2820066

Tobin, S., McDermott, S., & French, L. (2018). The role of group size in reactions to ostracism and inclusion. *Group Processes & Intergroup Relations*, *21*(7), 1014-1033. https://doi.org/10.1177/1368430217702723

Tobin, S., Vanman, E., Verreynne, M., & Saeri, A. (2015). Threats to belonging on Facebook: Lurking and ostracism. *Social Influence*, *10*, 31-42. https://doi.org/10.1080/15534510.2014.893924

Twenge, J. (2005). When does social rejection lead to aggression? The influences of situations, narcissism, emotion, and replenishing connections. In K. Williams, J. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 202-212). Psychology Press. https://doi.org/10.4324/9780203942888

Twenge, J., & Campbell, W. (2003). Isn't it fun to get the respect that we're going to deserve? Narcissism, social rejection, and aggression. *Personality and Social Psychology Bulletin*, *29*(2), 261-272. https://doi.org/10.1177/0146167202239051

Valkenburg, P., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology*, *43*(2), 267-277. https://doi.org/10.1037/0012-1649.43.2.267

van-de Mortel, T. (2008). Faking it: Social desirability response bias in self-report research. *Australian Journal of Advanced Nursing*, *25*(4), 40-48. https://bit.ly/2JfgZyP

Wesselmann, E., Ren, D., & Williams, K. (2015). Motivations for responses to ostracism. *Frontiers in Psychology*, *6*, 40-40. https://doi.org/10.3389/fpsyg.2015.00040

Williams, K. (2009). Ostracism: A temporal need-threat model. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 406-407). Elsevier Academic Press. https://doi.org/10.1016/S0065-2601(08)00406-1

Williams, K., Cheung, C., & Choi, W. (2000). Cyberostracism: Effects of being ignored over the Internet. *Journal of Personality and Social Psychology*, *79*(5), 748-762. https://doi.org/10.1037/0022-3514.79.5.748

Williams, K., & Wesselmann, E. (2011). The link between ostracism and aggression. In *The psychology of social conflict and aggression* (pp. 37-51). Psychology Press. https://doi.org/10.4324/9780203803813

Wohn, D.Y., Carr, C.T., & Hayes, R.A. (2016). How affective is a "Like"? The effect of paralinguistic digital affordances on perceived social support. *Cyberpsychology, Behavior, and Social Networking*, *19*(9), 562-566. https://doi.org/10.1089/cyber.2016.0162

Wolf, W., Levordashka, A., Ruff, J., Kraaijeveld, S., Lueckmann, J., & Williams, K. (2015). Ostracism online: A social media ostracism paradigm. *Behavior Research Methods*, *47*(2), 361-373. https://doi.org/10.3758/s13428-014-0475-x

Zadro, L., Boland, C., & Richardson, R. (2006). How long does it last? The persistence of the effects of ostracism in the socially anxious. *Journal of Experimental Social Psychology*, *42*(5), 692-697. https://doi.org/10.1016/j.jesp.2005.10.007

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Alfamed media education curriculum for teachers

Ignacio Aguaded, Daniela Jaramill-Dent & Águeda Delgado-Ponce (coords.)

Octaedro ◆ Editorial

Updated guide on media and information literacy for educators, in which
participated 22 researchers from 12 countries of America and Europe.

Youths' coping with cyberhate: Roles of parental mediation and family support

Jóvenes ante el ciberodio: El rol de la mediación parental y el apoyo familiar

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ABSTRACT

Adolescents around the world are increasingly exposed to cyberhate. More knowledge is needed to understand how adolescents cope with cyberhate and how they can be supported when exposed. To this end, the present study investigated the associations between parental mediation of Internet use and adolescents' problem-focused coping strategies for hypothetical cyberhate victimization while considering family support as a moderator of these relationships. The sample consisted of 5,960 adolescents between 12-18 years old (M=14.94; SD=1.61; females: 50.7%) from Cyprus, Germany, Greece, India, Spain, South Korea, and Thailand. A structural equation model was used to investigate the relationship among parental mediation, family support, and coping with cyberhate. Findings showed a positive relationship between instructive parental mediation and adolescents' problem-focused coping strategies, and a negative relationship between restrictive parental mediation and adolescents' capability to cope productively with cyberhate. In addition, family support strengthened the positive relationship between instructive parental mediation and adolescents' use of coping strategies and attenuated the negative relationship between restrictive parental mediation and adolescents' use of coping strategies. The findings highlight the need for parental education training and underscore the importance of family support for increasing adolescents' ability to cope productively with cyberhate.

RESUMEN

Adolescentes de todo el mundo están cada vez más expuestos al ciberodio. Se necesita más conocimiento para comprender cómo los y las adolescentes afrontan estas experiencias. El presente estudio investigó la relación entre la mediación parental en el uso de Internet y las estrategias de afrontamiento entre adolescentes centradas en el problema en una hipotética victimización en ciberodio, al tiempo que se consideró el apoyo familiar como moderador de estas relaciones. La muestra estuvo formada por 5.960 adolescentes de entre 12 y 18 años que completaron autoinformes (M=14,94; DE=1,61; mujeres: 50,7%) de Chipre, Alemania, Grecia, India, España, Corea del Sur y Tailandia. Se estimó un modelo de ecuaciones estructurales para investigar la relación entre mediación parental, apoyo social y afrontamiento. Se halló una relación positiva entre la mediación parental instructiva y el uso de estrategias de afrontamiento centradas en el problema y una relación negativa entre la mediación parental restrictiva y la capacidad de los adolescentes para afrontar de forma adecuada el ciberodio. Además, el apoyo familiar moderó estas relaciones, incrementando la relación entre mediación instructiva y afrontamiento y disminuyendo la relación entre mediación restrictiva y afrontamiento de ciberodio. Los hallazgos enfatizan la necesidad de proporcionar información a los padres y ponen de manifiesto la importancia de que las familias fomenten la habilidad de los adolescentes para afrontar de manera adecuada el ciberodio.

KEYWORDS | PALABRAS CLAVE

Cyberhate, hate speech, parental mediation, family support, coping, media education.
Ciberodio, discurso del odio, mediación parental, apoyo familiar, afrontamiento, educación mediática.

1. Introduction

That cyberhate (also known as online hate speech) is a central and highly relevant scientific and societal topic hardly needs to be mentioned. In recent years with increasing polarization and radicalization in many societies, cyberhate has become more present and visible (Wachs et al., 2021). Cyberhate is a communicated hatred against 'the others', 'the strangers', 'the enemies', which includes offensive, insulting, or threatening texts, speech, videos, and pictures against people on grounds of certain group characteristics (e.g., sexual orientation, disability, ethnicity, religion) to harm and devalue targets (Wachs & Wright, 2019). Cyberhate and cyberbullying overlap conceptually. Both are carried out with intent to harm a person or group by using information and communication technologies. Cyberbullying is often described as a repeated activity (Slonje & Smith, 2008), whereas cyberhate may be carried out as a single act. Furthermore, cyberbullying can be directed at an individual person, while cyberhate is based on prejudicial views about different social groups (Wachs et al., 2019).

Cyberhate is a global phenomenon occurring among adolescents across the world (Machackova et al., 2020; Wachs et al., 2021). Cyberhate exposure mostly occurs accidentally (Reichelmann et al., 2020). Hence, it is difficult to shield adolescents from cyberhate without comprising their rights to online privacy and free access to the online world. To understand how support can help adolescents effectively cope with cyberhate, the present study investigated a) the associations between parental mediation strategies of their children's internet use and adolescents' problem-focused coping strategies for cyberhate, and b) whether family support moderates these relationships. The findings might help to develop an empirically based prevention program.

1.1. Coping with cyberhate

Lazarus and Folkman (1987) defined coping as the ability to manage stressful events by reducing or removing the negative effects through cognitive, emotional, and behavioral efforts. According to the Transactional Model of Stress and Coping Theory (Lazarus & Folkman, 1984), coping strategies are often distinguished into two categories: 1) Problem-focused coping targets the causes of stress and is used to manage distress by addressing the problem, and 2) Emotion-focused strategies are carried out to reduce negative emotional responses and are used with the belief that a person is not able to alter or control the source of stress (Lazarus & Folkman, 1984). Although there is no universally effective coping strategy for various stressors, research suggests that using problem-focused coping relates to better adjustment during stressful situations (Lazarus & Folkman, 1984) and that it is more effective than emotion-focused coping to reduce negative outcomes associated with varying forms of victimization (e.g., cyberhate, cyberbullying, bullying) and discrimination (Machmutow et al., 2012; Pascoe & Smart-Richman, 2009; Worsley et al., 2019; Yin et al., 2017).

Research investigating how adolescents cope with cyberhate is scarce. One study revealed that adolescents coped with cyberhate by ignoring it, reporting it to social networking sites' or websites' administrators, telling a friend, parent, teacher, or the police, blocking the person who shared the cyberhate, and addressing the perpetrator publicly (UK Safer Internet Centre, 2016). Furthermore, Wachs et al. (2020) found that German adolescents used six strategies to cope with cyberhate, including distal advice, close support, assertiveness, technical coping, helplessness/self-blame, and revenge. The most common way to cope with cyberhate were problem-focused strategies. In addition, Gámez-Guadix et al. (2020) found in a sample of Spanish adolescents that problem-focused coping with cyberhate (i.e., close support, distal advice, and assertiveness) was correlated with higher levels of mental well-being. Therefore, we will focus on problem-focused coping with cyberhate.

1.2. Associations between parental mediation of Internet use, family support, and coping strategies

The family socialization context is of great importance for the media socialization of adolescents. Children's first media experience is with their family, where they learn how to deal with digital media (Kutscher et al., 2012). Thus, parental mediation of Internet use (we will use the term "parental mediation") might have an impact on how adolescents' cope with cyberhate. According to Livingstone and Helsper (2008: 3), parental mediation is defined as "parental management of the relation between children

and media". Restrictive and instructive mediations are two forms of parental mediation strategies that parents use to facilitate their children's internet experiences (Martínez et al., 2020; Navarro et al., 2013; Sasson & Mesch, 2014). Although this form of parental mediation does not directly include children in negotiating internet experiences, restrictive mediation involves using blocking software or other monitoring activities to control children's online habits. Parents who utilize high restrictive mediation strive to protect children from risks versus educating them about navigating such risks (Navarro et al., 2013; Sasson & Mesch, 2014; Wright & Wachs, 2018). Instructive mediation involves parents incorporating their children in online monitoring, including discussing online risks with their children, explaining when sharing personal information online is appropriate, and warning about the dangers of interacting with strangers online. Parents who utilize high instructive mediation help children understand where to locate safe areas online (Arrizabalaga-Crespo et al., 2010; Livingstone et al., 2017; Sasson & Mesch, 2014; Wright & Wachs, 2018).

The categorization of parental mediation into instructive and restrictive strategies ties in with the classic research on parenting styles. Parenting styles are defined as techniques parents implement in their children's upbringing (Baumrind, 1971). From this research, initial assumptions about the effect of parental mediation strategies on adolescents' coping strategies for cyberhate can be derived. Instructive mediation can be compared to authoritative parenting style and be considered beneficial for the development of coping strategies and self-efficacy. Instructive mediation involves parental suggestions for developing appropriate skills and the emotional conditions necessary for successful problem-solving. In contrast, restrictive mediation is similar to the authoritarian parenting style and it tends to hinder exploratory activities. Thus, this strategy might disrupt the development of self-efficacy, problem-solving skills, and effective coping strategies because of the orientation towards opinions of authorities, the unreflective adoption of knowledge, ready-made solutions, and the maintenance of dependency on parents (Baumrind, 1971; Georgiou, 2008; Hock, 2008).

Some research has investigated potential effects of parental mediation on adolescents' online skills. In one study, instructive mediation did not influence adolescents' online skills but restrictive mediation was negatively correlated with adolescents' online skills (Rodríguez-de-Dios et al., 2018). In contrast, another study revealed a positive association between instructive mediation and online skills (Cabello-Hutt et al., 2018). Similarly, instructive mediation increased the likelihood of adolescents utilizing effective online coping mechanisms when compared to adolescents who reported their parents utilized restrictive mediation strategies (Görzig & Machackova, 2016). Clearly, research is greatly needed to understand the associations between parental mediation and adolescents' problem-focused coping with cyberhate. Thus, the first research question was: 1) What, if any, differences are there in the associations between instructive and restrictive parental mediation and adolescents' use of problem-focused coping?

An individual's perception of being cared for, respected, and valued by family members is known as family support (Zimet et al., 1988). Family support is an important factor that favors positive adaptation to adversity (von-Soest et al., 2010). A supportive family environment is especially relevant during adolescence because adolescents cope with multiple developmental, social, and emotional changes and risks. Family support consistently relates to positive outcomes, such as better academic achievement, less risky behavior, and greater psychological adjustment (Elsaesser et al., 2017). In addition, family support plays an important role in adolescents' development of problem-focused coping strategies (Pinkerton & Dolan, 2007). This research found that family support moderated the relationship between dealing with stressful events and well-being (Eckenrode & Hamilton, 2000; Rutter et al., 1998; Wright & Wachs, 2020). Furthermore, family support has a protective effect on cybervictimization (Gómez-Ortiz et al., 2018; Kowalski et al., 2014). For example, Fanti et al. (2012) found that adolescents with greater family support had less cybervictimization one year later. Family support and parental mediation of Internet use co-exist, and it is important to examine their synergistic interactions (Elsaesser et al., 2017). Research to date has not explored whether family support might moderate the relationship between parental mediation and coping with cyberhate. Thus, the second research question was: 2) What, if any, moderating effect does family support have in the relationships among instructive or restrictive parental mediation and problem-focused coping?

2. Material and methods

There were 5,960 adolescents (12-18 years old; M_{age}=14.94; SD=1.61; females: 50.7%) from seven countries included in this study. The sample consists of 221 (3.7%) Cypriot participants (12–18 years; M_{age}=14.49; SD=1.48; females: 68%) from two schools in Paphos, 1,480 (24.8%) German participants (12–17 years; M_{age}=14.21; SD=1.23; females: 50.3%) from nine schools in the federal states of Berlin and Bremen, 670 (11.2%) Greek participants (15–18 years; M_{age}=16.49; SD=1.12; females: 53.6%) from nine schools in the prefecture Thessaloniki, 1,121 Indian participants (18.8%) (13–18 years; M_{age}=15.37; SD=1.48; females: 45%) from 13 schools in Rourkela, Odisha and Uttarakhand, 756 (12.7%) South Korean participants (12–17 years; M_{age}=14.73; SD=1.23; females: 49.8%) from six schools in Seoul, 1,018 (17.1%) Spanish participants (12–18 years; M_{age}=14.29; SD=1.64; females: 51.7%) from three schools in Madrid, and 716 (11.6%) Thai participants (13–18 years; M_{age}=15.68; SD=1.70; females: 52.8%) from five schools in the regions Songkhla and Surat Thani.

To assess adolescents' problem-focused coping strategies for cyberhate, four subscales of a validated instrument originally developed by Sticca et al. (2015) and adapted to cyberhate by Wachs et al. (2020) were used. Participants were asked to rate their endorsement of four coping strategies, including: (1) Distal advice (3 items, e.g., "… go to the police"); (2) Close support (4 items, e.g., "… spend time with my friends to take my mind off it"), (3) Assertiveness (4 items, e.g., "… tell the person to stop it"); (4) Technical coping (3 items, e.g., "… block that person so that he/she cannot contact me anymore"). All items were rated on a scale ranging from 0 (definitely not) to 3 (definitely). The composite reliabilities (CR) were .80 for distal advice, .85 for close support, .86 for assertiveness, and .81 for technical coping. The results of CFA revealed an acceptable fit: CFI=.97.; TLI=.97; SRMR=.02; RMSEA=.04. Parental mediation was measured by one subscale for restrictive mediation (3 items; e.g., "My parents tell me what websites I can visit or not") and one subscale for instructive mediation (3 items; e.g., "My parents show me how to use the Internet and warn me about its risks") developed by Arrizabalaga-Crespo et al. (2010). The rating for all items ranged from 0 (completely disagree) to 4 (completely agree). CR were .85 for instructive mediation and .79 for restrictive mediation. The results of CFA revealed an acceptable fit: CFI=.98.; TLI=.95; SRMR=.03; RMSEA=.07. Family support was measured by the subscale "Family" of the Perceived Social Support Scale (Zimet et al., 1988). This subscale consisted of four items (e.g., "I can talk about my problems with my family"). The rating for all items ranged from 0 (very strongly disagree) to 6 (very strongly agree). CR was .92. The results of CFA revealed an acceptable fit: CFI=.98.; TLI=.95; SRMR=.02; RMSEA=.08. Control variables. Adolescents' age and sex (male versus female) were used as control variables as some research has shown differences for coping with cyberhate and parental mediation by demographic variables (Gámez-Guadix et al., 2020; Martínez et al., 2020; Wachs et al., 2020). Table 1 provides coefficient alpha for each scale in the overall sample and by country.

Table 1. Coefficient alpha for each country separately						
Country	Instructive Mediation	Restrictive Mediation	Distal Advice	Close Support	Assertiveness	Technical Coping	Family Support
Cyprus	.86	.74	.78	.84	.92	.81	.91
Germany	.83	.72	.70	.85	.91	.83	.93
Greece	.79	.68	.73	.83	.88	.75	.88
India	.82	.64	.79	.84	.90	.78	.87
South Korea	.83	.72	.82	.79	.72	.69	.93
Spain	.78	.67	.78	.78	.86	.74	.88
Thailand	.86	.86	.91	.92	.95	.82	.91
Overall	.86	.74	.78	.84	.92	.81	.91

The research was approved by the researchers' Institutional Review Boards and/or education authorities, and the Helsinki ethics protocol was followed for this study (World Medical Association, 2001). Ethical approval for this study was received from universities in several participating countries (e.g., Autonomous University of Madrid (Spain), Prince of Songkla University (Thailand), Sugang University (South Korea). Emails and calls were made to a random selection of schools to explain the study's aims and the consenting procedures for students. After agreeing to allow their school to participate, research

assistants made announcements to adolescents' classrooms. Parental permission slips were distributed among adolescents who brought the slips to their parents/guardians to obtain consent. Data were collected during regular school hours. Questionnaire translations followed the recommended procedure for translating the survey into various languages. The original instruments were translated into the target language, translated back by someone unfamiliar with the original instruments, and then compared to the original instrument (Sousa & Rojjanasrirat, 2011). The translated versions of the questionnaires can be requested from the second author. Data were collected between April 2018 and 2019. All data were analyzed using SPSS 26 and Mplus 8 (Muthén & Muthén, 2017). First, descriptive statistics, correlations, and missing data were analyzed. Between 3.4% (n=205; distal advice) and 3.9% (n=232; close support) of data were missing for adolescents' coping strategies. The Little's MCAR test was conducted for missing values analyses. The test revealed that data were not systematically missing, ($\chi2$=59.24, df=89, p=.062), suggesting that the full information maximum likelihood (FIML) estimation can be used to address issues with missing data in this study. Second, to investigate the construct validity of the measures, confirmatory factor analyses (CFA) and composite reliability were investigated (Raykov, 2009). Third, to analyze the model fit and main effects of instructive parental mediation, restrictive parental mediation, and family support on adolescents' use of coping strategies, namely distal advice, close support, assertiveness, and technical coping, an initial structural equation model (Model 0) was calculated. The goodness-of-fit was examined by considering the following indices: The Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). The models were evaluated using typical cut-off scores, with the following representing good fit of the data: CFI>.95, TLI>.95; RMSEA<.08, and SRMR<.06 (Hu & Bentler, 1999). To test the latent interactions, the latent moderated structural equations method was used (Klein & Moosbrugger, 2000).

In a first step, a structural equation model without interaction terms using numeric integration in Mplus (alg=integration; estimator=MLR) was estimated (Model 1; Muthén & Muthén, 2017). In a second step, two SEM were estimated using the XWITH command; one included the interactions between instructive parental mediation (predictor) and family support (moderator) to predict adolescents' use of coping strategies (Model 2) and the other model included the interaction between restrictive parental mediation and family support to predict adolescents' coping strategies (Model 3). Model 2 and Model 3 were computed separately because of the complexity of the estimated models. Finally, the $\chi2$-difference test based on log-likelihood values and scaling correction factors were used to evaluate whether the interaction terms revealed a better model fit for Model 2 or Model 3 compared to Model 1 because most fit indexes are not available when using numeric integration in Mplus (Satorra & Bentler, 2001). The standard errors were corrected by using the complex design option (; cluster=country; estimator=MLR) in Mplus to account for the multilevel structure of the data (Muthén & Muthén, 2017). Statistical significance testing was performed at the .05 level.

3. Results

3.1. Preliminary analyses

Bivariate correlations among all latent variables and descriptive statistics are presented in Table 2.

Table 2. Bivariate latent correlation coefficients and descriptive statistics							
	1	2	3	4	5	6	7
1. Instructive parental mediation	---	.68***	.21***	.10***	.10***	.04**	.28***
2. Restrictive parental mediation		---	-.10***	-.14***	-.11***	-.24***	.03
3. Distal Advice			---	.54***	.55***	.58***	.18***
4. Close Support				---	.70***	.81***	.34***
5. Assertiveness					---	.76***	.26***
6. Technical Coping						---	.39***
7. Family support							---
M (SD)	2.11 (1.23)	1.31 (1.12)	1.06 (0.94)	1.79 (1.05)	1.87 (1.09)	1.99 (1.06)	3.93 (1.64)

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

As expected, high instructive parental mediation was associated positively with higher levels of distal advice, close support, assertiveness, and technical coping. In addition, instructive parental mediation was positively correlated with family support and restrictive parental mediation. Restrictive parental mediation was negatively associated with distal advice, close support, assertiveness, and technical coping. However, no significant correlation between restrictive parental mediation and family support was found. All coping strategies were positively correlated.

3.2. Main effects of parental mediation and family support on coping with cyberhate

To investigate the main effects of instructive and restrictive parental mediation strategies and family support on adolescents' use of distal advice, close support, assertiveness, and technical coping strategies, a structural equation model was estimated, while controlling for adolescents' age and sex. The model fit was good ($\chi 2$=2617.75, df=227, p<.001, CFI=.96, RMSEA=.04, SRMR=.04), and standardized factor loadings ranged from 0.57 to 0.91. As shown in Table 2, instructive parental mediation was positively associated with distal advice ($\hat{\beta}$=0.25, SE=0.03, p<.001), restrictive parental mediation was negatively associated with distal advice ($\hat{\beta}$=-0.10, SE=0.03, p<.001), and family support was positively related to distal advice ($\hat{\beta}$=0.11, SE=0.01, p<.001). Instructive parental mediation was also positively associated with close support ($\hat{\beta}$=0.35, SE=0.03, p<.001), restrictive parental mediation was negatively associated with close support ($\hat{\beta}$=-0.43, SE=0.03, p<.001), and family support was positively related to close support ($\hat{\beta}$=0.24, SE=0.01, p<.001).

In addition, instructive parental mediation was positively associated with assertiveness ($\hat{\beta}$=0.35, SE=0.03, p<.001), restrictive parental mediation was negatively associated with assertiveness ($\hat{\beta}$=-0.39, SE=0.03, p<.001), and family support was positively related to assertiveness ($\hat{\beta}$=0.17, SE=0.01, p<.001). Finally, instructive parental mediation was positively associated with technical coping ($\hat{\beta}$=0.34, SE=0.03, p<.001), restrictive parental mediation was negatively associated with technical coping ($\hat{\beta}$=-0.53, SE=0.03, p<.001), and family support was positively related to technical coping ($\hat{\beta}$=0.30, SE=0.01, p<.001; see Figure 1). The estimated model explained 7% of the total variance in distal advice, 19% of the total variance in close support, 13% of the total variance in assertiveness, and 26% of the total variance in technical coping.

Figure 1. Main effects of parental mediation and family support on problem-focused coping
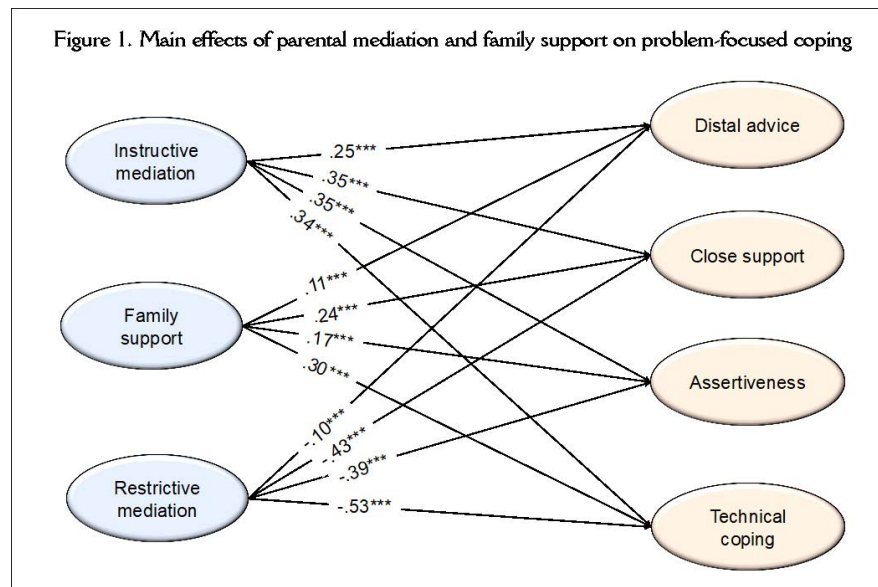
3.3. Moderating effects of family support on the relation between parental mediation and coping

In the next step, a SEM that included the main effects using the numeric integration in Mplus was estimated (Model 1, Table 3). This SEM was followed by two other SEM, one included the interaction

between instructive parental mediation and family support (Model 2) and the other included the interaction between restrictive parental mediation and family support (Model 3). Both Models 2 and 3 were then compared with Model 1 using the chi-square difference test. The chi-square difference test was used to compare Models 1 and 2 based on log-likelihood values and scaling correction factors obtained with the MLR estimator was significant, $\chi^2(4, n=5878)=86.95$, $p<.001$, suggesting that the inclusion of the interactions revealed a better model fit. Family support moderated the relationship between instructive parental mediation and distal advice ($\hat{\beta}=0.14$, SE=0.01, $p<.001$). Probing the significant interaction effect further revealed that the unstandardized simple slope coefficients were .01 (SE=0.01, p=.923, at -1 SD) for low, .12 (SE=0.01, $p<.001$, at 0 SD) for moderate, and .25 (SE=0.01, $p<.001$, at +1 SD) for high family support, indicating that the positive relationship between instructive parental mediation and distal advice was strengthened as family support increased from moderate to high family support.

There was also a significant moderation effect between instructive parental mediation and family support ($\hat{\beta}=0.07$, SE=0.01, $p<.001$) when predicting close support. Probing the significant interaction effect further revealed that the unstandardized simple slope coefficients were .07 (SE=0.02, $p<.001$, at -1 SD) for low, .14 (SE=0.01, $p<.001$, at 0 SD) for moderate, and .24 (SE=0.01, $p<.001$, at +1 SD) for high family support, indicating that the positive relationship between instructive parental mediation and close support was strengthened as family support increased. In addition, family support moderated the association between instructive parental mediation and assertiveness ($\hat{\beta}=0.06$, SE=0.02, $p<.001$). Probing the significant interaction effect further revealed that the unstandardized simple slope coefficients were .07 (SE=0.02, $p<.001$, at -1 SD) for low, .13 (SE=0.01, $p<.001$, at 0 SD) for moderate, and .19 (SE=0.02, $p<.001$, at +1 SD) for high family support, indicating that the positive relationship between instructive parental mediation and close support was strengthened as family support increased. Finally, family support moderated the relationship between instructive parental mediation and technical coping ($\hat{\beta}=0.10$, SE=0.02, $p<.001$). Probing the significant interaction effect further revealed that the unstandardized simple slope coefficients were .01 (SE=0.02, p=.581, at -1 SD) for low, .08 (SE=0.01, $p<.001$, at 0 SD) for moderate, and .18 (SE=0.02, $p<.001$, at +1 SD) for high family support, indicating that the positive relationship between instructive parental mediation and technical coping was strengthened as family support increased from moderate to high levels. The estimated model explained 10% of the total variance in distal advice, 20% of the total variance in close support, 13% of the total variance in assertiveness, and 28% of the total variance in technical coping.

As shown in Table 2, the chi-square difference test used to compare Model 1 and Model 3 based on log-likelihood values and scaling correction factors obtained with the MLR estimator was also significant, $\chi^2(4, n=5878)=170.68$, $p<.001$. More specifically, family support moderated the relationship between restrictive parental mediation and distal advice ($\hat{\beta}=0.21$, SE=0.02, $p<.001$). Probing the interaction effect further revealed that the unstandardized simple slope coefficients were -.15 (SE=0.02, $p<.001$, at -1 SD) for low), -.03 (SE=0.02, p=.184, at 0 SD) for moderate, and -.10 (SE=0.02, $p<.001$, at +1 SD) for high family support, indicating that the negative relationship between restrictive parental mediation and close support was weakened as family support increased. Family support also moderated the relationship between restrictive parental mediation and close support ($\hat{\beta}=0.14$, SE=0.02, $p<.001$). Probing the interaction effect further revealed that the unstandardized simple slope coefficients were -.30 (SE=0.02, $p<.001$, at -1 SD) for low, -.21 (SE=0.02, $p<.001$, at 0 SD), and -.10 (SE=0.02, $p<.001$, at +1 SD) for high family support, indicating that the negative relationship between restrictive parental mediation and close support was weakened as family support increased. In addition, family support moderated the association betweeninstructive parental mediation and assertiveness ($\hat{\beta}=0.15$, SE=0.02, $p<.001$). Probing the interaction effect further revealed that the unstandardized simple slope coefficients were -.32 (SE=0.02, $p<.001$, at -1 SD) for low, -.21 (SE=0.02, $p<.001$, at 0 SD) for moderate, and -.10 (SE=0.02, $p<.001$, at +1 SD) for high family support, indicating that the negative relationship between restrictive parental mediation and assertiveness was weakened as family support increased. Finally, family support moderated the relationship between restrictive parental mediation and technical coping ($\hat{\beta}=0.21$, SE=0.02, $p<.001$). Probing the interaction effect further revealed that the unstandardized simple slope coefficients were -.37 (SE=0.02, $p<.001$, at -1 SD) for low, -.21 (SE=0.02, $p<.001$, at 0 SD) for

moderate, and -.11 (SE=0.02, p<.001, at +1 SD) for high family support, indicating that the negative relationship between restrictive parental mediation and technical coping was weakened as family support increased. The estimated model explained 13% of the total variance in distal advice, 24% of the total variance in close support, 18% of the total variance in assertiveness, and 35% of the total variance in technical coping.

Table 3. Path Coefficients of the Main Effects (Model 0 and 1) and Latent-Interaction Models (Model 2 and 3)					
	Model 0		**Model 1**	**Model 2**	**Model 3**
	β (*SE*)		β (*SE*)	β (*SE*)	β (*SE*)
Outcome and predictor					
Distal advice					
INSPM	.25*** (0.03)		.25*** (0.03)	.22*** (0.04)	.28*** (0.04)
RESPM	-.10*** (0.03)		-.10*** (0.03)	-.07 (0.04)	-.14*** (0.04)
FASU	.11*** (0.01)		.11*** (0.01)	.16*** (0.02)	.15*** (0.02)
INSPM x FASU				.14*** (0.01)	
RESPM x FASU					.21*** (0.02)
R^2	.07***		.07***	.10***	.13***
Close support					
INSPM	.35*** (0.03)		.35*** (0.03)	.33*** (0.04)	.39*** (0.04)
RESPM	-.43*** (0.03)		-.43*** (0.03)	-.40*** (0.04)	-.46*** (0.04)
FASU	.24*** (0.01)		.24*** (0.01)	.27*** (0.02)	.36*** (0.02)
INSPM x FASU				.07*** (0.01)	
RESPM x FASU					.14*** (0.02)
R^2	.19***		.19***	.20***	.24***
Assertiveness					
INSPM	.35*** (0.03)		.35*** (0.03)	.32*** (0.04)	.39*** (0.04)
RESPM	-.39*** (0.03)		-.39*** (0.03)	-.37*** (0.04)	-.44*** (0.04)
FASU	.17*** (0.01)		.17*** (0.01)	.19*** (0.02)	.19*** (0.02)
INSPM x FASU				.06*** (0.02)	
RESPM x FASU					.15*** (0.02)
R^2	.13***		.13***	.13***	.18***
Technical coping					
INSPM	.34*** (0.03)		.34*** (0.03)	.30*** (0.04)	.38*** (0.04)
RESPM	-.53*** (0.03)		-.51*** (0.03)	-.48*** (0.04)	-.56*** (0.04)
FASU	.30*** (0.01)		.30*** (0.01)	.34*** (0.02)	.32*** (0.02)
INSPM x FASU				.10*** (0.02)	
RESPM x FASU					.21*** (0.02)
R^2	.26***		.26***	.28***	.35***
Model fits					
χ2	2617.75	L	-181413.17	-181363.23[1]	-181314.20[1]
df	227	c	1.16	1.16	1,16
CFI	.96	np	92	96	96
RMSEA	.04				
SRMR	.04				

Note. INSPM=instructive parental mediation, RESPM=restrictive parental mediation, FASU=family support, L=loglikelihood values, c=scaling correction factor, np=number of parameters. [1] Difference test between Model 1 and 2 and Model 1 and Model 3, respectively, was significant.

4. Discussion and conclusion

The impetus of the present study was to understand the associations between parental mediation, family support, and adolescents' use of problem-focused coping strategies towards cyberhate. Regarding our first research question, we found that instructive mediation was positively, and restrictive mediation was negatively associated with adolescents' use of problem-focused coping strategies. We propose that

parents who utilize instructive mediation allow their children to be independent and act responsibly online. Such parental mediation strategies increase their children's knowledge of online risks, internalization of safety recommendations, and their self-efficacy for dealing with online risks, such as cyberhate. Instructive mediation might involve parents teaching or discussing coping strategies that reduce adolescents' exposure to cyberhate. Thus, such adolescents might have more knowledge on how to avoid situations that might lead to online risks.

On the other hand, restrictive mediation negatively impacts adolescents' ability to cope with online risks because employing this mediation strategy does not consider their children's feelings or desires when they make decisions; such strategies hinder adolescents' exploratory activities and the development of problem-solving skills and self-efficacy.

Ultimately, restrictive mediation does not allow adolescents to deal with online risks without their parents intervening through overprotective parenting behaviors. Overall, these findings are in line with what researchers have found for the effects of parenting styles related to the offline world (Baumrind, 1971; Georgiou, 2010; Hock, 2008). The findings are also partially in line with research on the potential effects of parental mediation on Internet use (Cabello-Hutt et al., 2018; Görzig & Machackova, 2016; Rodríguez-de-Dios et al., 2018).

Regarding our second research question, we found that family support strengthened the positive relationship between instructive mediation and problem-focused coping and diminished the negative relationship between restrictive mediation and problem-focused coping. A possible explanation for this finding might be that perception of parental warmth and support could increase trust in parents, strengthening aspects of constructive mediation, and reduce the negative consequences of restrictive mediation. A supportive parental environment could increase adolescents' disclosure of online activities and foster effective coping strategies. Without the perception of being cared for and loved by family members, restrictive mediation could be perceived as intrusive and over-controlling. In this regard, strong restrictive mediation could be a source of stress for children by imposing strict rules and harsh standards of behavior that are perceived as illegitimate. Family support could ameliorate these negative side effects, strengthening open discussion about how to deal with negative online experiences. These findings are consistent with related research on the influence of family support on coping with stressful events in the offline world (Eckenrode & Hamilton, 2000; Pinkerton & Dolan, 2007; Rutter et al., 1998; Wright & Wachs, 2020). The results are also congruent with previous findings on the role of parental support on cyberbullying victimization (Elsaesser et al., 2017).

It is important to help minimize adolescents' exposure to cyberhate victimization through parental intervention programs. Our findings highlight the importance of parents and the family environment for helping adolescents develop effective coping strategies for cyberhate victimization. Parental support might empower adolescents to implement these coping strategies to help mitigate negative effects of cyberhate. It is important for parents/guardians to develop a better awareness of effective coping strategies to deal with cyberhate and recognize the negative effects associated with cyberhate victimization among adolescents. Prevention programs might help educate parents on the strategies they can use to support adolescents who report experiencing cyberhate. Social media might also have a role in helping raise awareness of cyberhate through campaigns designed to spread knowledge about cyberhate and how parents can help reduce exposure and increase adolescents' well-being. Such campaigns, combined with targeted intervention for adolescents, could also be helpful for training adolescents on effective coping strategies and how to best implement those strategies.

There are a few limitations in the present study that need to be mentioned. First, the participants provided their coping strategies for a hypothetical cyberhate victimization incident. While using hypothetical situation has benefits (e.g., gathering information from all participants and not only adolescents who experienced cyberhate victimization), follow-up research should focus on coping strategies regarding actual experiences and compare the findings with this study. Second, the present study relies on self-reports for all study variables; thus, the findings might be biased by shared method variance. Therefore, future studies should incorporate a multi-informant approach. One possibility could be to include multiple sources of information (e.g., parents, teachers) on mediation strategies and family support. Third, the sample

might not be representative, even though the sample size of this study was large. More research based on representative sample is warranted to increase the generalizability of the present study's findings. Cross-culturally representative samples would also allow invesigations into the cultural context of the associations between parental mediation, coping, and family support. Fourth, conclusions cannot be drawn regarding the temporal ordering of the main study variables due to the cross-sectional research design. Follow-up research should incorporate longitudinal studies. Finally, another potential limitation might also be that we included only problem-focused coping strategies, two types of parental mediation, and a few control variables. Future research should aim to include also unproductive coping strategies (e.g., helplessness, retaliation), co-viewing parental mediation, and more control variables (e.g., socioeconomic background). To better understand the relation between parental mediation and coping, more moderators (e.g., self-efficacy, media competencies) should also be investigated in follow-up research.

This study contributes to the literature on the associations between parental mediation and adolescents' coping strategies for cyberhate, as well as how family support moderates this relationship. We consider parental mediation of Internet use as correlate of adolescents' capability to cope productively with cyberhate and family support as a moderator of this relationship.

Findings suggest that instructive parental mediation is positively, and restrictive parental mediation is negatively correlated with adolescents use of problem-focused coping. In addition, family support strengthens the positive relationship between instructive mediation and problem-focused coping and diminished the negative relationship between restrictive mediation and problem-focused coping. The present study points to the need for more attention on developing media education programs that focus on the role of parents and families in helping to empower their children to develop effective coping strategies.

Funding Agency

References

Arrizabalaga-Crespo, C., Aierbe-Barandiaran, A., & Medrano-Samaniego, C. (2010). Internet uses and parental mediation in adolescents with ADHD. *Revista Latina de Comunicación Social*, *65*, 561-571. https://doi.org/10.4185/RLCS-65-2010-919-561-571-EN

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology*, *4*(1, Pt.2), 1-103. https://doi.org/10.1037/h0030372

Cabello-Hutt, T., Cabello, P., & Claro, M. (2018). Online opportunities and risks for children and adolescents: The role of digital skills, age, gender and parental mediation in Brazil. *New Media & Society*, *20*(7), 2411-2431. https://doi.org/10.1177/1461444817724168

de Dios, I.R., van Oosten, J.M., & Igartua, J.J. (2018). A study of the relationship between parental mediation and adolescents' digital skills, online risks and online opportunities. *Computers in Human Behavior*, *82*, 186-198. https://doi.org/10.1016/j.chb.2018.01.012

Eckenrode, J., & Hamilton, S. (2000). One to one support interventions. In S. Cohen, L. Underwood, & B. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists* (pp. 278-308). Oxford University Press. https://doi.org/10.1093/med:psych/9780195126709.003.0008

Elsaesser, C., Russell, B., Ohannessian, C.M., & Patton, D. (2017). Parenting in a digital age: A review of parents' role in preventing adolescent cyberbullying. *Aggression and Violent Behavior*, *35*, 62-72. https://doi.org/10.1016/j.avb.2017.06.004

Fanti, K.A., Demetriou, A.G., & Hawa, V.V. (2012). A longitudinal study of cyberbullying: Examining riskand protective factors. *European Journal of Developmental Psychology*, *9*(2), 168-181. https://doi.org/10.1080/17405629.2011.643169

Gámez-Guadix, M., Wachs, S., & Wright, M. (2020). Haters back off! Psychometric properties of the coping with cyberhate questionnaire and relationship with well-being in Spanish adolescents. *Psicothema*, *32*(4), 567-574. https://doi.org/10.7334/psicothema2020.219

Georgiou, S.N. (2010). Bullying and victimization at school: The role of mothers. *British Journal of Educational Psychology*, *78*(1), 109-112. https://doi.org/10.1348/000709907X204363

Gómez-Ortiz, O., Romera, E., Ortega-Ruiz, R., & Rey, R.D. (2018). Parenting practices as risk or preventive factors for adolescent involvement in cyberbullying: Contribution of children and parent gender. *International Journal of Environmental Research and Public Health*, *15*(12), 2664-2664. https://doi.org/10.3390/ijerph15122664

Görzig, A., & Machackova, H. (2016). Cyberbullying in Europe: A review of evidence from cross-national data. In M. Wright (Ed.), *A social-ecological approach to cyberbullying* (pp. 295-326). Nova Science.

Hock, M. (2008). Erziehungsstile und ihre Auswirkungen. [Educational styles and their effects]. In W. Schneider (Ed.), *Handbuch der psychologie: Handbuch der pädagogischen psychologie. [Manual of psychology: Manual of educational*

psychology] (pp. 491-500). Hogrefe. https://doi.org/10.1007/978-3-476-05023-6_19

Klein, A., & Moosbrugger, H. (2000). Maximum likelihood estimation of latent interaction effects with the LMS method. *Psychometrika*, *65*(4), 457-474. https://doi.org/10.1007/bf02296338

Kowalski, R.M., Giumetti, G.W., Schroeder, A.N., & Lattanner, M.R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, *140*(4), 1073-1137. https://doi.org/10.1037/a0035618

Kutscher, N. (2013). Medienbildung in der Kindheit. *MedienPädagogik: Zeitschrift für Theorie und Praxis der Medienbildung*, *22*, 1-16. https://doi.org/10.21240/mpaed/22/2013.10.08.x

Lazarus, R., & Folkman, S. (1987). *Stress, appraisal and coping*. Springer.

Livingstone, S., & Helsper, E.J. (2008). Parental mediation of children's internet use. *Journal of Broadcasting & Electronic Media*, *52*(4), 581-599. https://doi.org/10.1080/08838150802437396

Livingstone, S., Ólafsson, K., Helsper, E.J., Lupiáñez-Villanueva, F., Veltri, G.A., & Folkvord, F. (2017). Maximizing opportunities and minimizing risks for children online: The role of digital skills in emerging strategies of parental mediation. *Journal of Communication*, *67*(1), 82-105. https://doi.org/10.1111/jcom.12277

Machackova, H., Blaya, C., Bedrosova, M., Smahel, D., & Staksrud, E. (2020). *Children's experiences with cyberhate*. EU Kids Online. https://bit.ly/3q5vFBi

Machmutow, K., Perren, S., Sticca, F., & Alsaker, F.D. (2012). Peer victimisation and depressive symptoms: Can specific coping strategies buffer the negative impact of cybervictimisation? *Emotional and Behavioural Difficulties*, *17*(3-4), 403-420. https://doi.org/10.1080/13632752.2012.704310

Martínez, G., Casado, M.A., & Garitaonandia, G. (2020). Online parental mediation strategies in family contexts of Spain. [Estrategias online de mediación parental en contextos familiares de España]. *Comunicar*, *56*. https://doi.org/10.3916/C65-2020-06

Muthén, L.K., & Muthén, B.O. (2017). *Mplus user's guide*. Muthén & Muthén. https://bit.ly/3g4tnhf

Navarro, R., Serna, C., Martínez, V., & Ruiz-Oliva, R. (2013). The role of Internet use and parental mediation on cyberbullying victimization among Spanish children from rural public schools. *European Journal of Psychology of Education*, *28*(3), 725-745. https://doi.org/10.1007/s10212-012-0137-2

Pascoe, E.A., & Richman, L.S. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, *135*(4), 531-554. https://doi.org/10.1037/a0016059

Pinkerton, J., & Dolan, P. (2007). Family support, social capital, resilience and adolescent coping. *Child & Family Social Work*, *12*(3), 219-228. https://doi.org/10.1111/j.1365-2206.2007.00497.x

Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modeling. *Measurement and Evaluation in Counseling and Development*, *42*, 223-232. https://doi.org/10.1177/0748175609344096

Reichelmann, A., Hawdon, J., Costello, M., Ryan, J., Blaya, C., Llorent, V., Oksanen, A., Räsänen, P., & Zych, I. (2020). Hate knows no boundaries: Online hate in six nations. *Deviant Behavior*, (pp. 1-12). https://doi.org/10.1080/01639625.2020.1722337

Rutter, M., Giller, H., & Hagel, A. (1998). *Antisocial behavior by young people*. Cambridge University Press.

Sasson, H., & Mesch, G. (2014). Parental mediation, peer norms and risky online behavior among adolescents. *Computers in Human Behavior*, *33*, 32-38. https://doi.org/10.1016/j.chb.2013.12.025

Satorra, A., & Bentler, P.M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, *66*(4), 507-514. https://doi.org/10.1007/bf02296192

Slonje, R., & Smith, P. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology*, *49*(2), 147-154. https://doi.org/10.1111/j.1467-9450.2007.00611.x

Sousa, V.D., & Rojjanasrirat, W. (2011). Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: a clear and user-friendly guideline. *Journal of Evaluation in Clinical Practice*, *17*(2), 268-274. https://doi.org/10.1111/j.1365-2753.2010.01434.x

Sticca, F., Machmutow, K., Stauber, A., Perren, S., Palladino, B., Nocentini, A., Menesini, E., Corcoran, L., & Guckin, C. (2015). The coping with cyberbullying questionnaire: Development of a new measure. *Societies*, *5*(2), 515-536. https://doi.org/10.3390/soc5020515

tze Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

UK Safer Internet Centre (Ed.) (2016). *Creating a better Internet for all: Young people's experiences of online empowerment + online hate*. https://bit.ly/2Jk6QAD

Von-Soest, T., Mossige, S., Stefansen, K., & Hjemdal, O. (2010). A validation study of the resilience scale for adolescents (READ). *Journal of Psychopathology and Behavioral Assessment*, *32*(2), 215-225. https://doi.org/10.1007/s10862-009-9149-x

Wachs, S., Gámez-Guadix, M., Wright, M.F., Görzig, A., & Schubarth, W. (2020). How do adolescents cope with cyberhate? Psychometric properties and socio-demographic differences of a coping with cyberhate scale. *Computers in Human Behavior*, *104*, 106167-106167. https://doi.org/10.1016/j.chb.2019.106167

Wachs, S., Koch-Priewe, B., & Zick, A. (2021). *Hate Speech – Multidisziplinäre Analysen und Handlungsoptionen*. VS Verlag für Sozialwissenschaften.

Wachs, S., Wachs, S., Costello, M., Wright, M.F., Flora, K., Daskalou, V., Maziridou, E., Kwon, Y., Na, E.Y., Sittichai, R., Biswalk, R., Singh, R., Almendros, C., Gámez-Guadixm, M., Görzig, A., & Hong, J.S. (2021). DNT LET'EM H8 U!: Applying the routine activity framework to understand cyberhate victimization among adolescents across eight countries. *Computers & Education*, *160*, 104026. https://doi.org/10.1016/j.compedu.2020.104026

Wachs, S., & Wright, M.F. (2019). The moderation of online disinhibition and sex on the relationship between online hate victimization and perpetration. *Cyberpsychology, Behavior, and Social Networking*, *22*(5), 300-306. https://doi.org/10.1089/cyber.2018.0551

Wachs, S., Wright, M.F., & Vazsonyi, A.T. (2019). Understanding the overlap between cyberbullying and cyberhate perpetration: Moderating effects of toxic online disinhibition. *Criminal Behaviour and Mental Health*, *29*(3), 179-188. https://doi.org/10.1002/cbm.2116

World Medical Association (Ed.) (2001). World medical association declaration of Helsinki. Ethical principles for medical research involving human subjects. *Bull World Health Organ*, *79*, 373-374. https://doi.org/10.1001/jama.2013.281053

Worsley, J.D., McIntyre, J.C., & Corcoran, R. (2019). Cyberbullying victimisation and mental distress: Testing the moderating role of attachment security, social support, and coping styles. *Emotional and Behavioural Difficulties*, *24*(1), 20-35. https://doi.org/10.1080/13632752.2018.1530497

Wright, M., & Wachs, S. (2018). Does parental mediation moderate the longitudinal association among bystanders and perpetrators and victims of cyberbullying? *Social Sciences*, *7*(11), 231-231. https://doi.org/10.3390/socsci7110231

Wright, M.F., & Wachs, S. (2020). Moderation of parental support on health and cyberbullying among adolescents with intellectual and developmental disabilities. *Journal of Child and Family Studies*, *29*, 2390-2401. https://doi.org/10.1007/s10826-020-01739-9

Yin, X.Q., Wang, L.H., Zhang, G.D., Liang, X.B., Li, J., Zimmerman, M.A., & Wang, J.L. (2017). The promotive effects of peer support and active coping on the relationship between bullying victimization and depression among Chinese boarding students. *Psychiatry Research*, *256*, 59-65. https://doi.org/10.1016/j.psychres.2017.06.037

Zimet, G.D., Dahlem, N.W., Zimet, S.G., & Farley, G.K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*(1), 30-41. https://doi.org/10.1207/s15327752jpa5201_2

Motivation and perception of Hong Kong university students about social media news

Motivación y percepción de los universitarios de Hong Kong sobre noticias en las redes sociales

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ABSTRACT

With the prevalence of social media in a digital age, accessing news on social media has become a daily routine of university students' lives. However, little research has been done to examine their social media news use in detail, especially in Asian countries. To fill this gap, we aimed to examine what motivated university students to seek news on social media, to what extent they perceived they were in control of the influences of news, and whether news motives were related to their levels of news media literacy across three domains: (a) authors and audiences; (b) messages and meaning, and (c) representation and reality. One hundred and forty-seven university students from a university in Hong Kong participated. Among the four news motives, socializing was the most powerful predictor for news use on social media. Most students believed they were in control of news influences and demonstrated a high level of news media literacy, and those who believed themselves to be in control of news influences showed a higher level of news media literacy. In this sense, high news-literate students were more likely to seek news for socializing as compared to their low news-literate counterparts. Insights on educating students to use social media in a positive and smart way were discussed.

RESUMEN

Con la prevalencia de las redes sociales en la era digital, acceder a las noticias en redes sociales se ha convertido en una rutina cotidiana en la vida de los estudiantes universitarios. Sin embargo, se ha realizado mínima investigación sobre el uso de noticias en redes sociales, especialmente en los países de Asia. Para colmar esta laguna, pretendemos examinar qué motivó a los estudiantes universitarios a buscar noticias en redes sociales, en qué medida percibían que controlaban las influencias de noticias, y si las motivaciones de noticias se relacionaban con su nivel de alfabetismo de la prensa en tres dominios: a) autores y audiencias; b) mensajes y significados, y c) representación y realidad. Participaron 147 estudiantes de una universidad de Hong Kong. Entre las cuatro motivaciones, la socialización fue el indicador más poderoso. La mayoría de los estudiantes creían que podían controlar la influencia de noticias, demostrando un alto alfabetismo de la prensa. Los estudiantes con alto nivel de alfabetización de los medios de comunicación son más propensos a buscar noticias para socializar, en comparación con las contrapartes con bajo nivel de alfabetización. Se debatieron perspectivas sobre cómo educar a los estudiantes para emplear de una forma positiva e inteligente las redes sociales.

KEYWORDS | PALABRAS CLAVE

Social networking sites, news, digital consumption, media use, media literacy, university.
Redes sociales, noticias, consumo digital, uso de medios, alfabetización mediática, universidad.

1. Introduction

Social media, such as Facebook, YouTube, WhatsApp, and Twitter, constitute a form of online platform that enables interactions and communications across the geographical boundaries worldwide. With the dramatic rise of social media, seeking, sharing, and discussing news via these interactive platforms has become an inevitable part of university students' everyday lives (Casero-Ripollés, 2012; Martinez-Costa et al., 2019). According to a digital news report covering 37 Western and Asian countries (including the US, the UK, Japan, and Korea, etc.), around half (53%) of young people aged 18-24 use social media for news on a weekly basis (Newman et al., 2018). In Hong Kong, three out of five adults report getting news from social media, which has surpassed the proportion who do so via traditional print media (Newman et al., 2019).

With the growing popularity of social media as news sources, it has become a focus of attention among teachers, educators, and scholars to have a clear understanding of how and why university students seek news on social media, how much control they perceive over the influences of news, and how well they know about the news. The current research aimed to address these questions by measuring university students' motives underlying social media news use, perceived news media control, and levels of news media literacy. We captured students' news motives using a scale adapted from prior research and assessed their perceived control over news influences and news media literacy using existing measurements. The potential associations among news motives, perceived news media control, and news media literacy were also examined.

We believe that a clearer understanding of news activities and news motives would help to identify learners' actual levels and needs in news media literacy education. As suggested by prior research, teaching news media literacy can increase individuals' news consumption, social responsibility, and democratic participation (Hobbs, 2010). Before we can move forward to education in practice, we need empirical data to identify students' current news knowledge and skills. In this sense, the current study fills this gap by providing direct evidence on Hong Kong students' needs and characteristics.

1.1. Social media news use

Social media has dramatically changed the way university students consume news and the role they play in the news industry. On the bright side, it brings benefits to news users with its unique features. Unlike traditional news channels where users only receive news passively, social media enables users' active participation in news production and dissemination. Users can post a status, upload event photos and live videos that deliver timely and useful information using functions such as comments, likes, shares, or tags on social media (Choi, 2016; Choi & Lee, 2015). Also, social media produces and delivers news instantaneously, at a speed that leaves traditional sources or other online channels far behind (Choi & Lee, 2015). Furthermore, social media provides open and interactive forums where students can share viewpoints and have discussions freely. Thus, a more transparent, trustworthy, and democratic society would come into being with citizens engaging more in news and caring more about society (Ellison et al., 2007).

While social media provides a range of benefits, it poses several risks. First, social media filters or prioritizes news based upon users' personal preferences (such as previous news reading and sharing, friends' preferences, recency, and popularity). This might lead to selective exposure to media content and cause extreme viewpoints (Thurman & Schifferes, 2012). Second, social media makes news stories susceptible to reinterpretation, distortion, mutation, and redistribution, with users summarizing news stories or adding commentaries while sharing news (Soep, 2012). Also, without strict controls and well-established fact-checking systems, social media can be a fertile ground for sowing misinformation (which is unintentionally false) and disinformation (which is intentionally false) (Shao et al., 2017). Fake news might distort students' view of the world and undermine the public trust in society if students cannot deal with them correctly (Allcott & Gentzkow, 2017; Brandtzaeg et al., 2018; Pennycook et al., 2018). Even worse, if students are not able to use social media properly, they could rely on these platforms as a way to escape from reality (Gao et al., 2017; Kırcaburun & Griffiths, 2019). Considering both benefits and pitfalls of social media news use, it has become crucial to provide students with efficient news media literacy education. If

students are better prepared to avoid the risks and maximize the benefits, their learning of news could be enhanced through these interactive platforms. Before this step can be taken, educators and practitioners need to have an accurate understanding of students' news motives, actual competence, and knowledge.

1.2. Conception of news motives

To better profile students' social media news use, one of the first questions we need to figure out is why students choose to seek news on social media. Many studies grounded on the uses and gratifications (U&G) theory have been conducted to investigate news motives. The main argument of U&G theory is that individuals select media that can best gratify their specific social and psychological needs (Katz et al., 1974). Based on this, four motives for social media news use have been identified by prior studies: information seeking (i.e., to acquire useful information about community, social events, and current affairs), socializing (i.e., to get topics for social conversations), entertainment (i.e., to escape the boredom of daily routines or release emotions), and status seeking (i.e., to get recognized by peers) (Diddi & LaRose, 2006; Dunne et al., 2010; Park et al., 2009).

Social media revives the research of U&G theory with its capabilities to fulfill users' diverse needs (Rubin, 2009; Ruggiero, 2000). As noted earlier, it makes news more personalized and interactive and provides communicative platforms where users can discuss social issues freely. These defining features cater to users' personal needs for certain categories of information and satisfy their gratifications related to socializing. Considering an increasing amount of news activities on social media, it is valuable to recap news motives through the lens of U&G theory (Dunne et al., 2010). To address this, the first research question of the current study was:

• RQ1: What are the news motives underlying news seeking on social media?

1.3. Conception of news media literacy

Given the uneven quality of news on social media, university students need a wider range of skills and knowledge to stay reasonable in this complex news environment. News media literacy is a skill that can help develop an understanding of how and why people engage with news, how individuals make sense of the news, and how they are influenced by their own news habits (Maksl et al., 2015).

The theory of news media literacy was derived from Potter's cognitive model of media literacy (2004). In his model, four components were proposed: knowledge structures, personal locus, competencies and skills, and information processing. Of these four components, knowledge structures highlight a generic awareness of media industry, content, effects, self, and the real world, and personal locus involves the personal needs and motives that drive different modes of information processing.

According to Potter's model (2004), knowledge structures and personal locus interact with each other, with better knowledge enriching a person's motives for news, and motives driving the person to know more about media influences. Additionally, media literacy involves a set of critical thinking skills for analyzing, evaluating, and judging media messages. Although Potter's model is more concerned with an overall understanding of media literacy, it has been widely applied to the sub-field of news media literacy (Mihailidis, 2011).

In terms of news media literacy specifically, news knowledge involves a clear understanding of what news is, under which conditions news is produced, and the influences news can have on people. The knowledge about news content, industries, and effects, combined with a great sense of control and consciousness regarding the effects of news, would result in higher levels of news media literacy. In other words, news media literacy requires an interplay between knowledge about news and the personal locus over the influences of news.

In the current study, we examined the extent to which students perceive themselves as being in control of news influences and how much they know about the news by using Media Locus of Control Scale (Maksl et al., 2015; Maksl et al., 2017) and News Media Literacy Scale (Ashley et al., 2013). We skipped some components proposed in Potter's model (2004; 2010), such as the competencies and skills, because of the practical difficulties related to survey administration. Maksl et al. (2015) have found that highly media-literate teenagers can perceive more control over their relationship with media, indicating that the

more teens know about news, the higher their perceived control over news influences. Thus, we aimed to examine the following questions:

- RQ2: What are the levels of university students' perceived news media control and news media literacy?
- RQ3: Are there any relations between perceived news media control and news media literacy?

Apart from a sense of being in control of news influences and news knowledge, news motives also help to create news-literate students. Basically, news motives can determine a person's attitude and behavior, giving rise to the way a person understands and processes news messages (Diddi & LaRose, 2006; Eveland, 2002; 2004; Lin, 2002; Rubin & Perse, 1987; Ruggiero, 2000). Maksl et al. (2015) have suggested that diverse motives would link to individual differences in learning from the news, thus leading to different levels of news media literacy. Stronger news motives would enhance a person's knowledge about current events and the process of influences, and in return, the acquired knowledge and perceived influences would strengthen the motives for news (Potter, 2004). To further understand such a potential relation between news motives and news media literacy, we examined:

- RQ4: Aredifferent types of news motives related to different levels of news media literacy?

1.4. The present study

The present study aimed to examine university students' news motives, perceived news media control, and news media literacy. We investigated 147 undergraduates' news habits on social media (i.e., how often they get news from social media, which platform they use most frequently for news), and assessed their news motives underlying social media news use. Students' perceived news media control and news media literacy across three domains (i.e., authors and audiences, messages and meaning, and representation and reality) were measured using Media Locus of Control Scale (Maksl et al., 2015; Maksl et al., 2017) and News Media Literacy Scale (Ashley et al., 2013). A median split was conducted to separate and compare participants with high and low news media literacy. We expected that students who were more knowledgeable about news would perceive higher control over news influences, and highly news-literate students were more likely to be driven by internal motives for social media news use (e.g., information seeking). Insights on how to educate students to better navigate information on social media were discussed.

2. Material and methods
2.1. Participants

The study's participants were 150 Hong Kong university students recruited through posters and bulletin board announcements on campus during the month of February 2018. A total of 147 participants were included in the final analysis, with data from three students eliminated due to their age being over the range of the target population (i.e., young students). The final sample's age ranged from 18 to 25 years (M=20.71, SD=1.58), with 76.19% being female. Participation was voluntary and anonymous. However, the fact that the sample was drawn from only one university in Hong Kong might present a limitation of the study. We would further address this in the discussion.

2.2. Measures and procedures

Participants were asked to complete a 30-min survey offline in a laboratory. Informed consent was obtained before the commencement, and each participant was provided with a coffee coupon valued HKD 50 as a token of appreciation.

2.2.1. Social media news habits

Participants' social media news habits were measured in terms of daily news access. They were first asked to indicate their time spent on news activities on social media via a question, (i.e., what is the amount of time you spent on news reading, sharing, commenting, or discussion on social media on an average day?), and their preferences for various social media platforms (i.e., which of the following social media do you use most frequently to read/watch news and share/discuss news?; see Table 2 for the options). To

ensure every participant comprehends the concept of social media, a brief description of its definition was provided before related questions were asked (i.e., social media comprise web-based applications where users can create and share information and have free interactions, such as Facebook, YouTube, WeChat, etc.).

2.2.2. Social media news motives

Participants' news motives were measured using a well-established assessment adapted from prior research (Lee et al., 2011; Lee & Ma, 2012; Park et al., 2009). Four types of social media news motives were included: information seeking, socializing, entertainment, and status seeking. Information seeking measured the extent to which participants valued the useful, relevant, and timely information provided by social media. Socializing tapped on how much news activities on social media helped to develop and maintain social relationships. Entertainment measured the degree to which participants sought news on social media for leisure and entertainment purposes, and status seeking assessed the purpose of attaining status among peers. Each motive was assessed by three items on a 5-point Likert scale, ranging from 1=Strongly Disagree to 5=Strongly Agree. Sample items and the number of items were presented in Table 1.

Table 1. Sample items of news motives, perceived news media control, and news media literacy		
Variables	**Sample Items**	**No. of Items**
News motives[1]		
Information seeking	It helps me to store useful information	3
Socializing	To keep in touch with people	3
Entertainment	It helps me pass time	3
Status seeking	It helps me feel important	3
Perceived news media control[2]	If I pay attention to different sources of news, I can avoid being misinformed	4
News media literacy[3]		
Authors and audiences (AA)	News companies choose stories based on what will attract the biggest audience	3
Messages and meaning (MM)	People pay more attention to news that fit with their beliefs than news that don't	5
Representation and reality (RR)	A news story that has good pictures is more likely to show up in the news	4

Note 1. News Motives were measured by scales adapted from prior research (Lee et al., 2010; Lee & Ma, 2012; Park et al., 2009).
2. Perceived News Media Control was measured using the Media Locus of Control Scale (Maksl et al., 2015; Maksl et al., 2017).
3. News Media Literacy was measured using the News Literacy Scale (Ashely et al., 2013).

2.2.3. Perceived news media control and news media literacy

Participants' sense of being in control of news media influences and knowledge about news were measured using existing scales. For perceived news media control, a 6-item self-reported Media Locus of Control Scale (Maksl et al., 2015; Maksl et al., 2017) was administered to assess the perceived confidence and sense of responsibility in seeking truthful and credible news information. Participants were asked to rate on a 5-point Likert scale ranging from 1=Strongly Disagree to 5=Strongly Agree. For news media literacy, a 12-item self-reported News Media Literacy Scale (Ashely et al., 2013) was administered to assess students' knowledge about news media across three domains: authors and audiences (an understanding of how news might be constructed differently to reach specific target audience), messages and meaning (an ability to comprehend the way that value judgments affect the interpretation of news), and representation and reality (an understanding of how the editorial process of news might affect the presentation of news). Identical to the Media Locus of Control Scale, a 5-point Likert scale was presented (Table 1), and a higher score indicated a higher level of news media literacy.

3. Results
3.1. Social media news habits

Around half of the participants (47.62%) spent 30 minutes to 2 hours per day engaging with news on social media, followed by 38.78% spending less than 30 minutes and 11.56% for over 2 hours. Only

2.04% reported that they never used social media for news activities. In terms of the most frequently-used social media platforms, Facebook came up as the dominant site (66.14%), with Weibo (5.51%) and Yahoo (5.51%) following far behind. The profiles of students' social media news habits are shown in Table 2.

Table 2. Social media news habits of Hong Kong university students	
Variables	**%**
Time spent on social media news use	
Less than 30 minutes	38.78
30 minutes – 2 hours	47.62
Over 2 hours	11.56
No such habit	2.04
Most frequently-used social media platforms[1]	
Facebook	66.14
Weibo	5.51
Youtube	3.94
Wechat	3.94
Instagram	3.94
Whatsapp	2.36
Google+	2.36
Twitter	0.79

Note 1. Social media platforms were listed in the order from most- to least-used. Options not listed: 'others' (9.45%) and 'never use social media for news' (1.57%).

3.2. Social media news motives

Table 3 presented the descriptive results and reliability of news motives on social media. Acceptable reliability of each motive type was obtained (all $\alpha s \geq 0.72$, see Table 3). Information seeking was the primary motive driving participants' news activities, with socializing ranking the second followed by entertainment and status seeking.

3.3. Perceived news media control and news media literacy

Table 3 also presented the descriptive statistics and reliability of participants' perceived news media control and news media literacy. Acceptable reliability was obtained for the News Media Literacy Scale ($\alpha = .70$), but unacceptable reliabilities were obtained for the Media Locus of Control Scale and the subscales of News Media Literacy (all $\alpha s \leq .54$). Participants' ratings in Media Locus of Control Scale demonstrated a moderate to high sense of perceived control over news influences, and results of the News Media Literacy Scale revealed a high level of news media knowledge, even in each dimension of authors and audiences, messages and meanings, representation and reality.

Table 3. Means, standard deviations (SDs) and reliability coefficient of news motives, perceived news media control, and news media literacy			
	Mean	**SD**	**Cronbach alpha**
News motives			
Information seeking	3.77	.69	.72
Socializing	3.66	.70	.75
Entertainment	2.96	.91	.82
Status seeking	2.44	.85	.92
Perceived news media control	3.66	.56	.46
News media literacy	4.41	.31	.70
Authors and audiences (AA)	4.43	.43	.52
Messages and meaning (MM)	4.32	.40	.54
Representation and reality (RR)	4.51	.40	.52

3.4. Correlations among news motives, perceived news media control, and news media literacy

Table 4 shows the correlations among daily news access on social media (i.e., the amount of time spent on news activities on social media), news motives, perceived news media control, and news media literacy. Results suggest that daily news access on social media is positively correlated with the motive of

socializing (r=.21, <.05). Four types of news motives were not correlated with perceived news media control and news media literacy, except the relation between status seeking and perceived news media control and that between socializing and news media literacy. Besides, perceived news media control was positively and significantly related to news media literacy.

Table 4. Correlations among daily news access on social media, news motives, news media knowledge, and news media literacy							
	1	2	3	4	5	6	7
1. Daily news access on social media	-						
News motives							
2. Information seeking	.04	-					
3. Socializing	.21*	.11	-				
4. Entertainment	.03	.13	.24**	-			
5. Status seeking	.14	.15	.32**	.32**	-		
6. Perceived news media control	.03	.12	.24	-.06	.17*	-	
7. News media literacy	.05	.08	.30**	-.09	.08	.31**	-

Note. *p<.05, **p<.01.

3.5. Prediction of news motives and news media literacy on social media news use

A regression analysis was conducted to examine the predictive effects of news motives and news media literacy on daily news access on social media (Table 5). We entered four types of news motives (i.e., information seeking, socializing, status seeking, and entertainment), news media literacy and perceived news media control into the model using a forward method, so that only the variable(s) producing the best prediction could be entered into the model. Only the motive of socializing was successfully entered into the model, which significantly predicted the daily news access on social media (β=1.06, t=3.27, p=.03). The motive of socializing also explained a significant proportion of variance in daily news access on social media (R^2=.03, F=4.93, p=.03).

Table 5. Means and standard deviations (SDs) of news motives by levels of news media literacy				
	Mean (SD)			
	Information seeking	Socializing	Entertainment	Status seeking
Low news media literacy	3.68 (.65)	3.48 (.70)	3.06 (.87)	2.38 (.77)
High news media literacy	3.82 (.71)	3.83 (.66)	2.88 (.95)	2.49 (.93)

3.6. Comparisons between high and low news-literate participants

High and low news-literate participants were separated by a median split, and a two-way mixed ANOVA was conducted to examine the relations between news motives and news media literacy. Normality checks showed that the residuals did not fit the normal distribution (Mauchly's Test of Sphericity: p=0.32). The results of ANOVA showed that there were significant effects for news motives (F=122.88, p<.001, η_p=.44) and news motives×news media literacy interaction (F=3.57, p<.05, η_p=.03), but not for news media literacy (F=1.48, p=0.23, η_p=.01). Simple effect t-tests to follow up the interaction revealed significant differences in socializing between low and high news-literate participants, t(143)=2.98, <.01, with high news-literate participants being more likely to seek news for socializing (Table 5).

4. Discussion and conclusion

The current study provided empirical data on how Hong Kong university students consumed news on social media, what motivated their news use on social media, and how those news motives were linked to their levels of news media literacy. Most Hong Kong students consumed news via social media on a daily basis with Facebook ranked the most popular platform. Three major findings were obtained: (1) most students were motivated by information seeking and socializing for social media news use, and socializing was the strongest motive in predicting the amount of news use on social media; (2) those who believed themselves to be in control of news media influences showed higher levels of news media literacy; and

(3) students with high news media literacy were more likely to seek news for socializing as compared to their lower news-literate counterparts.

The majority of our participants were motivated by information seeking and socializing for their social media news use. These are powerful and enduring motives that could enhance students' acquisition of useful knowledge and social communication. Similar findings have been obtained in prior studies. For instance, Papacharissi and Rubin (2000) and Luo (2002) found that information seeking was a key driver for Web use, and Howard and Corkindale (2008) demonstrated that socializing was positively associated with online news consumption. It was good to see that university students sought news mostly for relevant and timely information, as such intrinsically driven behavior would result in better learning, creativity, competence and positive coping (Ryan & Deci, 2000). Also, the socializing motive helped to fulfill students' needs to fit in, extend and deepen social relationships, which constituted an important developmental task for young people during their early adulthood (Scale, 2010). We also found that news motives varied between highly news-literate and low news-literate students, with those possessing higher news media literacy being more likely to be driven by the socializing motive. This indicates that highly news-literate individuals care more about interacting with others which brings them a sense of belonging (Rubin, 1986). They share news from social media to develop and maintain their social relationships, and feel connected to the community through news sharing and discussions. On the one hand, the increased news activities boost the accumulation of news knowledge that forms the basis of news media literacy. On the other hand, higher news literacy brings confidence in sharing views and news, thus leading to closer connections to their friends and family.

The link between news motives and news media literacy was also found in previous research. The study of Maksl et al. (2017) suggested that teens with better news media literacy displayed greater intrinsic motivation as compared to less news-literate counterparts (e.g., I follow the news because I like to). This can be explained by the argument that suggests that diverse news motives influence the way young people perceive and process news (Ryan & Deci, 2000), thus leading to differential learning from the news (Choi, 2016; Eveland, 2002; David, 2009; Maksl et al., 2015; Malik et al., 2013). Theoretically, a full awareness of how news are produced and disseminated would help to increase the understanding of news influences and enhance personal self-efficacy in controlling news influences. When people recognize their abilities to do so, their motivations for news engagement might increase (Potter, 2004). Taken together, the current findings have practical implications for future news literacy education. By identifying university students' knowledge and competence in news, our data specifies what educators and practitioners should focus on in their future education to best fulfill students' needs. For instance, as suggested by our findings, news use on social media has become an unavoidable part of students' everyday lives, so it is necessary to teach about social media and its potential influences before exposing students to a complex news environment on social media. Also, news habits, news motives, and news media literacy might differ among students from different socio-cultural environments (Fleming & Kajimoto, 2016; Hornik & Kajimoto, 2014; Silverblatt et al., 2014). Therefore, educators should incorporate local learners' characteristics into the existing education models but not directly copying what Western programs have developed. We believe that a better understanding of students' news habits, news motives, and other psychological components (e.g., perceived control over news influences and levels of news media literacy) would help empower and improve the teaching and learning of news. Social media would serve as an efficient learning tool for news literacy education if students are well equipped to use them in a smart way.

One limitation of this study was the efficacy of the self-report scales and a lack of direct assessment on critical thinking in news. As illustrated in our results, the reliability of some scales was unacceptable for a standardized instrument, and there is a lack of objective assessment on students' critical thinking skills in interpreting and evaluating real-life news messages. Future research can seek to address these questions by improving the relevant measurements. For instance, a combination of self-report scales and objective skill tests would help to get a more comprehensive picture of how much university students know about news (Ku et al., 2019). Another limitation is the sampling methods and limited sample size. We put out open recruitment for students to participate in our study, and those who decided to come were more likely to be naturally active and expressive, which led to a possibility of a biased sample. The scale of

sampling is small and restricted in one university in Hong Kong, and there were more female than male participants. Methodologically, we did not consider students' majors and other background information that might be associated with news habits or news media literacy. Overall, these limitations might cause a limited generalization of our findings. To solve these, we suggest implementing a larger-scale study to look at university students' news activities across countries. In this sense, the current findings can serve as a starting point and basis for future research.

The current study examined 147 university students' news motives, perceived news media control, and levels of news media literacy. We found that the motive of socializing was the most powerful predictor for social media news use, and most students showed a strong sense of being in control over news influences and a high level of knowledge about news. Highly news-literate users were more likely to display a socializing motive when compared to those who were less news-literate. Considering the limited scope and size of our sample, we call for a study at a larger scale, across different cultures, to further understand students' actual knowledge, competence, and needs in news. The relevant research would provide first-hand information about learners' diverse needs and assist educators and teachers to foster responsible news users in an interactive and information-saturated age.

Funding Agency

References

Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. *Journal of Economic Perspectives*, *31*(2), 211-236. https://doi.org/10.1257/jep.31.2.211

Ashley, S., Maksl, A., & Craft, S. (2013). Developing a news media literacy scale. *Journalism & Mass Communication Educator*, *68*(1), 7-21. https://doi.org/10.1177/1077695812469802

Brandtzaeg, P., Følstad, A., & Chaparro-Domínguez, M. (2018). How journalists and social media users perceive online fact-checking and verification services. *Journalism Practice*, *12*(9), 1109-1129. https://doi.org/10.1080/17512786.2017.1363657

Casero-Ripollés, A. (2012). Beyond newspapers: News consumption among young people in the digital era. [Más allá de los diarios: El consumo de noticias de los jóvenes en la era digital]. *Comunicar*, *20*, 151-158. https://doi.org/10.3916/C39-2012-03-05

Choi, J. (2016). Why do people use news differently on SNSs? An investigation of the role of motivations, media repertoires, and technology cluster on citizens' news-related activities. *Computers in Human Behaviour*, *54*, 249-256. https://doi.org/10.1016/j.chb.2015.08.006

Choi, J., & Lee, J.K. (2015). Investigating the effects of news sharing and political interest on social media network heterogeneity. *Computers in Human Behaviour*, *44*, 258-266. https://doi.org/10.1016/j.chb.2014.11.029

David, C.C. (2009). Learning political information from the news: A closer look at the role of motivation. *Journal of Communication*, *59*(2), 243-261. https://doi.org/10.1111/j.1460-2466.2009.01414.x

Diddi, A., & LaRose, R. (2006). Getting hooked on news: Uses and gratifications and the formation of news habits among college students in an internet environment. *Journal of Broadcasting & Electronic Media*, *50*(2), 193-210. https://doi.org/10.1207/s15506878jobem5002_2

Dunne, A., Lawlor, M., & Rowley, J. (2010). Young people's use of online social networking sites – a uses and gratifications perspective. *Journal of Research in Interactive Marketing*, *4*(1), 46-58. https://doi.org/10.1108/17505931011033551

Ellison, N., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends": Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143-1168. https://doi.org/10.1111/j.1083-6101.2007.00367.x

Eveland, W. (2002). News information processing as mediator of the relationship between motivations and political knowledge. *Journalism & Mass Communication Quarterly*, *79*(1), 26-40. https://doi.org/10.1177/107769900207900103

Eveland, W. (2004). The effect of political discussion in producing informed citizens: The roles of information, motivation, and elaboration. *Political Communication*, *21*, 177-193. https://doi.org/10.1080/10584600490443877

Fleming, J., & Kajimoto, M. (2016). The freedom of critical thinking: Examining efforts to teach American news literacy principles in Hong Kong, Vietnam, and Malaysia. In M. Yildiz, & J. Keengwe (Eds.), *Handbook of research on media literacy in the digital world* (pp. 208-235). IGI Global. https://doi.org/10.4018/978-1-5225-8359-2.ch020

Gao, W., Liu, Z., & Li, J. (2017). How does social presence influence SNS addiction? A belongingness theory perspective. *Computers in Human Behavior*, *77*, 347-355. https://doi.org/10.1016/j.chb.2017.09.002

Hobbs, R. (2010). *Digital and media literacy: A plan of action*. Aspen Institute. https://bit.ly/31u26Q8

Hornik, R., & Kajimoto, M. (2014). De-Americanizing' news literacy: Using local media examples to teach critical thinking to students in different socio-cultural environments. *Asia Pacific Media Educator*, *24*(2), 175-185. https://doi.org/10.1177/1326365x14555280

Howard, Y., & Corkindale, D. (2008). Towards an understanding of the behavioral intention to use online news services. *Internet Research*, *18*(3), 286-312. https://doi.org/10.1108/10662240810883326

Kajimoto, M. (2016). Developing news literacy curricula in the age of social media in Hong Kong. *Vietnam and Myanmar. Journalism Education*, *5*(1), 136-155. https://bit.ly/3ie0hN8

Katz, E., Blumler, J.G., & Gurevitch, M. (1974). *The uses of mass communications: Current perspectives on gratifications research*. Sage publications.

Kircaburun, K., & Griffiths, M. (2019). Problematic Instagram use: The role of perceived feeling of presence and escapism. *International Journal of Mental Health and Addiction*, *17*(4), 909-921. https://doi.org/10.1007/s11469-018-9895-7

Ku, K., Kong, Q., Song, Y., Deng, L., Kang, Y., & Hu, A. (2019). What predicts adolescents' critical thinking about real-life news? The roles of social media news consumption and news media literacy. *Thinking Skills and Creativity*, *33*. https://doi.org/10.1016/j.tsc.2019.05.004

Lee, C., Goh, D., Chua, A., & Ang, R. (2010). Indagator: Investigating perceived gratifications of an application that blends mobile content sharing with gameplay. *Journal of the American Society for Information Science and Technology*, (6), 1244-1257. https://doi.org/10.1002/asi.21305

Lee, C., & Ma, L. (2012). News sharing in social media: The effect of gratifications and prior experience. *Computers in Human Behavior*, *28*(2), 331-339. https://doi.org/10.1016/j.chb.2011.10.002

Lee, C.S., Ma, L., & Goh, D.H.L. (2011). *Why do people share news in social media? In International Conference on Active Media Technology*. Springer. https://doi.org/10.1007/978-3-642-23620-4_17

Lin, C.A. (2002). Perceived gratifications of online media service use among potential users. *Telematics and Informatics*, *19*(1), 3-19. https://doi.org/10.1016/s0736-5853(01)00014-4

Luo, X. (2002). Uses and gratifications theory and e-consumer behaviors: A structural equation modeling study. *Journal of Interactive Advertising*, *2*(2), 44-54. https://doi.org/10.1080/15252019.2002.10722060

Maksl, A., Ashley, S., & Craft, S. (2015). Measuring news media literacy. *Journal of Media Literacy Education*, *6*(3), 29-45. https://bit.ly/3ihRw4D

Maksl, A., Craft, S., Ashley, S., & Miller, D. (2017). The usefulness of a news media literacy measure in evaluating a news literacy curriculum. *Journalism & Mass Communication Educator*, *72*(2), 228-241. https://doi.org/10.1177/1077695816651970

Malik, M.M., Cortesi, S., & Gasser, U. (2013). https://doi.org/10.2139/ssrn.2342313

Martínez-Costa, M., Serrano-Puche, J., Portilla, I., & Sánchez-Blanco, C. (2019). Young adults' interaction with online news and advertising. [La interacción de los jóvenes adultos con las noticias y la publicidad online]. *Comunicar*, *59*, 19-28. https://doi.org/10.3916/c59-2019-02

Mihailidis, P. (2011). New civic voices & the emerging media literacy landscape. *Journal of Media Literacy Education*, *3*(1), 3. https://bit.ly/2ZnQxay

Newman, N., Fletcher, R., Kalogeropoulos, A., Levy, D., & Nielsen, R.K. (2018). *Reuters Institute Digital News Report*. Reuters Institute for the Study of Journalism. https://bit.ly/3mFBpja

Newman, N., Fletcher, R., Kalogeropoulos, A., & Nielsen, R.K. (2019). *Reuters Institute Digital News Report 2019*. Reuters Institute for the Study of Journalism. https://bit.ly/31zq7VU

Papacharissi, Z., & Rubin, A.M. (2000). Predictors of Internet use. *Journal of Broadcasting & Electronic Media*, *44*(2), 175-196. https://doi.org/10.1207/s15506878jobem4402_2

Park, N., Kee, K., & Valenzuela, S. (2009). Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes. *CyberPsychology & Behavior*, *12*(6), 729-733. https://doi.org/10.1089/cpb.2009.0003

Pennycook, G., Cannon, T.D., & Rand, D.G. (2018). Prior exposure increases perceived accuracy of fake news. *Journal of Experimental Psychology: General*, *147*(12), 1865-1880. https://doi.org/10.1037/xge0000465

Potter, W. (2004). *Theory of media literacy: A cognitive approach*. Sage. https://doi.org/10.4135/9781483328881

Potter, W. (2010). The state of media literacy. *Journal of Broadcasting & Electronic Media*, *54*(4), 675-696. https://doi.org/10.1080/08838151.2011.521462

Rubin, A., & Perse, E. (1987). Audience activity and television news gratifications. *Communication Research*, *14*(1), 58-84. https://doi.org/10.1177/009365087014001004

Rubin, A.M. (2009). Uses-and-gratifications perspective of media effects. In J. Bryant, & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (pp. 165-184). Routledge. https://doi.org/10.4324/9780203877111-14

Ruggiero, T.E. (2000). Uses and gratifications theory in the 21st century. *Mass Communication and Society*, *3*(1), 3-37. https://doi.org/10.1207/s15327825mcs0301_02

Ryan, R.M., & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54-67. https://doi.org/10.1006/ceps.1999.1020

Scale, P.C. (2010). Characteristics of young adolescents. In *This we believe: Keys to educating young adolescents* (pp. 53-62). National Middle School Association.

Shao, C., Ciampaglia, G., Varol, O., Yang, K., Flammini, A., & Menczer, F. (2018). The spread of low-credibility content by social bots. *Nature Communications*, *9*(1), 1-9. https://doi.org/10.1038/s41467-018-06930-7

Silverblatt, A., Ayudhya, Y., & Jenkins, K. (2014). International media and informational literacy. In *Media literacy education in action: Theoretical and pedagogical perspectives* (pp. 219-224). Routledge. https://bit.ly/3gbP7Xq

Soep, E. (2012). The digital afterlife of youth-made media: Implications for media literacy education. [Generación y recreación de contenidos digitales por los jóvenes: implicaciones para la alfabetización mediática]. *Comunicar*, *38*, 93-100. https://doi.org/10.3916/c38-2012-02-10

Thurman, N., & Schifferes, S. (2012). The future of personalization at news websites: Lessons from a longitudinal study. *Journalism Studies*, *13*(5-6), 775-790. https://doi.org/10.1080/1461670x.2012.664341

Anxiety and self-esteem in cyber-victimization profiles of adolescents

Ansiedad y autoestima en los perfiles de cibervictimización de los adolescentes

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ABSTRACT

This study has two objectives: (1) Identify profiles of victimization in adolescence, depending on the levels of offline or online peer aggression suffered, along with the prevalence of each profile; and (2) Analyse the association of the victimization profiles with adolescents' social anxiety and self-esteem. The sample was comprised of 3120 adolescents aged 12 to 18 (M=14.03; SD=1.40) from Asturias (Spain), who completed self-report questionnaires about traditional peer victimization and cyber-victimization, as well as social anxiety and self-esteem. We performed descriptive analyses, Latent Profile Analyses, and multivariate analyses of variance. We found a positive, moderate correlation between being a cyber-victim and being a traditional victim, along with four profile types: non-victims (77.8%), mainly cyber-victims (13.5%), mainly traditional victims (4.5%), and dual victims (4.3%). Traditional victims and dual victims exhibited greater social anxiety and less self-esteem than cyber-victims, who exhibited greater social anxiety and less self-esteem than non-victims. Dual victims and traditional victims do not differ in social anxiety and self-esteem. The results contribute to the identification of patterns of victimization in school-age adolescents, and their relationship with social anxiety and self-esteem.

RESUMEN

Este trabajo parte de dos objetivos: 1) Identificar perfiles de victimización en la adolescencia, en función del grado de padecimiento de violencia offline u online por parte de sus iguales, así como la prevalencia de cada perfil; y 2) Analizar la asociación de los perfiles de victimización obtenidos con la ansiedad social y la autoestima del adolescente. Para ello, se aplicaron cuestionarios de autoinforme sobre victimización tradicional entre iguales, cibervictimización, ansiedad social y autoestima a 3.120 adolescentes de Asturias (España), de 12 a 18 años (M=14.03; DT=1.40). Se realizaron análisis descriptivos, análisis de perfil latente y análisis multivariado de la varianza. Se obtuvo una correlación positiva y moderada entre ser cibervíctima y ser víctima de violencia tradicional; y una tipología de cuatro perfiles: no víctimas (77,8%), principalmente cibervíctimas (13,5%), principalmente víctimas de violencia tradicional (4,5%) y víctimas duales (4,3%). Cuanto mayor es el nivel de victimización, mayor la ansiedad social y menor la autoestima, siendo más fuerte esta asociación con la victimización tradicional que con la cibervictimización. Tanto las víctimas tradicionales como las duales presentan una mayor ansiedad social y una menor autoestima que las cibervíctimas, y estas que las no víctimas. Víctimas duales y tradicionales no difieren en ansiedad social y autoestima. Los resultados obtenidos contribuyen a identificar patrones de victimización en la adolescencia, y su relación con la ansiedad social y la autoestima.

1. Introduction

Aggression between adolescents via electronic devices, instant messaging programs, and social networks (cyber-aggression) has been the object of growing interest in recent years (González-Moreno et al., 2020). Nowadays there is great social concern about this problem, because of its prevalence and effects (Machimbarrena et al., 2018). However, the nature of the construct, as distinct from traditional aggression, is still open to debate. Authors such as Olweus (2012) and Mehari et al. (2014), considered that these new forms of aggression were essentially no different to traditional forms, and should therefore not be studied in isolation. The underlying problem would be the same, except that it would happen in two different specific contexts (in-person and online). Both forms of victimization are positively correlated and share psychosocial predictors. Rather than being "new" victims, cyber-victims would generally be no different from those suffering from traditional aggression. It is, instead, a new form of aggression which usually overlaps traditional forms (physical, verbal, relational, etc.). In fact, according to authors like Olweus (2012) and Williford et al. (2018), most of the negative impact attributed to cyber-victimization should in reality be attributed to the overlap of traditional forms of aggression.

If an adolescent suffers from traditional aggression, and also from aggression via electronic devices, the latter would add little significant effect. The negative effects of cyber-victimization can only, therefore, be understood in a generally broader context of aggression, including traditional types. This is important, as it points the way towards the most effective prevention. It hints as to whether it is worth prioritizing specific programs for preventing aggression via electronic media (mainly focused on applications, Internet behaviour, and Internet safety) or whether more general programs for preventing aggression between adolescents would have a positive impact on the prevention of cyber-victimization even without specific elements aimed at this type of aggression. Previous studies suggest that programs aimed at reducing traditional aggression, despite not having specific elements about preventing online aggression, also have a positive effect on the prevention of cyber-victimization between adolescents (Gradinger et al., 2016; Salmivalli et al., 2011).

One argument in favour of this hypothesis, is the positive, significant relationship that is usually found between suffering from both types of victimization (online and offline). Some meta-analyses have found a fairly high correspondence between cyber and traditional victimization ($\dot{r}=.40$, Modecki et al., 2014; $\dot{r}=.43$, Gini et al., 2018), although there can be differences depending on age and the context of the sample (Cosma et al., 2020). However, co-occurrence of these two phenomena is not perfect, since being the victim of traditional aggression is generally more prevalent than being a cyber-victim (López-Castedo et al., 2018; Modecki et al., 2014; Sastre, 2016; Viau et al., 2020).

The possible co-occurrence, the overlap between being a victim of offline and online peer aggression in adolescence, has also been examined in studies that have attempted to identify types of victims according to the extent to which they suffer from the different types of aggression (online and offline). The table shown in Álvarez-García (2020) provides a summary of the main studies in this regard. There have been few studies to date, mostly from the USA, with heterogeneous results. The number of different types of victims varies between three and five, with four being the most common. These approaches generally include a type characterized by null or minimal victimization, one or more types characterized by traditional victimization, and one or more types characterized by dual (cyber- and traditional) victimization. The most common typology includes the following four: non-victims, cyber-victims, traditional victims, and dual victims (Beltrán-Catalán et al., 2018; Gini et al., 2019; Mindrila, 2019). "Mainly cyber-victim" is the type with the least consensus. In some studies, cyber-victimization is included in a category of dual or multiple victimization, and in some of these studies distinct levels of dual or multiple victimization are differentiated (Álvarez-García, 2020).

As indicated above, one problematic aspect of studying cyber-victimization in adolescents is identifying the extent to which its relationships with significant variables (risk factors or consequences) are due to the cyber-victimization or whether they can only be understood in the broader context of ordinary victimization, including traditional types. In this study, we focus specifically on social anxiety and self-esteem. Regarding social anxiety, there is a solid body of evidence about the positive relationship between social anxiety and traditional peer victimization in adolescence (Gómez-Ortiz et al., 2017; Pontillo et al.,

2019; Romera et al., 2016; Suárez-García et al., 2020). Some studies have concluded that social anxiety increased the likelihood of being a victim (Acquah et al., 2016; Pabian, &Vandebosch, 2016), others that being a victim increased the probability of having social anxiety (Calvete et al., 2018; Silberg et al., 2016; Van-den-Eijnden et al., 2014).

Studies looking at the relationship between adolescent cyber-victimization and social anxiety have also found a positive relationship between the two, noting that social anxiety is a risk factor for cyber-victimization, while there is less evidence that it is a consequence (Pabian & Vandebosch, 2016; Ruíz-Martín et al., 2019; Van-den-Eijnden et al., 2014). In this regard, some studies have found, in line with the hypothesis posed by Olweus (2012), that traditional (and more specifically, relational) victimization has a more negative impact on adolescent social anxiety than cyber-victimization (Landoll et al., 2015; Van-den-Eijnden et al., 2014); and that adolescents who are victims of both types of aggression do not generally present higher levels of social anxiety than those who are victims of only traditional violence (Cañas et al., 2020).

Regarding self-esteem, meta-analyses have shown that there is a reasonably solid body of evidence about its negative relationship with both traditional peer victimization (Tsaousis, 2016) and cyber-victimization (Chen et al., 2017; Kowalski et al., 2014). However, it is not clear which of the two types of victimization has a greater impact on self-esteem, nor the effect of the possible overlap between the two types of victimization on self-esteem. Previous research in Spain has shown that both victimization and cyber-victimization have negative effects on self-esteem, and that the effect is slightly weaker for cyber-victimization (Álvarez-García et al., 2019). Olweus (2012) found traditional victimization to significantly predict self-esteem, while additional cyber-victimization did not significantly contribute. In addition, recent meta-analyses of longitudinal studies have found results that depend on the type of victimization. Traditional victimization and self-esteem demonstrated a bidirectional causal relationship (Van-Geel et al., 2018). In contrast, there was no causal relationship between cyber-victimization and self-esteem (Marciano et al., 2020).

In light of the above, this study has two objectives. Firstly, to identify profiles of victimization in adolescence, depending on the levels of offline or online peer aggression suffered, as well as determining the prevalence of each victim type, in a sample of Spanish adolescents. Secondly, to analyse the association of the victimization profiles with adolescents' social anxiety and self-esteem. With regard to the first objective, we expect to find the victim typology most often found in previous studies (non-victims, cyber-victims, traditional victims and dual victims) (Beltrán-Catalán et al., 2018; Gini et al., 2019; Mindrila, 2019), with a similar prevalence to these studies for each type of victim.

With regard to the second objective, we expect that the greater the level of victimization, the greater the adolescents' social anxiety and the lower their self-esteem, and that traditional victimization will be more strongly related to both variables than cyber-victimization.

2. Material and methods

2.1. Participants

The sample was made up of 3120 adolescents (49.4% girls) aged between 12 and 18 years old (M=14.03; SD=1.40) from Asturias (Spain). They attended 19 schools, selected by stratified random sampling from the 145 state-funded secondary schools in Asturias in which Compulsory Secondary Education (CSE) is taught. State-funded schools make up 95.9% of the total number of schools in which CSE is taught in Asturias. To select the sample, we divided the population of schools according to their ownership (public or private-concerted) and selected in each stratum a number of schools proportional to the population.

In Spain, public schools are those in which both their management and their financing are entirely public, and private-concerted schools are those whose management is private, but their financing is partially public. As a result, we selected 11 public schools and 8 private-concerted schools, representing 13.1% of the total. The selected schools were mostly in urban areas with socioeconomically middle-class intake. All of the classes in the four years making up compulsory secondary education were evaluated in each school.

2.2. Measures

2.2.1. Traditional victimization at school

In order to determine how often the adolescents suffered from aggression in the physical school environment, we used the Offline School Victimization scale (Álvarez-García et al., 2015). This is a self-report comprised of six items: "Some of my classmates exclude me in games and activities at playtime", "My classmates avoid me when we have to do group activities in class", "My classmates make fun of me/laugh at me", "My classmates say bad things about me behind my back", "I have been insulted by a classmate to my face", and "A student at the school has hit me, either in school or outside the school grounds".

Responses were given on a Likert-type scale with four alternatives (from 1=never, to 4=always). This is a one-dimensional scale ($\chi^2_{[6]}$=19.87; p=.003; GFI=.998; TLI=.992; CFI=.997; RMSEA=.026 [.014, .040]; SRMR=.011), and invariant in relation to gender (configural: [$\chi^2_{[12]}$=27.02; p=.008; GFI=.997; TLI=.991; CFI=.996; RMSEA=.028; SRMR=.012]; metric: [$\chi^2_{[18]}$=62.50; p<.001; GFI=.994; TLI=.982; CFI=.989; RMSEA=.039; SRMR=.036]; scalar: [$\chi^2_{[23]}$=210.69; p<.001; GFI=.996; TLI=.941; CFI=.955; RMSEA=.070; SRMR=.047]), except at its strictest level (strict: [$\chi^2_{[32]}$=606.32; p<.001; GFI=.990; TLI=.871; CFI=.862; RMSEA=.104; SRMR=.129]). The overall score of the scale is the total of the items added together. Total scores range from 6 to 24. High scores reflect high levels of offline victimization at school. The internal consistency of the scale in this study's sample was moderate (Cronbach's α=.74; McDonald's ω=.75).

2.2.2. Cyber-victimization

We used the Cybervictimization Questionnaire for adolescents (CYVIC, Álvarez-García et al., 2017) to determine how often the adolescents had been victims of aggression via mobile phones or the Internet during the three months prior to the survey. It is made up of 19 items and gives scores for four types of cyber-victimization: Impersonation "I have been impersonated in Twitter, Tuenti..., creating a false user profile (photo, personal details...) with which I was insulted or ridiculed", Visual-Sexual Cyber-victimization "I have been pressured to do things that I didn't want to (whether or not I finally agreed to do them), threatening me with disseminating my intimate conversations or images", Verbal Cyber-victimization "Someone has made fun of me with offensive or insulting comments on social networks", and Online Exclusion "They agree to ignore me on the social networks", along with four additional Visual Cyber-victimization indicators related to being harmed or ridiculed through photographs or videos "They have forced me to do something humiliating, they have recorded it, and then disseminated it to ridicule me". It uses a Likert-type response format (from 1=never, to 4=always). The overall scale score is calculated by adding the scores for the component items together. Total scores range from 19 to 76. High scores indicate high levels of cyber-victimization. The internal consistency of the overall scale in the sample in our study was moderate (Cronbach's α=.79; McDonald's ω=.80).

2.2.3. Social anxiety

To determine the extent to which adolescents reported feeling inhibited or uncomfortable relating to others, especially those who are not close to them, we used a self-report scale with five items (Álvarez-García et al., 2015): "I'm shy and not very talkative, except with my friends", "I often feel embarrassed saying hello to people", "I get nervous when I have to be with a group of children that I don't know well", "I get uptight if I meet an acquaintance on the street", and "I find it difficult to get to know new people, to make friends, or to start talking to people that I don't know". It uses Likert-type responses with four alternatives (from 1=completely false, to 4=completely true).

This is a one-dimensional scale ($\chi^2_{[4]}$=36.36; p<.001; GFI=.996; TLI=.976; CFI=.990; RMSEA=.049 [.035, .064]; SRMR=.017), and invariant in relation to gender (configural: [$\chi^2_{[8]}$=39.96; p<.001; GFI=.995; TLI=.975; CFI=.990; RMSEA=.049; SRMR=.018]; metric: [χ^2[13]=59.35; p<.001; GFI=.993; TLI=.978; CFI=.985; RMSEA=.046; SRMR=.035]; scalar: [$\chi^2_{[17]}$=114.58; p<.001; GFI=.997; TLI=.964; CFI=.969; RMSEA=.059; SRMR=.037]; strict: [$\chi^2_{[23]}$=159.07; p<.001; GFI=.996; TLI=.963; CFI=.957; RMSEA=.060; SRMR=.054]). The overall scale score

is the total of the item scores. Total scores range from 5 to 20. High scores indicate high levels of shyness/social anxiety. The internal consistency of the scale in the sample in our study was moderate (Cronbach's α=.75; McDonald's ω=.75).

2.2.4. Self-esteem

To determine the adolescents' own assessments of themselves, we used a self-report scale with five items (Álvarez-García et al., 2015): "I am happy with my physical appearance", "I think I am a good person", "I can do things at least as well as most of my classmates", "I like how I am", and "I feel proud of what I do". The response was collected using a four-point Likert-type scale (from 1=completely false, to 4=completely true). This is a one-dimensional scale ($\chi^2_{[4]}$=35.44; p<.001; GFI=.996; TLI=.979; CFI=.992; RMSEA=.048 [.035, .064]; SRMR=.019), and invariant in relation to gender (configural: [$\chi^2_{[8]}$=32.65; p<.001; GFI=.996; TLI=.983; CFI=.993; RMSEA=.043; SRMR=.017]; metric: [$\chi^2_{[13]}$=61.32; p<.001; GFI=.992; TLI=.980; CFI=.987; RMSEA=.047; SRMR=.040]; scalar: [$\chi^2_{[17]}$=146.79; p<.001; GFI=.999; TLI=.959; CFI=.965; RMSEA=.068; SRMR=.048];strict: [$\chi^2_{[23]}$=243.21; p<.001; GFI=.998; TLI=.948; CFI=.941; RMSEA=.076; SRMR=.076]). The overall scale score is the total of the item scores. Total scores range from 5 to 20. High scores indicate high self-esteem. The internal consistency of the scale in the sample in our study was moderate (Cronbach's α=.74; McDonald's ω=.75).

2.3. Procedure

Once the measuring instruments and schools were selected, we sought permission from the administration at each school to administer the questionnaires. Each school management team was informed of the study objectives and procedures, its voluntary, anonymous nature, and the confidential treatment of the results. Once schools agreed to participate, we sought informed consent from the students' parents or guardians, as most of the students were minors. We obtained the consent from the parents or guardians of 76.3% of the students. Before completing the survey, the students were also informed that the study was anonymous and confidential, and that their participation was voluntary. The questionnaires were administered in paper format and it was carried out in the classroom by the research team. Data collection followed the ethical standards of the Ethics Committee of the University of Oviedo (Spain), and the Declaration of Helsinki.

2.4. Data analysis

The data were analysed in various phases. The first step was to examine the statistical properties of the observed variables. In addition to the usual descriptive analyses (Pearson correlations, M, SD, kurtosis, skewness), information is provided on the reliability of the measures (Cronbach's alpha and McDonald's omega), as well as on the construct validity and gender invariance. Confirmatory factor analysis was used for the study of construct validity. Information is provided on various types of invariance (configural, metric, scalar, and strict). The criteria for evaluating the quality of fit of the models were: Goodness of Fit Index (GFI), Tucker-Lewis Coefficient (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). There is evidence of a good fit when chi-square has a p>.05, GFI, AGFI and TLI $\geq$ .90, CFI$\geq$.95, and SRMR and RMSEA$\leq$.06.

The second step was the latent profile analysis. With the assistance of the Mplus 7.11 statistical package (Muthén & Muthén, 2012), we used traditional victimization and cyber-victimization scores to identify subgroups of victims or victimization profiles. As these two measures were not on the same scale due to their divergent number of items, we standardized them before the analysis (positive values indicate scores above the sample mean and negative values indicate scores below the mean). Given that there are discrepancies in previous studies about the relationship between gender and victimization (Garaigordobil et al., 2020; Gini et al., 2019; Wang et al., 2010), we included gender as a covariate in the estimation of the latent profiles. In order to determine which model best described the relationship between the two victimization measures from the finite set of models, we added successive latent classes to the target model (Nylund et al., 2007). As a rule, the best fitting model will use the optimum number of classes to describe the relationships between the two victimization variables (Galovan et al., 2018).

We used a range of criteria as the basis for selecting the best model. These included the formal Lo-Mendell-Rubin Maximum Likelihood Ratio Test (LMRT), the Parametric Bootstrap Likelihood Ratio Test (PBLRT), the Akaike Information Criterion (AIC), the Schwarz Bayesian Information Criterion (BIC), and the Sample Size Adjusted BIC (SSA-BIC), along with the entropy value and the size of each subgroup or class (Galovan et al., 2018; Nylund et al., 2007). Significant p-values associated with LMRT indicate significant improvement in model fit relative to the solution with one less class. Lower values of AIC, BIC, and SSA-BIC indicate better fit of the model. It is advisable that these criteria complement the information provided by the formal test of conditional fit. Similarly, it is important to note that small classes, although typically considered spurious –often associated with the extraction of too many classes– are occasionally profiles of interest (Hipp & Bauer, 2006).

In order to determine the classification accuracy of the selected model we have taken into account a posteriori probabilities and the entropy statistic. Entropy takes values between zero and one, and the closer it is to one, the more accurate the classification (values higher than .80 indicate good classification quality; Celeux & Soromenho, 1996). Another criterion we considered when selecting the model was the size of the differences, necessarily statistically significant, between the classes with regard to the variables that had been used to create them. We studied these differences via multivariate analysis of the variance, with the classes as the principal factor (obtained using SAVE=CPROBABILITIES in Mplus syntax) and the two victimization variables as dependent variables. Finally, in addition to the statistical indices above, as recommended (Nylund et al., 2007), in selecting the best model we also carefully considered the theoretical interpretability of the classes.

In the same model of Latent Profile Analysis with covariates, we used the AUXILIARY option with the e-setting to test the equivalence of the means of the two outcome variables (i.e., social anxiety and self-esteem) across profiles. If the overall test indicated significant between-class differences, we used posterior probability-based multiple imputations to conduct paired mean comparisons. We used the criteria established by Cohen (1988) to assess the size of the mean differences (small: d=0.20; medium: d=0.50; large: d=0.80). For all analyses, we used maximum likelihood estimation with robust standard error (MLR).

3. Results

3.1. Descriptive statistics

The descriptive statistics and Pearson correlations between the observed variables are shown at Table 1. The greater the victimization (traditional and online), the greater the anxiety and the lower the self-esteem. In the case of self-esteem, the correlation with traditional victimization is slight higher than the correlation with cybervictimization, and both are close to medium in size (r=-.237, d=0.49; r=-.198, d=0.41). However, for social anxiety, while its relationship with traditional victimization is close to medium in size (r=.209, d=0.43), the relationship with cyber-victimization is small (r=.096, d=0.19). There was no appreciable relationship between gender and either form of victimization, although there was a relationship with social anxiety and self-esteem.

Table 1. Descriptive statistics and Pearson's correlation matrix					
	1	**2**	**3**	**4**	**5**
1. Gender (1=boys; 2=girls)	–				
2. Traditional victimization	-.019	–			
3. Cyber-victimization	-.001	.445**	–		
4. Social anxiety	.166**	.209**	.096**	–	
5. Self-Esteem	-.126**	-.237**	-.198**	-.195**	–
M	-	8.17	21.66	11.03	16.61
SD	-	2.53	3.37	3.73	2.83
Skewness	0.03	1.91	2.70	0.30	-1.04
Kurtosis	-2.00	4.94	12.39	-0.62	1.21

Note. *p<.05; **p<.01.

3.2. Latent profile analysis

3.2.1. Selection of the best model

Three latent profile models were fitted. The results are shown in Table 2. Although the LMRT-test indicates that the four-class model is statistically no better than the three-class model, the other statistics suggested selecting the four-class model. The AIC, BIC, and SSA-BIC for the four-class model are all lower than the corresponding values for the three-class model. Besides, the entropy is greater in the four-class model, indicating that this model has a better quality than the three-class model. Equally important is the fact that at a theoretical level, there is more basis for a four-class model.

In addition, the two variables were important in differentiating the four profiles: cyber-victimization ($F_{(3,3116)}$=3888.209; p<.001; d=3.87) and traditional victimization ($F_{(3,3116)}$=1095.683; p<.001; d=2.05). All of the comparisons between classes in both variables were statistically significant at p <.001. In short, we selected the four-class model over the three-class model because it was statistically better, because it was theoretically valid, and because it demonstrated better quality than the three-class model for classifying the subjects in the classes. The probability of each subject being classified in their assigned class was excellent, both generally (.917) and for each class individually (class 1=.865; class 2=.974; class 3=.889; class 4=.937).

As noted above, the models were fitted using gender as a covariate. The data indicated that gender did not affect the model fit. More specifically, we found that the assignment of subjects to classes did not change with or without gender as a covariate (only one subject was assigned to a different class), and consequently entropy did not change either.

Table 2. Statistics of two, three, and four class latent model fitting			
	Two Classes	**Three Classes**	**Four Classes**
AIC	15972.10	15369.86	14907.36
BIC	16020.47	15442.41	15004.09
SSABIC	15995.05	15404.28	14953.25
Entropy	.926	.904	.917
LMRT-Test	1683.39	591.86	456.32
p	<.001	<.001	.148

Note. AIC=Akaike Information Criterion; BIC=Schwarz Bayesian Information Criterion; SSA-BIC=BIC adjusted for the sample size; LMRT-Test=Adjusted Lo-Mendell-Rubin maximum likelihood ratio test.

3.2.2. Description of the selected latent class model

The selected latent class model is made up of four profiles of victimization, depending on the levels of offline or online peer aggression suffered (Figure 1).

Figure 1. Graphical representation of victimization profiles
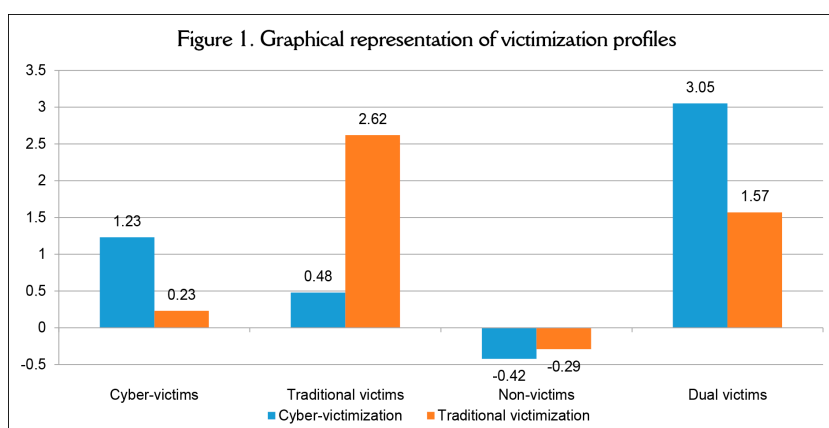
As is shown in Table 3, the largest victimization profile (77.76%) was composed of adolescents who had null or very low scores of any kind of victimization, and it was called "non-victims" (50.3% girls). The next largest group (13.49%) is composed of adolescents who, in general, had low scores of victimization, but that had suffered predominantly from cyber-victimization, so it is called "cyber-victims" (46.1% girls).

The third group (4.46%) had mainly suffered from traditional victimization, so it is called "traditional victims" (39.6% girls). The fourth and smallest group (4.29%) is "dual victims" (53% girls). It is made up of students who had suffered both kinds of victimization significantly over the sample mean.

Table 3. Means, standard errors, and confidence intervals of cyber-victimization and traditional victimization variables in each class					
	n (%)	Estimate	S.E.	LO5%	HI5%
Class 1:Cyber-victims	421 (13.49)				
Cyber-victimization		1.225	0.093	1.072	1.377
Trad. Victimization		0.227	0.050	0.145	0.310
Class 2: Traditional victims	139 (4.46)				
Cyber-victimization		0.477	0.285	0.008	0.946
Trad. Victimization		2.620	0.338	2.094	3.206
Class 3: Non-victims	2426 (77.76)				
Cyber-victimization		-0.424	0.015	-0.449	-0.399
Trad. Victimization		-0.289	0.024	-0.328	-0.249
Class 4: Dual victims	134 (4.29)				
Cyber-victimization		3.051	0.132	2.834	3.267
Trad. Victimization		1.572	0.327	1.034	2.111

Note. "n (%)" are the size of the classes and percentages. LO5% and HI5% are the confidence intervals.

3.3. Victimization profiles and health-related outcomes

Non-victims demonstrated the lowest levels of social anxiety and the highest levels of self-esteem. In contrast, traditional victims and dual victims demonstrated the highest levels of social anxiety and the lowest levels of self-esteem (Tables 4 and 5).

Table 4. Means and standard errors				
	Non-victims	Cyber-victims	Traditional victims	Dual victims
Social anxiety				
Mean	10.81	11.28	12.88	12.21
S.E.	0.08	0.20	0.36	0.36
Self-Esteem				
Mean	16.91	15.95	15.03	15.08
S.E.	0.06	0.15	0.32	0.32

In general terms, the data showed statistically significant differences between the profiles in both social anxiety ($\chi^2=53.847$; p<.001) and self-esteem ($\chi^2=84.288$; p<.001). Considering the multiple comparisons between classes, all the differences were statistically significant, with the exception of the comparison between traditional victims and dual victims in both variables (Table 5).

Table 5. Relationship between the profiles of victimization, social anxiety, and self-esteem (differences between classes in outcome variables)			
	χ^2	p	Cohen's d
Social Anxiety			
Overall Test	53.85	<.001	0.27
Cyber versus Traditional	15.51	<.001	0.34
Cyber versus Non-victims	4.40	.036	0.08
Cyber versus Dual	5.07	.024	0.19
Traditional versus Non-victims	34.91	<.001	0.24
Traditional versus Dual	1.79	.181	---
Non-victims versus Dual	14.85	<.001	0.15
Self-Esteem			
Overall Test	84.29	<.001	0.33
Cyber versus Traditional	6.81	.009	0.22
Cyber versus Non-victims	34.16	<.001	0.22
Cyber versus Dual	5.86	.015	0.21
Traditional versus Non-victims	35.91	<.001	0.24
Traditional versus Dual	0.01	.924	---
Non-victims versus Dual	31.93	<.001	0.23

4. Discussion and conclusions

The first objective of this work was to identify profiles of victimization in adolescence, depending on the levels of offline or online peer aggression suffered, as well as determining the prevalence of each victim type, in a sample of Spanish adolescents. We found, as previous meta-analyses have found (Modecki et al., 2014; Gini et al., 2018), a fairly high positive correlation between being a victim of traditional aggression and being a cyber-victim. The size of the correlation obtained in the present study was very similar to the average correlation obtained in these two meta-analyses. The typology of victimization profiles we found agree with the typology found by Beltrán-Catalán et al. (2018), Gini et al. (2019) and Mindrila (2019), which is what has been found most often in the few published studies on this topic (Álvarez-García, 2020). This typology distinguishes between four types of adolescents: non-victims, cyber-victims, traditional victims, and dual victims. Most of the studies we reviewed (Álvarez-García, 2020) distinguished between non-victims, traditional victims, and dual victims. However, there was less agreement on the category of "cyber-victims". Our results suggest the importance of considering adolescents who are mainly cyber-victims as a specific type of victims.

As in all of the typologies proposed in the studies we reviewed (Álvarez-García, 2020), in our study the most common profile by far was non-victims. The "dual victims" category had the fewest members, which is the same as in the majority of studies we reviewed which included this category. In our study, the percentage of adolescents suffering predominantly from cyber-victimization was larger than the percentage suffering predominantly from traditional victimization, which contradicts previously published results.

In previous studies where a cyber-victim category has been found, the percentage of students in that category has been significantly smaller (Beltrán-Catalán et al., 2018; Mindrila, 2019) or smaller but not significantly (Gini et al., 2019), than the percentage in traditional victim categories. It is difficult to accurately determine the reason for this disparity, due to the variety of studies in terms of methodology, indicators used, age range and context of the sample (Álvarez-García, 2020). However, a possible reason is that in the present study the adolescents grouped in the "mainly cyber-victimization" class present a less severe general level of victimization than those grouped in the "traditional victimization" class. Maybe that is why the "mainly cyber-victimization" group is more numerous. In the study by Gini et al. (2019), in which the difference in the size of both classes (cyber and traditional victimization) hardly exists, both groups are more similar in overall levels of victimization than in the present work.

Our second objective was to analyse the relationships between the victimization profiles we found, and social anxiety and self-esteem. With social anxiety, our results were consistent with our hypothesis, which was based on prior findings (Gómez-Ortiz et al., 2017; Landoll et al., 2015; Pabian & Vandebosch, 2016; Pontillo et al., 2019; Romera et al., 2016; Ruíz-Martín et al., 2019; Van-den-Eijnden et al., 2014): the greater the level of victimization, the greater the level of social anxiety, with a stronger relationship between social anxiety and traditional victimization than with cyber-victimization.

Our correlation analysis demonstrated that social anxiety was positively, statistically, significantly, associated both with traditional and cyber-victimization. The correlation was stronger with traditional victimization than with cyber-victimization. Analyses of the differences in social anxiety depending on the type of victimization suffered showed that non-victims exhibited the lowest levels of social anxiety. Students who were mainly cyber-victims demonstrated greater social anxiety than non-victims. Students who were mainly victims of traditional aggression demonstrated higher levels of social anxiety than those who were mainly cyber-victims, and therefore than non-victims as well.

Students who suffered from both traditional and cyber-aggression exhibited higher levels of social anxiety than those who were mainly cyber-victims, but there was no statistically significant difference in social anxiety between them and the victims of traditional aggression. This result, in addition to supporting results from previous studies (Gómez-Ortiz et al., 2017; Landoll et al., 2015; Pabian & Vandebosch, 2016; Pontillo et al., 2019; Romera et al., 2016; Ruíz-Martín et al., 2019; Van-den-Eijnden et al., 2014), is consistent with the hypothesis put forward by Olweus (2012), that often cyber-victimization appears linked to traditional victimization, and that in order to understand it, it should be analysed in a broader context of mistreatment, including face-to-face aggression. Our results about self-esteem were consistent with our starting hypothesis, which was based on the prior evidence (Álvarez-García et al., 2019; Chen et al.,

2017; Kowalski et al., 2014; Marciano et al., 2020; Tsaousis, 2016; Van-Geel et al., 2018). The greater the level of victimization adolescents suffer, the lower their self-esteem, and this relationship is stronger with traditional than with cyber-victimization.

Our correlation analysis showed that self-esteem was statistically significantly, negatively correlated to both traditional and cyber-victimization. The correlation was slightly stronger with traditional than with cyber-victimization. Analysis of the differences in self-esteem depending on the type of victimization adolescents suffered from showed that non-victims had the highest self-esteem. Adolescents who were mainly cyber-victims exhibited lower self-esteem than non-victims. Mainly traditional victims exhibited lower self-esteem than mainly cyber-victims, and thus also lower than the non-victims. Similar to social anxiety, adolescents suffering from both traditional and cyber-aggression exhibited lower self-esteem than those who were mainly cyber-victims, but they did not differ statistically significantly from traditional victims. This result, in addition to supporting results from previous studies (Álvarez-García et al., 2019; Chen et al., 2017; Kowalski et al., 2014; Marciano et al., 2020; Tsaousis, 2016; Van-Geel et al., 2018), is consistent with Olweus' (2012) hypothesis that often cyber-victimization appears linked to traditional victimization and to understand it, should be assessed in a broader context of mistreatment, including face-to-face aggression. In fact, Olweus (2012) found that being a traditional victim significantly predicted poor self-esteem, whereas being a cyber-victim did not contribute significantly.

Our study makes a contribution to this field. It is one of the few studies published at an international level to date using mixture modelling in an attempt to identify types of victims in adolescents depending on the extent to which they suffered from online or offline peer aggression. As far as we are aware, it is the first such study in Spain. The results have important theoretical and practical implications. From the theoretical perspective, the study contributes to the consideration of cyber-victimization as a construct in and of itself, which is nonetheless related to traditional victimization. To better understand its risk factors and consequences, it should be examined in the broader context of possible mistreatment, including face-to-face contexts.

From a practical standpoint, our results suggest that, firstly, it is important for early detection of peer aggression to be alert in educational and clinical contexts to students with social anxiety and low self-esteem, because of their higher risk of becoming a victim of peer aggression. Secondly, in terms of prevention and treatment, it is important to work on self-esteem and social interaction skills. Lastly, our results do not support the idea that it is sufficient to have general preventive programs against mistreatment among adolescents in order to prevent cyber-victimization. There is an overlap, and the attitudes, values, and skills that are worked on to prevent aggression in face-to-face contexts can have a positive effect on preventing aggression in virtual contexts (Gradinger et al., 2016; Salmivalli et al., 2011). Nevertheless, there are some adolescents who are mainly cyber-victims, and aggression via virtual contexts has some particular characteristics that mean it is advisable to work on it specifically (Del-Rey et al., 2018; Hinduja & Patchin, 2015).

Although this study does represent a contribution to the field, it is important to recognize some limitations. Firstly, the data were collected via self-reports, which can often produce response biases such as social desirability -although we attempted to minimize this during the process by ensuring the anonymity and confidentiality of results. Secondly, we used a large sample which was representative of the population it was taken from, but limited in age and geographical area. Any generalization of these results to other ages or other geographical areas should be done with caution. It would be advisable to replicate this study in other samples to examine the external validity of the results.

Funding Agency

References

Acquah, E., Topalli, P., Wilson, M., Junttila, N., & Niemi, P. (2016). Adolescent loneliness and social anxiety as predictors of bullying victimisation. *International Journal of Adolescence and Youth*, *21*(3), 320-331.

https://doi.org/10.1080/02673843.2015.1083449

Álvarez-García, D. (2020). Table "Studies which have attempted to identify types of victims depending on extent of suffering from offline and online peer aggression in adolescence". https://doi.org/10.6084/m9.figshare.12786470.v2

Álvarez-García, D., Barreiro-Collazo, A., & Núñez, J. (2017). Cyberaggression among adolescents: Prevalence and gender differences. *Comunicar*, 50, 89-97. https://doi.org/10.3916/c50-2017-08

Álvarez-García, D., Núñez, J., Dobarro, A., & Rodríguez, C. (2015). Risk factors associated with cybervictimization in adolescence. *International Journal of Clinical and Health Psychology*, 15(3), 226-235. https://doi.org/10.1016/j.ijchp.2015.03.002

Beltrán-Catalán, M., Zych, I., Ortega-Ruiz, R., & Llorent, V. (2018). Victimisation through bullying and cyberbullying: Emotional intelligence, severity of victimisation and technology use in different types of victims. *Psicothema*, 30(2), 183-188. https://doi.org/10.7334/psicothema2017.313

Calvete, E., Fernández-González, L., González-Cabrera, J., & Gámez-Guadix, M. (2018). Continued bullying victimization in adolescents: Maladaptive schemas as a mediational mechanism. *Journal of Youth and Adolescence*, 47(3), 650-660. https://doi.org/10.1007/s10964-017-0677-5

Cañas, E., Estévez, E., Martínez-Monteagudo, M., & Delgado, B. (2020). Emotional adjustment in victims and perpetrators of cyberbullying and traditional bullying. *Social Psychology of Education*, 23(4), 917-942. https://doi.org/10.1007/s11218-020-09565-z

Celeux, G., & Soromenho, G. (1996). An entropy criterion for assessing the number of clusters in a mixture model. *Journal of Classification*, 13(2), 195-212. https://doi.org/10.1007/bf01246098

Chen, L., Ho, S.S., & Lwin, M.O. (2017). A meta-analysis of factors predicting cyberbullying perpetration and victimization: From the social cognitive and media effects approach. *New Media & Society*, 19(8), 1194-1213. https://doi.org/10.1177/1461444816634037

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Erlbaum Associates. https://doi.org/10.1016/c2013-0-10517-x

Cosma, A., Walsh, S., Chester, K., Callaghan, M., Molcho, M., Craig, W., & Pickett, W. (2020). Bullying victimization: Time trends and the overlap between traditional and cyberbullying across countries in Europe and North America. *International Journal of Public Health*, 65(1), 75-85. https://doi.org/10.1007/s00038-019-01320-2

Del-Rey, R., Mora-Merchán, J., Casas, J., Ortega-Ruiz, R., & Elipe, P. (2018). 'Asegúrate' Program: Effects on cyber-aggression and its risk factors. *Comunicar*, 56, 39-48. https://doi.org/10.3916/c56-2018-04

Galovan, A., Drouin, M., & McDaniel, B. (2018). Sexting profiles in the United States and Canada: Implications for individual and relationship well-being. *Computers in Human Behavior*, 79, 19-29. https://doi.org/10.1016/j.chb.2017.10.017

Garaigordobil, M., Mollo-Torrico, J., Machimbarrena, J., & Páez, D. (2020). Cyberaggression in adolescents of Bolivia: Connection with psychopathological symptoms, adaptive and predictor variables. *International Journal of Environmental Research and Public Health*, 17(3), 1022-1022. https://doi.org/10.3390/ijerph17031022

Gini, G., Card, N., & Pozzoli, T. (2018). A meta-analysis of the differential relations of traditional and cyber-victimization with internalizing problems. *Aggressive Behavior*, 44(2), 185-198. https://doi.org/10.1002/ab.21742

Gini, G., Marino, C., Xie, J.Y., Pfetsch, J., & Pozzoli, T. (2019). Associations of traditional and peer cyber-victimization with adolescents' Internet use: A latent profile analysis. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(4). https://doi.org/10.5817/cp2019-4-1

Gómez-Ortiz, O., Roldán, R., Ortega-Ruiz, R., & García-López, L. (2018). Social anxiety and psychosocial adjustment in adolescents: Relation with peer victimization, self-esteem and emotion regulation. *Child Indicators Research*, 11(6), 1719-1736. https://doi.org/10.1007/s12187-017-9506-3

González-Moreno, M., Cuenca-Piqueras, C., & Fernández-Prados, J. (2020). Cyberbullying and education: State of the art and bibliometric analysis. In *InICIET 2020: Proceedings of the 2020 8th International Conference on Information and Education Technology* (pp. 191-195). ICIET. https://doi.org/10.1145/3395245.3396449

Gradinger, P., Yanagida, T., Strohmeier, D., & Spiel, C. (2016). Effectiveness and sustainability of the ViSC Social Competence Program to prevent cyberbullying and cyber-victimization: Class and individual level moderators. *Aggressive Behavior*, 42(2), 181-193. https://doi.org/10.1002/ab.21631

Hinduja, S., & Patchin, J.W. (2015). *Bullying beyond the schoolyard: preventing and responding to cyberbullying*. Thousand Oaks.

Hipp, J., & Bauer, D. (2006). Local solutions in the estimation of growth mixture models. *Psychological Methods*, 11(1), 36-53. https://doi.org/10.1037/1082-989x.11.1.36

Kowalski, R., Giumetti, G., Schroeder, A., & Lattanner, M. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, 140(4), 1073-1137. https://doi.org/10.1037/a0035618

Landoll, R., La-Greca, A., Lai, B., Chan, S., & Herge, W. (2015). Cyber victimization by peers: Prospective associations with adolescent social anxiety and depressive symptoms. *Journal of Adolescence*, 42, 77-86. https://doi.org/10.1016/j.adolescence.2015.04.002

López-Castedo, A., Álvarez García, D., Domínguez, J., & Álvarez, E. (2018). Expressions of school violence in adolescence. *Psicothema*, 30(4), 395-400. https://doi.org/10.7334/psicothema2018.130

Machimbarrena, J., Calvete, E., Fernández-González, L., Álvarez Bardón, A., Álvarez Fernández, L., & González-Cabrera, J. (2018). Internet Risks: An Overview of Victimization in Cyberbullying, Cyber Dating Abuse, Sexting, Online Grooming and Problematic Internet Use. *International Journal of Environmental Research and Public Health*, 15(11), 2471-2471. https://doi.org/10.3390/ijerph15112471

Marciano, L., Schulz, P., & Camerini, A. (2020). Cyberbullying perpetration and victimization in youth: A meta-analysis of longitudinal studies. *Journal of Computer-Mediated Communication*, 25(2), 163-181. https://doi.org/10.1093/jcmc/zmz031

Mehari, K., Farrell, A., & Le, A. (2014). Cyberbullying among adolescents: Measures in search of a construct. *Psychology of Violence*, *4*(4), 399-415. https://doi.org/10.1037/a0037521

Mindrila, D. (2019). Bullying and cyberbullying victimization and weapon carrying: A 3-step latent class analysis with a covariate and a distal outcome. *International Journal for Infonomics*, *12*(1), 1854-1861. https://doi.org/10.20533/iji.1742.4712.2019.0189

Modecki, K., Minchin, J., Harbaugh, A., Guerra, N., & Runions, K. (2014). Bullying prevalence across contexts: A meta-analysis measuring cyber and traditional bullying. *Journal of Adolescent Health*, *55*(5), 602-611. https://doi.org/10.1016/j.jadohealth.2014.06.007

Muthén, L.K., & Muthén, B.O. (2012). *Mplus user's guide*. Muthén & Muthén. https://bit.ly/3oonMFt

Nylund, K., Asparouhov, T., & Muthén, B. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*(4), 535-569. https://doi.org/10.1080/10705510701575396

Olweus, D. (2012). Cyberbullying: An overrated phenomenon? *European Journal of Developmental Psychology*, *9*(5), 520-538. https://doi.org/10.1080/17405629.2012.682358

Pabian, S., & Vandebosch, H. (2016). An investigation of short-term longitudinal associations between social anxiety and victimization and perpetration of traditional bullying and cyberbullying. *Journal of Youth and Adolescence*, *45*(2), 328-339. https://doi.org/10.1007/s10964-015-0259-3

Pontillo, M., Tata, M.C., Averna, R., Demaria, F., Gargiullo, P., Guerrera, S., Pucciarini, M., Santonastaso, O., & Vicari, S. (2019). Peer victimization and onset of social anxiety disorder in children and adolescents. *Brain Sciences, 9*(6), 132-132. https://doi.org/10.3390/brainsci9060132

Romera, E., Gómez-Ortiz, O., & Ortega-Ruiz, R. (2016). The mediating role of psychological adjustment between peer victimization and social adjustment in adolescence. *Frontiers in Psychology*, *7*, 1-9. https://doi.org/10.3389/fpsyg.2016.01749

Ruíz-Martín, A., Bono-Cabré, R., Magallón-Neri, E., & and (2019). Ciberacoso y ansiedad social en adolescentes: Una revisión sistemática. *Revista de Psicología Clínica con Niños y adolescentes*, *6*, 9-15. https://doi.org/10.21134/rpcna.2019.06.1.1

Salmivalli, C., Kärnä, A., & Poskiparta, E. (2011). Counteracting bullying in Finland: The KiVa program and its effects on different forms of being bullied. *International Journal of Behavioral Development*, *35*(5), 405-411. https://doi.org/10.1177/0165025411407457

Sastre, A. (2016). *Yo a eso no juego*. Save the Children. https://bit.ly/33LK0cB

Silberg, J.L., Copeland, W., Linker, J., Moore, A.A., Roberson-Nay, R., & York, T.P. (2016). Psychiatric outcomes of bullying victimization: A study of discordant monozygotic twins. *Psychological Medicine*, *46*(9), 1875-1883. https://doi.org/10.1017/s0033291716000362

Suárez-García, Z., Álvarez-García, D. & Rodríguez, C. (2020). Predictores de ser víctima de acoso escolar en Educación Primaria: Una revisión sistemática. *Revista de Psicología y Educación*, *15*(1), 1-1. https://doi.org/10.23923/rpye2020.01.182

Tsaousis, I. (2016). The relationship of self-esteem to bullying perpetration and peer victimization among schoolchildren and adolescents: A meta-analytic review. *Aggression and Violent Behavior*, *31*, 186-199. https://doi.org/10.1016/j.avb.2016.09.005

Van-den Eijnden, R., Vermulst, A., Van-Rooij, A., Scholte, R., & Van-de Mheen, D. (2014). The bidirectional relationships between online victimization and psychosocial problems in adolescents: A comparison with real-life victimization. *Journal of Youth and Adolescence*, *43*(5), 790-802. https://doi.org/10.1007/s10964-013-0003-9

Van-Geel, M., Goemans, A., Zwaanswijk, W., Gini, G., & Vedder, P. (2018). Does peer victimization predict low self-esteem, or does low self-esteem predict peer victimization? Meta-analyses on longitudinal studies. *Developmental Review*, *49*, 31-40. https://doi.org/10.1016/j.dr.2018.07.001

Viau, S.J., Denault, A.S., Dionne, G., Brendgen, M., Geoffroy, M.C., Côté, S., Larose, S., Vitaro, F., Tremblay, R.E., & Boivin, M. (2020). Joint trajectories of peer cyber and traditional victimization in adolescence: A look at risk factors. *The Journal of Early Adolescence*, *40*(7), 936-965. https://doi.org/10.1177/0272431619880339

Wang, J., Iannotti, R.J., Luk, J.W., & Nansel, T.R. (2010). Co-occurrence of victimization from five subtypes of bullying: Physical, verbal, social exclusion, spreading rumors, and cyber. *Journal of Pediatric Psychology*, *35*(10), 1103-1112. https://doi.org/10.1093/jpepsy/jsq048

Williford, A., Orsi, R., DePaolis, K.J., & Isen, D. (2018). Cyber and traditional peer victimization: Examining unique associations with children's internalizing difficulties. *Children and Youth Services Review*, *93*, 51-59. https://doi.org/10.1016/j.childyouth.2018.07.001

Cybergossip, cyberaggression, problematic Internet use and family communication
Cibercotilleo, ciberagresión, uso problemático de Internet y comunicación con la familia

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ABSTRACT
Research into risky online behaviour among children and adolescents is on the rise, with more studies being conducted into the factors which can influence this phenomenon, above all in relation to school and family life. In the latter sphere, one relevant factor is the degree of genuine trust children have in their parents when using the Internet. The main objective of this study is to verify the effects of child disclosure about cyberaggression, in addition to the mediating role of problematic Internet use and cybergossip, and the moderating role of gender and age. A total of 866 primary school children (53% girls) between 10 and 13 years old (M=11.21; SD=0.90) were surveyed using self-reporting. The data processing followed a moderated serial mediation model using "Process". The results revealed the effects of child disclosure about cyberaggression and the mediation of problematic Internet use and cybergossip. Unlike gender, age moderated the effects of the mediation model. The results highlight the need to foster a climate of trust and communication in the family environment to reduce involvement in risky online behaviour, in which children feel understood and supported by their parents, which in turn encourages open communication about Internet use.

RESUMEN
La investigación sobre ciberconductas de riesgo infantil y juvenil se abre paso con estudios sobre factores que puedan influir en estos fenómenos, entre los que se destacan los relacionados con la convivencia escolar y familiar. En esta última, es relevante el nivel de confianza espontánea del hijo hacia su progenitor en el uso Internet. El objetivo de este trabajo es comprobar el efecto de la revelación filial en la ciberagresión, así como el rol mediador del uso problemático de Internet y el cibercotilleo, y el rol moderador del sexo y la edad. Un total de 866 escolares de primaria (53% chicas) de entre 10 y 13 años (M=11,21; D.T.=0,90) fueron encuestados mediante el uso de autoinformes. El tratamiento de datos siguió un modelo de mediación serial moderada a través de «Process». Los resultados evidenciaron los efectos de la revelación filial sobre la ciberagresión, así como la mediación del uso problemático de Internet y el cibercotilleo. A diferencia del sexo, la edad moderó los efectos del modelo de mediación. Los resultados ponen de manifiesto la necesidad de establecer un clima de confianza y comunicación en el entorno familiar para disminuir la implicación en las ciberconductas de riesgo, donde los menores se sientan comprendidos y apoyados por los progenitores, facilitando la comunicación espontánea sobre el uso de Internet.

1. Introduction

Cyberaggression is a problem that affects a significant number of boys and girls worldwide at an increasingly younger age. Young cyberbullies engage in behaviour that harms their peers psychologically and morally, damaging social connections, which are such a key influence at these ages. Internet provides a different context from face-to-face bullying, although one partly feeds on the other, with even more damaging consequences. Cyberaggressors are given the chance to bully others anonymously (Dennehy et al., 2020), round the clock (24/7 attack), thus making the victim even more vulnerable to their attacks and instilling in them a self-learned helplessness and psychological maladjustment (Zych et al., 2019). The publication of embarrassing photos, hacking the identity of an individual on social media, sharing intimate personal details or images, the threats of revealing private information, insults or spreading rumours through digital devices are all typical of the aggressive behaviour which is facilitated by communication technology and its all-pervasive digital software (Livingstone & Smith, 2014).

A recent study in Spanish schoolchildren between 11 and 12 years old revealed a rate of cyberaggression of about 6.3% (Garmendia et al., 2019). Compared with international figures, it should be noted that the figures for prevalence in Spain are lower than those found in other European countries (Sorrentino et al., 2019), or between Europe and America (Herrera-López et al., 2017; Smith et al., 2019). As well as descriptive studies, more research is needed to further our knowledge of the causal, or at least correlational, factors. The existing research has focused mainly on personal factors and factors related to the school context and the quality of coexistence, with less attention focused on the family context and its differential factors (Álvarez-García et al., 2019).

Some studies in this field have pointed to the key role of intra-family communication, and particularly child disclosure, as one of the differential elements in the quality of family life. The information which sons and daughters disclose to their parents, which is understood as an indirect form of parental recognition and control (Kerr et al., 2012), has been shown to reduce involvement in cyberaggressive behaviour (Buelga et al., 2017). We now need to go one step further and analyse the factors that can help us understand how child disclosure can influence involvement in cyberaggression. To achieve this, we analysed the mediating role of problematic Internet use and cybergossip, whose link with cyberaggression has previously been established (Romera et al., 2018).

Most of the research work at this level has focused on adolescents, among whom the use of digital devices is widespread (Wang et al., 2016), although they begin using them much earlier (Smahel et al., 2020): hence the need to research the final years of primary school.

1.1. Child disclosure and cyberaggression

The influence of the family context on children's Internet behaviour has focused mainly on studying the norms of control and supervision of the use of information and communication technologies (ICTs). These studies show that parental control which imposes strict limits on children's activities and continuously demands information about what they are doing is in fact an ineffective strategy for reducing risky behaviour in adolescence, including cyberaggression (Baldry et al., 2019; Sasson & Mesch, 2014). In particular, studies on the forms of parental communication used to control their children's online behaviour indicate that attempts to obtain information through direct requests and questions and a certain level of intrusion is associated with higher levels of cyberaggression (Shapka & Law, 2013).

In contrast, the creation of a positive, trusting relationship with both parents leads to better social adjustment and well-being in their children, and acts as a protective factor, especially if child disclosure is encouraged, by which the family knows what the children are doing because the children tell them, without the need for parental control (Machimbarrena et al., 2019). Here, a number of studies have highlighted the fact that the risk of involvement in cyberaggression decreases with the use of parental strategies based on communication and trust (Buelga et al., 2017).

1.2. Problematic Internet use and cybergossip as potential mediators

Over 24% of young people use their digital devices on a daily basis to communicate with friends on social media, and over half of these connect several times a day (Areepattamannil & Khine, 2017).

However, it constitutes problematic Internet use when it becomes compulsive and produces cognitive concern and a deterioration of intrapersonal and interpersonal relations (Caplan, 2010) and stronger symptoms of depression (Lozano-Blasco & Cortés-Pascual, 2020). Although it has been noted that personal factors can influence this excessive use of technology, other studies indicate that the family plays a key role in preventing and reducing it (Garmendia et al., 2019; Sela et al., 2020). Various studies have revealed how parental mediation, which is understood as how parents manage the relationship between their children and the media, is a major factor in young people's Internet use (Bartau-Rojas et al., 2018). Studies such as Saunders and Varma (2016) show that an inductive or instructive parenting style favours less intensive Internet use and that young people exposed to fewer hours on Internet have higher rates of parental support and communication (Tur-Porcar et al., 2019). The recent meta-analysis by Chen and Shi (2019) argues that, although restrictive mediation is more effective in reducing the amount of time children spend online, active parental mediation and joint use, are more effective in reducing the incidence of online risks.

In addition, cyberaggression studies have highlighted that the mere fact of spending more time online and making excessive and frequent use of Internet is considered a risk factor that could lead to negative effects (Baldry et al., 2019). In addition, Spanish studies have indicated that problematic Internet use is linked to cyberaggression (Cerezo et al., 2016).

Excessive Internet use seems to stimulate or exaggerate tendencies in social communication which exist in all cultures, such as online gossip, making it available to a wider audience (Subrahmanyam et al., 2008). Cybergossip is a type of online behaviour which involves sharing comments (positive, negative or neutral) among a group of two or more people about another person who is not present.

Although some research has identified this type of behaviour as a kind of indirect aggression, the two are different, in that in cyberaggression there is a clear intention to do harm that does not necessarily exist in cybergossip. In fact, it has also been recognised as having the function of lending the group greater cohesion and improving interpersonal relationships (Foster, 2004). This means that cybergossip and cyberaggression need to be studied in a differentiated way and with instruments that adjust to the nature of their respective online behaviour (Romera et al., 2018). It does not follow, however, that the practice of cybergossip is completely devoid of risky online behaviour. Although there has been little research into the relationship between cybergossip and other risky online behaviour, recent studies have shown that cybergossip can increase involvement in cyberaggression (Kisfalusi et al., 2019). In the virtual context, it is more difficult for the sender of the comments to convey their exact communicative intention and for the receiver to interpret it, and this could lead to misunderstandings and, therefore, risky online behaviour such as cyberaggression.

1.3. The present study

Previous research has shown not only the negative consequences associated with being involved in cyberaggression, an immoral practice in which a large number of adolescents, boys and girls alike, become involved at an increasingly early age, but also the important role of the family in its prevention. However, further research is needed looking into the family context in the development of this kind of online behaviour performed by children and adolescents. Not only is it important to identify what family styles and strategies are most effective in preventing online bullying, but also to explore how they can promote online behaviour that can help reduce involvement in risky online behaviour and, therefore, foster positive online coexistence. In this context, the present study aims to examine the mediating effect of problematic Internet use and cybergossip between child disclosure and involvement in cyberaggression.

Because a large number of studies have highlighted which parental communication strategies, mainly those that enhance child disclosure, reduce the risk of involvement in aggressive behaviour (Law et al., 2010), we expected to find that child disclosure about online behaviour reduced cyberaggression (Hypothesis 1). Most previous work has focused on the effects of this relationship, albeit without taking into account possible mediators. We also expected to find that problematic Internet use and cybergossip mediated the relationship between child disclosure and cyberaggression (Hypothesis 2). Due to the fact that boys tend to be more involved in risky online behaviour than girls throughout adolescence, and that child disclosure is more common among girls and during childhood (Arpaci et al., 2020; Smahel et al. al.,

2020), we expected the effects of child disclosure on risky online behaviour to be lower in late childhood (Hypothesis 3a) and in girls (Hypothesis 3b), compared to early adolescents and boys.

2. Materials and methods

2.1. Participants

The incidental sample consisted of 866 schoolchildren (53% girls), from six state primary schools (58%) and subsidized schools (42%), in both rural (36%) and urban (64%) areas in the provinces of Córdoba and Jaén (Spain). The schools were selected through non-probability sampling for accessibility (Singleton & Straits, 2004). The children's ages ranged from 10 to 13 years old (M=11.21; S.D.=0.90), with a distribution by primary school year as follows: 28.8% in 4th year (n=249), 28.9% in 5th year (n=250) and 42.3% in 6th year (n=366).

2.2. Instruments

Cyberaggression was assessed using 8 items on a five-point Likert-scale ranging from 0=never, 1=once or twice, 2=once or twice a month, 3=about once a week, to 4=more than once a week. Examples of the items for cyberaggression included: "I posted embarrassing videos or pictures of someone online" or "I spread rumours about someone on the Internet" in the last two months. This scale was part of an adaptation for primary school of the European Cyberbullying Intervention Project Questionnaire, ECIPQ (Del-Rey et al., 2015), consisting of two dimensions, cybervictimization and cyberaggression. We used only the second dimension for this study, taking the mean scores of the items, with higher values denoting a higher frequency of being involved in cyberaggression. For this research, the validity indices were optimal: χ^2 S-B=56.4149; gl=20; <.001; NNFI=.98; CFI=.98; RMSEA=.04; SRMR=.05, and the reliability index was good for the dimension of cyberaggression, =.74.

Child disclosure was measured with four items about how often the children told their parents about their online activities, taken from the adaptation by Law et al. (2010) on Stattin and Kerr's Parenting Questionnaire (Stattin & Kerr, 2000). An ad hoc simple five-point Likert-type scale was used, ranging from "never" to "always". The following items were used: "I tell my parents when I open a new account on social media", "I tell my parents when I chat to new people on social media/WhatsApp", "I tell my parents the content of the messages I send or receive through social media/WhatsApp" and "I tell my parents before revealing information about myself to other people through social media/WhatsApp". Optimal indices were obtained for reliability (ω=.83) and validity: χ^2 S-B=17.7493; gl=2; <.001; NNFI=.98; CFI=.99; RMSEA=.06; SRMR=.02.

Problematic Internet use was measured using the Internet-Related Experiences Questionnaire scale (Beranuy et al., 2009), which uses a 10-item Likert scale with 4 points of frequency, from "never" to "quite a lot". The items included the following: "I prefer to talk to my friends through social media/WhatsApp rather than in person", "I feel anxious when I cannot connect to social media/WhatsApp". A unidimensional distribution of the items was taken into account and optimal values were obtained with the study sample for reliability (ω=.78) and validity: χ^2 S-B=51.3417; gl=35; <.001; NNFI=.99; CFI=.99; RMSEA=.02; SRMR=.03.

Cybergossip was measured using the Cybergossip Questionnaire (Romera et al., 2018). This is a one-dimensional survey consisting of nine items measured on a Likert scale with values from 0 (never) to 4 (always). The items included: "I tell my friends on social networks or WhatsApp about things I hear about that happen to others", "I talk about others on social networks or WhatsApp because it makes me feel closer to my group of friends". Optimal indices were obtained for the study sample for reliability (ω=.80) and validity, χ^2 S-B=100.7370; gl=27; <.001; NNFI=.96; CFI=.97; RMSEA=.05; SRMR=.05.

2.3. Procedure

The school management teams at the different schools were contacted to inform them about the aims of the study. Those schools which expressed interest received detailed information on the data collection procedure. Written consent was obtained from the students' families and the participants gave their verbal consent. The study complied with the Declaration of Helsinki on confidentiality, privacy and informed

consent, and was approved by the Ethical Committee for Bioethics and Biosafety of the University of Córdoba.

The questionnaires were administered individually on paper in the students' classroom. The children were informed that the test was voluntary and anonymous. Data collection was done by previously trained researchers, who informed the children about the collection procedure and answered any questions they had about how to complete the questionnaire. The teachers in charge of the class were absent during the process. Response time ranged from 15 to 20 minutes. The data was collected in 2017.

2.4. Data analysis

Due to the skewness shown by the variables of cybergossip and cyberaggression, both were subjected to square root transformation, following the recommendations by Tabachnick and Fidell (2007). All future references refer to these transformed variables.

The preliminary analyses were performed using mean and standard deviation, together with the Spearman correlation coefficient for each of the study factors which were to be verified in the theoretical model.

Similarly, Students' t test was performed to contrast the existence of differences by gender and age (late childhood=10-11 years old; early adolescence=12-13 years old), considering Cohen's d to control the effect size. These analyses were performed using the IBM SPSS Statistics 20 statistical package.

Finally, a serial mediation model was performed using "Process" v3.4 (Hayes, 2013) (Model 6) to evaluate the mediating effect of problematic Internet use (first mediator) and cybergossip (second mediator) in the relationship between child disclosure (independent variable) and cyberaggression (dependent variable). The moderation effects were analysed using Model 92, in order to evaluate whether gender and age influenced the associations between the study variables. "Process" is a macro used in SPSS which employs least squares regression to estimate the importance and size of direct and indirect effects in mediation models. "Process" performs better than the traditional causal step approach (both in terms of statistical power and detecting type I error). The indirect effects were inferred using the Bootstrapping method, after generating an empirical representation of the sample distribution of indirect effects. Bootstrapping is suitable for linear hypotheses where the variables have a non-normal distribution (Chernick, 2008), as was the case in the present study. In the mediation model, the total effect denoted the basic relationship between child disclosure and cyberaggression. The relationship between the indirect effect and the total effect (P_M) shows the measurement of the mediation effect (Wen & Fan, 2015). All the variables were standardized before the analyses to facilitate the interpretation of the results.

3. Results

Table 1 shows the descriptive analyses of the study variables. Boys and early adolescents showed a greater involvement in cyberaggression and problematic Internet use. Early adolescents also showed greater use of cybergossip. Girls and late childhood participants showed higher levels of child disclosure. The effect size was low-moderate. A positive relationship was observed between the variables of cyberaggression, cybergossip and problematic Internet use, with scores ranging between .39 and .55. Child disclosure negatively correlated with all the study variables (Table 1).

Table 1. Correlations, descriptive statistics and differences by gender and age													
				Differences by gender					Differences by age				
Variables	Correlations			Boys		Girls		Student-t		Late childhood		Early adolescence		Student-t	
	1	2	3	M	SD	M	SD	t[1]	d	M	SD	M	SD	t[2]	d
1. CA	-			.29	.35	.23	.28	2.51*	.17	.20	.29	.33	.33	-6.17***	.42
2. CG	.53	-		.47	.40	.45	.38	.34	-	.39	.36	.57	.41	-7.00***	.49
3. PIU	.35	.47	-	.84	.74	.66	.61	4.30***	.29	.67	.66	.85	.69	-3.46***	.24
4. CD	-.25	-.24	-.24	2.26	1.36	2.68	1.25	-4.69***	.32	2.59	1.35	2.35	1.27	2.63***	.18

Key. M=mean; SD=Standard Deviation; t=Student's t; d=Cohen's d; CA=Cyberaggression; CC=Cybergossip; PIU=Problematic Internet Use; CD=Child disclosure; *p<.05; **p<.01; ***p<.001. [1] 1=Boys; 2=Girls. [2] 1=Late childhood; 2=Early adolescence.

A serial mediation analysis was carried out with 5,000 bootstrap samples. Table 2 shows the coefficients of the mediation model. The total effect of child disclosure on cyberaggression was significant: $\beta=-.27$, t=-8.15, <.001. We then analysed the models of the mediating variables, problematic Internet use and cybergossip, and of the dependent variable, cyberaggression. Child disclosure was significantly associated with problematic internet use and cybergossip. Problematic internet use was significantly associated with cybergossip and cyberaggression. Cybergossip was also significantly associated with cyberaggression. After controlling for the effects of mediators, the direct effect of child disclosure on cyberaggression remained significant. The bootstrap procedure was used to evaluate the indirect effect and the confidence intervals (CI). An indirect effect was significant if the CI did not include the value 0. In addition, a significant indirect effect was obtained for the Child disclosure → Problematic Internet use → Cyberaggression path, $\beta=-.04$, 95% CI [-.06, -.02], $P_m=.14$. The Child disclosure → Cybergossip → Cyberaggression path produced a significant indirect effect, $\beta=-.05$, 95% CI [-.09, -.02], $P_m=.20$. Finally, the Child disclosure → Problematic Internet use → Cybergossip → Cyberaggression path showed a significant indirect effect, $\beta=-.15$, 95% CI [-.19, -.10], $P_m=.55$. Thus, problematic internet use and cybergossip were shown to have a partial mediating role in the effect of child disclosure on cyberaggression.

Table 2. Serial mediation between child disclosure and cyberaggression					
Predictors	**Problematic Internet use**		**Cybergossip**		**Cyberaggression**	
	β	t	β	t	β	t
Child disclosure	-.26***	-8.04	-.12**	-3.89	-.12***	-4.19
Problematic Internet use			.45***	14.77	.14***	4.45
Cybergossip					.45***	14.03
R²	.07***		.25***		.34***	
F	(1, 857) 64.68		(2, 856) 141.77		(3, 855) 145.11	

Key. *p<.05; **p<.01; ***p<.001.

The moderation results indicate that there were no statistically significant differences between boys and girls in the associations between variables (ps>.05). Age proved to be a determining variable in the effects of child disclosure on problematic Internet use: ß=-.20, t=-2,95 <.01. The effects were significantly greater in early adolescence in comparison to late childhood (See Figure 1).

Figure 1. Moderating role of age in the effects of child disclosure on problematic Internet use
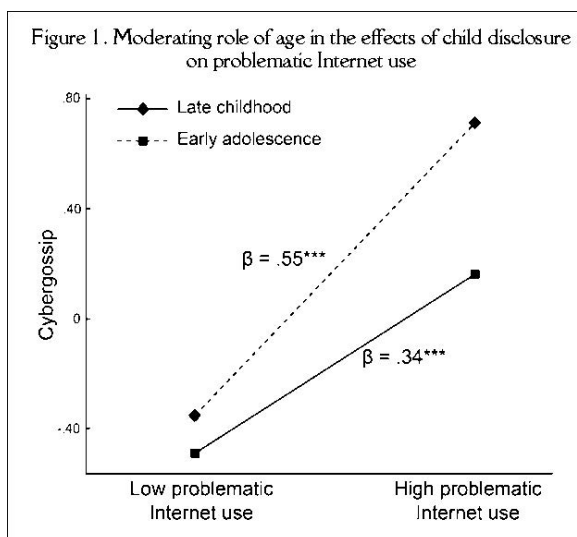
Age was found to influence the effects of problematic Internet use on cybergossip: $\beta=.21$, t= .51, p<.001. These effects were significantly greater in early adolescence in comparison to late childhood (Figure 2). Indirect effects show how the Child disclosure → Problematic Internet Use → Cyberaggression path was significant in early adolescents, $\beta_{Early-adolescence}= .07$, 95% CI [-.12, -.03], but not in late childhood, $\beta_{Late\ childhood}=-0.02$, 95% CI [-.04, .00]. As regards the Child disclosure → Cybergossip → Cyberaggression path, there were no significant differences between the two groups, $\beta_{Early\ adolescence\ -\ late\ childhood}=.00$, 95% CI [-.06, .06]. Finally, as for the Child disclosure →

Problematic Internet use → Cybergossip → Cyberaggression path, early adolescents showed statistically greater effects, $\beta_{Early\ adolescence}$=-.09, 95% CI [-.13, -.06], $\beta_{Late\ childhood}$=-.02, 95% CI [-.04, -.01], $\beta_{Early\ adolescence\ -\ late\ childhood}$=-.06, 95% CI [-.11, -.03].

Figure 2. Moderating role of age in the effects of problematic Internet use on cybergossip
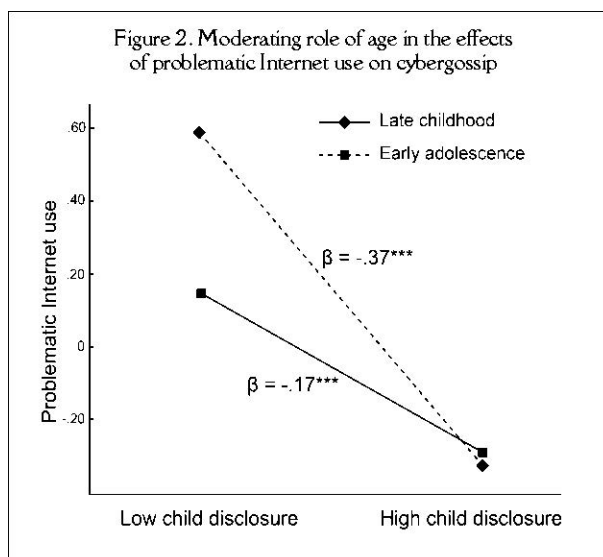
4. Discussion and conclusions

The aim of this research was to advance our scientific knowledge about the cyberaggression phenomenon, which occurs in the digital world shared by boys and girls and which has its beginnings in the last years of primary education. The problem was addressed by looking at the relationship of cyberaggression with the possible risk and protection factors present in school and family settings. As mentioned in Hypothesis 1, we expected the results to indicate that establishing family relationships based on communication and trust reduces the risk of being involved in cyberaggression. Although the protective effect of child disclosure has already been recognized in previous research (Buelga et al., 2017), it remains to be seen how this relationship is enhanced, in particular, by finding out what types of online behaviour can mediate the effect of this communication on cyberaggression. To achieve this, we formulated and examined a mediation model based on the integration of problematic Internet use and cybergossip, two types of online behaviour whose relationship with cyberaggression has been demonstrated (Cerezo et al., 2016; Kisfalusi et al., 2019).

This study enables us to advance in the identification of certain online activities that can potentially mediate the relationship between child disclosure and cyberaggression: problematic Internet use and cybergossip. These results suggest that both forms of online behaviour mediate the effects of such communication on cyberaggression (Hypothesis 2). Previous studies have shown that a greater online presence increases exposure to risks such as cyberaggression (Cerezo et al., 2016; Baldry et al., 2019), and in turn, that child disclosure reduces problematic Internet use (Chen & Shi, 2019). Likewise, it has been shown how making evaluative comments about other people on Internet increases the risk of cyberaggression (Romera et al., 2018). The reason for this is that cybergossip is behaviour which is developed in a group and clearly fulfills a function of enhancing group cohesion. The evaluative nature of the comments shared in that group not only affects the behaviour of its members, but also serves as a stimulus to boost the kind of behaviour which is valued within the peer group. By posting messages about others, these boys and girls normalise hurtful behaviour in order to maintain their social position and status within the group. This is why it is so important to address this kind of online behaviour, because, although it is not initially intended to do any harm, it is susceptible to misunderstandings and therefore increases the risk of engaging in cyberaggression behaviour. The relationship between parental educational practices and cybergossip has not yet been explored, so this study represents an advance by stressing the need for parents

to talk with their children about their online activity: not just their individual behaviour, but the conduct and attitudes they assume as part of their peer group, from which they learn their social conduct. Helping them to interpret the content of messages and understand the emotional nuances behind them, while learning not to instinctively assign hostile intentions to messages, are some of the key areas to work on, and this is especially vital at the age when children begin to maintain interpersonal relationships online. The findings for mediation suggest that child disclosure about children's online behaviour can serve as a protective factor against involvement in cyberaggression by reducing inappropriate Internet use and involvement in cybergossip, which are factors that also influence cyberaggression.

As was expected, the moderation results show that late childhood is the key time for implementing educational strategies aimed at promoting appropriate Internet use through open family communication. It has been observed how, mainly in early adolescence, high levels of child disclosure are related to low levels of problematic Internet use, just as more problematic Internet use is associated with greater involvement in cybergossip (Hypothesis 3a). The fact that these relationships are strengthened in early adolescence highlights the transition to the adolescent stage as a key evolutionary period to promote safe online use, as well as underlining the need to pay attention at these vital, transformative ages to the most important variables that can reduce problems of cyberaggression, which tend to increase considerably during adolescence (Smahel et al., 2020). In contrast, gender did not moderate the associations between the study variables (Hypothesis 3b). This suggests that, even though girls engage in more child disclosure and are less commonly involved in risky online behaviour, being a boy or a girl does not increase the probability that problematic Internet use or cybergossip is associated with cyberaggression. These results coincide with previous studies which reveal that gender is not a differentiating variable in the effects of parental communication on Internet use (Huang et al., 2019).

A number of limitations must also be taken into account in this study. First of all, although the sample is relatively large, it comes from one geographical region, so these relationships would need to be explored with participants from other regions and cultures in order to be able to generalise the results. In addition, the study includes measurements taken on one single occasion, so that causal relationships between the study variables cannot be established. In addition, although the child disclosure scale explores certain types of behaviour shared with families, it would be interesting to investigate the reasons that encourage children to talk about their online behaviour, as well as how adults respond to this information. Another limiting factor is the type of instrument used, self-report scales, not only because they are associated with desirability, but also because, due to the age of the children taking part, some difficulties may be encountered in the reading comprehension of the items. Further visual aids and qualitative studies could be used to support the reliability of the results obtained, and an analysis of the family context (education, socio-economic level or parenting strategies) would help us to understand better the established relationships. Further research could apply a longitudinal design to allow us to explore the causal nature of the study variables. We need to delve deeper, too, into the role of the peer group in online behaviour, following developmental studies which highlight the influence of social media on individual social behaviour. Similarly, it would be of interest to explore cultural differences in the links between parental educational practices and the prevention of online risks (Shapka & Law, 2013).

Despite these limitations, this is the first study to examine the mediating relationship between problematic Internet use and cybergossip in the relationship between child disclosure about children's and adolescents' online behaviour and cyberaggression. The results we present here constitute a significant step forward for research in this line, as well as providing guidance for the design of cyberaggression prevention programs. They also highlight the importance of raising awareness in the family context in favour of building a positive online coexistence that fosters communication and trust, which facilitate and encourage children and adolescents to share their experiences on the social media with their parents, whose role it is to help them reflect, experience emotions and make moral judgements. It is therefore vital that families are involved, so that children can learn to manage their online relationships well. Not only is it a question of families worrying about how to avoid cyberaggression, but they should also be involved in building a positive online coexistence, striving to make the use of Internet problem-free and to ensure that the interactions and group dynamics set up do not result in the bullying of others. These results can

also provide guidance for designing cyberaggression prevention programs, which would require training for families to help them manage the relationships with their children about their Internet use, and to teach them about the different aspects of online behaviour which may constitute a risk.
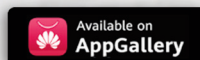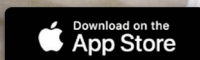
Funding Agency

References

Álvarez García, D., Núñez, J., González-Castro, P., Rodríguez, C., & Cerezo, R. (2019). The effect of parental control on cyber-cictimization in adolescence: The mediating role of impulsivity and high-risk behaviors. *Frontiers in Psychology*, *10*, 1-7. https://doi.org/10.3389/fpsyg.2019.01159

Areepattamannil, S., & Khine, M. (2017). Early adolescents' use of information and communication technologies (ICTs) for social communication in 20 countries: Examining the roles of ICT-related behavioral and motivational characteristics. *Computers in Human Behavior*, *73*, 263-272. https://doi.org/10.1016/j.chb.2017.03.058

Arpaci, I., Abdeljawad, T., Balo lu, M., Kesici, ., & Mahariq, I. (2020). Mediating effect of Internet addiction on the relationship between individualism and cyberbullying: Cross-sectional questionnaire study. *Journal of Medical Internet Research*, *22*(5), e16210-e16210. https://doi.org/10.2196/16210

Baldry, A., Sorrentino, A., & Farrington, D. (2019). Cyberbullying and cybervictimization versus parental supervision, monitoring and control of adolescents' online activities. *Children and Youth Services Review*, *96*, 302-307. https://doi.org/10.1016/j.childyouth.2018.11.058

Bartau-Rojas, I., Aierbe-Barandiaran, A., & Oregui-González, E. (2018). Parental mediation of the Internet use of Primary students: Beliefs, strategies and difficulties. [Mediación parental del uso de Internet en el alumnado de Primaria: creencias, estrategias y dificultades]. *Comunicar*, *54*, 71-79. https://doi.org/10.3916/c54-2018-07

Beranuy, M., Chamarro, A., Graner, C., & Sánchez, X. (2009). Validación de dos escalas breves para evaluar la adicción a Internet y el abuso del móvil. *Psicothema*, *21*, 480-485.

Buelga, S., Martínez-Ferrer, B., & Cava, M. (2017). Differences in family climate and family communication among cyberbullies, cybervictims, and cyber bully-victims in adolescents. *Computers in Human Behavior*, *76*, 164-173. https://doi.org/10.1016/j.chb.2017.07.017

Caplan, S.E. (2010). Theory and measurement of generalized problematic Internet use: A two-step approach. *Computers in Human Behavior*, *26*(5), 1089-1097. https://doi.org/10.1016/j.chb.2010.03.012

Cerezo, F., Arnaiz, P., Giménez, A.M., & Maquilón, J.J. (2016). Online addiction behaviors and cyberbullying among adolescents. *Anales de Psicologia*, *32*(3), 761-769. https://doi.org/10.6018/analesps.32.3.217461

Chen, L., & Shi, J. (2019). Reducing harm from media: A meta-analysis of parental mediation. *Journalism & Mass Communication Quarterly*, *96*(1), 173-193. https://doi.org/10.1177/1077699018754908

Chernick, M. (2008). *Bootstrap methods: A guide for practitioners and researchers*. Wiley. https://doi.org/10.1002/9780470192573

Del-Rey, R., Casas, J., Ortega-Ruiz, R., Schultze-Krumbholz, A., Scheithauer, H., Smith, P., Thompson, F., Barkoukis, V., Tsorbatzoudis, H., Brighi, A., Guarini, A., Py alski, J., & Plichta, P. (2015). Structural validation and cross-cultural robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behavior*, *50*, 141-147. https://doi.org/10.1016/j.chb.2015.03.065

Dennehy, R., Meaney, S., Walsh, K.A., Sinnott, C., Cronin, M., & Arensman, E. (2020). Young people's conceptualizations of the nature of cyberbullying: A systematic review and synthesis of qualitative research. *Aggression and Violent Behavior*, *51*, 101379-101379. https://doi.org/10.1016/j.avb.2020.101379

Foster, E. (2004). Research on gossip: Taxonomy, methods, and future directions. *Review of General Psychology*, *8*(2), 78-99. https://doi.org/10.1037/1089-2680.8.2.78

Garmendia, M., Jiménez, E., Karrera, I., Larrañaga, N., Casado, M.A., Martínez, G., & Garitaoanadia, C. (2019). *Actividades, mediación, oportunidades y riesgos online de los menores en la era de la convergencia mediática*. Instituto Nacional de de Ciberseguridad. https://bit.ly/35LwDuo

Garmendia, M., Jiménez, E., & Larrañaga, N. (2019). Bullying and cyberbullying: Victimisation, harassment, and harm. The need to intervene in the educational centre. *Revista Española de Pedagogia*, *77*(273), 295-312. https://doi.org/10.22550/REP77-2-2019-08

Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. Guilford. https://bit.ly/3fh7hYm

Herrera-López, M., Casas, J., Romera, E., Ortega-Ruiz, R., & Del-Rey, R. (2017). Validation of the European cyberbullying intervention project questionnaire for colombian adolescents. *Cyberpsychology, Behavior, and Social Networking*, *20*(2), 117-125. https://doi.org/10.1089/cyber.2016.0414

Huang, S., Hu, Y., Ni, Q., Qing, Y., & Lü, W. (2019). Parent-children relationship and internet addiction of adolescents: The mediating role of self-concept. *Current Psychology*. https://doi.org/10.1007/s12144-019-00199-9

Kerr, M., Stattin, H., & Özdemir, M. (2012). Perceived parenting style and adolescent adjustment: Revisiting directions of effects and the role of parental knowledge. *Developmental Psychology*, *48*(6), 1540-1553. https://doi.org/10.1037/a0027720

Kisfalusi, D., Takács, K., & Pál, J. (2019). Gossip and reputation in adolescent networks. In *The oxford handbook of gossip and reputation* (pp. 359-379). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190494087.013.19

Law, D., Shapka, J., & Olson, B. (2010). To control or not to control? Parenting behaviours and adolescent online aggression. *Computers in Human Behavior, 26*(6), 1651-1656. https://doi.org/10.1016/j.chb.2010.06.013

Livingstone, S., & Smith, P. (2014). Annual Research Review: Harms experienced by child users of online and mobile technologies: the nature, prevalence and management of sexual and aggressive risks in the digital age. *Journal of Child Psychology and Psychiatry, 55*(6), 635-654. https://doi.org/10.1111/jcpp.12197

Lozano-Blasco, R., & Cortés-Pascual, A. (2020). Problematic Internet uses and depression in adolescents: A meta-analysis. [Usos problemáticos de Internet y depresión en adolescentes: Meta-análisis]. *Comunicar, 63*, 109-120. https://doi.org/10.3916/c63-2020-10

Machimbarrena, J.M., González-Cabrera, J., & Garaigordobil, M. (2019). Family variables related to bullying and cyberbullying: A systematic review. *Pensamiento Psicológico, 17*(2), 37-56. https://doi.org/10.11144/doi:10.11144/Javerianacali.PPSI17-2.vfrb

Romera, E., Herrera-López, M., Casas, J., Ortega-Ruiz, O., & Del-Rey, R. (2018). How much do adolescents cybergossip? Scale development and validation in Spain and Colombia. *Frontiers in Psychology, 9*, 1-10. https://doi.org/10.3389/fpsyg.2018.00126

Sasson, H., & Mesch, G. (2014). Parental mediation, peer norms and risky online behavior among adolescents. *Computers in Human Behavior, 33*, 32-38. https://doi.org/10.1016/j.chb.2013.12.025

Saunders, C., & Varma, P. (2016). The relationship between parental mediation and Facebook victimization and in-person victimization, both directly and indirectly being mediated by the intensity of Facebook use by middle school students in an international school in. *Human Sciences, 8*, 201-213. https://bit.ly/3kLRrpN

Sela, Y., Zach, M., Amichay-Hamburger, Y., Mishali, M., & Omer, H. (2020). Family environment and problematic internet use among adolescents: The mediating roles of depression and Fear of Missing Out. *Computers in Human Behavior, 106*, 106226-106226. https://doi.org/10.1016/j.chb.2019.106226

Shapka, J., & Law, D. (2013). Does one size fit all? Ethnic differences in parenting behaviors and motivations for adolescent engagement in cyberbullying. *Journal of Youth and Adolescence, 42*(5), 723-738. https://doi.org/10.1007/s10964-013-9928-2

Singleton, R.A., & Straits, B.C. (2004). *Approaches to social research*. Oxford University Press. https://bit.ly/2ULGEkU

Smahel, D., Machackova, H., Mascheroni, G., Dedkova, L., Staksrud, E., Ólafsson, K., Livingstone, S., & Hasebrink, U. (2020). *EU Kids Online 2020: Survey results from 19 countries*. EU Kids Online 2020. https://bit.ly/332jhYU

Smith, P., López-Castro, L., Robinson, S., & Görzig, A. (2019). Consistency of gender differences in bullying in cross-cultural surveys. *Aggression and Violent Behavior, 45*, 33-40. https://doi.org/10.1016/j.avb.2018.04.006

Sorrentino, A., Baldry, A., Farrington, D., & Blaya, C. (2019). Epidemiology of cyberbullying across Europe: Differences between countries and genders. *Educational Sciences: Theory and Practice, 19*(2), 74-91.

Stattin, H., & Kerr, M. (2000). Parental Monitoring: A Reinterpretation. *Child Development, 71*(4), 1072-1085. https://doi.org/10.1111/1467-8624.00210

Subrahmanyam, K., Reich, S., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology, 29*(6), 420-433. https://doi.org/10.1016/j.appdev.2008.07.003

Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics*. Allyn & Bacon / Pearson Educación. https://bit.ly/35NHXWX

Tur-Porcar, A., Doménech, A., & Jiménez, J. (2019). Achievement perceived, parenting, Internet use and adolescent behavior. *Revista Latinoamericana de Psicología, 51*(1), 38-47. https://doi.org/10.14349/rlp.2019.v51.n1.5

Wang, X., Lei, L., Liu, D., & Hu, H. (2016). Moderating effects of moral reasoning and gender on the relation between moral disengagement and cyberbullying in adolescents. *Personality and Individual Differences, 98*, 244-249. https://doi.org/10.1016/j.paid.2016.04.056

Wen, Z., & Fan, X. (2015). Monotonicity of effect sizes: Questioning kappa-squared as mediation effect size measure. *Psychological Methods, 20*(2), 193-203. https://doi.org/10.1037/met0000029

Zych, I., Baldry, A., Farrington, D.P., & Llorent, V.J. (2019). Are children involved in cyberbullying low on empathy? A systematic review and meta-analysis of research on empathy versus different cyberbullying roles. *Aggression and Violent Behavior, 45*, 83-97. https://doi.org/10.1016/j.avb.2018.03.004

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Generation Z's Teachers and their Digital Skills
Francisco-José Fernández-Cruz and María-José Fern…

The presence of technological resources in schools and the high performance of socalled «Technology Generation» or «Generation Z» students are not enough to develop students' digital competence. The primary key is determined by the technological and pedagogical skills of teachers. In this paper, we intend to analyze the level of ICT skills of teachers in primary and secondary establishing a competency framework adapted to the Spanish educational environment, using as a

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Internet memes in Covid-19 lockdown times in Poland

Memes de Internet en tiempos de confinamiento por Covid-19 en Polonia

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ABSTRACT

Poland was one of the countries that was hit by the Covid-19 pandemic in 2020, and its government imposed restrictions to combat the spreading of the virus. The Internet and social media became outlets for people's reactions to the events that unfolded, including the lockdown. A part of this reaction came in the form of creating and sharing memes – an expression of digital participatory culture. This paper aims to analyze how Covid-19 was communicated and narrated through Internet memes and how they presented the pandemic and actors responsible for fighting it. 1,763 memes from six media platforms were analyzed using content analysis with framing elements and a comparative narrative analysis. The results show that the memes provided a form of commentary on the situation experienced by Poles. The most common category of memes was "bans and orders", involving restrictions that were often criticized and ridiculed as pointless. The main characters within the memes were ordinary citizens, often portrayed in a comedic way as careless in regards to the virus and violating the restrictions. They were also presented as victims of the police and the government. Furthermore, the people responsible for fighting the pandemic were portrayed as incompetent and imposing needlessly severe restrictions and penalties for not abiding by them.

RESUMEN

Polonia fue uno de los países golpeados por la pandemia del Covid-19 en 2020, cuyo gobierno impuso restricciones para combatir la propagación del virus. Internet y las redes sociales se convirtieron en un escape para las reacciones de las personas a estos eventos, incluido el confinamiento. Una parte de esta reacción vino en forma de creación y difusión de memes, una expresión de la cultura digital y participativa. El presente estudio tiene como objetivo analizar cómo el Covid-19 fue comunicado y narrado a través de los memes en Internet y cómo fue presentada la pandemia y los responsables de combatirla. Fueron analizados 1.763 memes de seis medios empleando un análisis de contenidos con elementos de enmarque y análisis comparativo narrativo. Los resultados muestran que los memes fueron una forma de expresión sobre la situación vivida por los polacos. La categoría más popular fue la de «prohibiciones y órdenes», aludiendo a las restricciones que frecuentemente fueron criticadas y ridiculizadas como inútiles. El personaje principal de los memes fueron los ciudadanos, frecuentemente retratados de una manera cómica como personas irresponsables en cuanto al virus y violaciones de las restricciones. También fueron presentados como víctimas de la policía y el gobierno. Además, las personas responsables de combatir la pandemia fueron retratadas como incompetentes, al imponer restricciones y sanciones excesivamente estrictas por no obedecerlas.

1. Introduction

The outbreak of the Covid-19 pandemic is one of the greatest challenges the world is facing today. Increasing numbers of virus cases, the first one recorded in Poland on March 4, 2020, led to a lockdown lasting two months, affecting the state, society, and the media. The constantly changing situation has been intensely covered since February (Pacula, 2020), and is still one of the most important topics in the media. A lot of information about the virus is spread through the Internet and social media (i.e. through hashtags and memes). Communication about the pandemic through memes is the subject of this article. Memes can be carriers of opinions and a form of socio-political commentary. Sharing them on the Internet or modifying their content, is an example of people getting involved in socially important issues, such as the pandemic.

1.1. The socio-cultural role of memes

Wiggins (2019) argues that memes are not only content carriers or culture replicators, but also visual arguments reflecting certain ideological practices. Shifman (2014: 7-8) in turn points out that a meme is a group of content units that includes the three following dimensions: content, form, and attitude. According to her, Internet memes are: "(a) a group of digital items sharing common characteristics of content, form, and/or stance; (b) that were created with awareness of each other; and (c) were circulated, imitated, and/or transformed via the Internet by many users". She underlines the importance of the last of these aspects. The principle of imitation and repackaging of content through mimicry and remixing are of key importance in meme transmission. It takes place under competition and selection conditions, which result in the evolution and the construction of many versions and meanings of individual messages (Shifman, 2014).

Internet memes, which present specific and metaphorical ideas by text, images, video and hashtags (Guenther et al., 2020), can take the form of frames. Frames in media messages are manifested in "keywords, stock phrases, stereotyped images, sources of information" (Entman, 1993: 52). Hence, the structure of the meme can favor framing. Frames are cognitive schemas that help to understand information in a certain way (Goffman, 1986). Their application is "taken from the collective experience of a given community" (Czyzewski, 2010: 25), which affects message encoding and decoding. Therefore, memes are perceived as an "inside joke" (Sroka, 2019: 30) addressed to a specific audience and requiring knowledge of its context. That is why cultural, political and historical references in memes determine their usefulness to recipients (Kozhamkulova & Foster, 2019) and their sharing to a wider audience. Memes as virus-like categories (Shifman, 2013) are disseminated via social media or dedicated portals to gain exposure and promote their creators (Denisova, 2019), and instill specific ideas in the recipient's mind. They can also be modified by recipients who in this way support or oppose the presented viewpoint (Ross & Rivers, 2019), because frames do not have universal impact on everyone and need clarification. The interchangeability of tasks between the meme creator and recipient indicates the active role of the media audience in creating media and public discourse.

1.2. Participatory culture and Internet memes

According to Shifman (2013: 365), memes can influence "the mindsets, forms of behavior, and actions of social groups". This is due to the sense of connection in the community and having a common goal, for example to respond to the threat posed by Covid-19 (Msugheter, 2020). Nowak (2016) notes that creating and sharing memes, apart from being entertaining, serves to discuss and comment on reality and to inform one another. Therefore, memes can be seen as products of participatory digital culture, characterized by "low barriers of artistic expression (…), strong support for creating and sharing one's creations (…), informal mentorship", and participants' belief in the importance of their contributions (Jenkins et al., 2007: 3). Cultural participation mechanisms are often used to engage people through the Internet in socio-political issues (Jenkins et al., 2016). The interactive nature of social media gives the opportunity for participation and becoming aware of and engaging in national and international issues. Internet memes as user-generated content can also be a carrier of political comments and serve to include citizens in a public conversation or "be used as a tool for political meaning-making" (Kligler-Vilenchik & Thorson, 2016:

1997) as in Ross' and Rivers' studies (2017a; 2017b) on the role of memes in the delegitimization of the US Presidential Candidates in the 2016 election. This shows that memes are an important tool of online discourse, giving users a sense of commitment for creating and participating in it, and even influencing others.

Brown (2009) points out that an important feature of Internet memes is their connection to popular culture. Memes encourage forms of intertextuality, combining elements of popular culture and references to politics to emphasize dynamics of the real and virtual world (Shifman, 2014). While analyzing memes that were created and spread during the Covid-19 pandemic, MacDonald (2020) describes how people used intertextual references to popular culture to express their frustration against neoliberal dogmas. She focuses on memes commenting on inter-generational tensions resulting from various reactions to self-isolation. These issues were also highlighted by Pauliks (2020: 47), who noted that the so-called baby boomers are presented in memes, which are mainly created by "millennials (…) and zoomers", as potential victims of Covid-19. Referring to examples of series and cartoons used in memes, he also writes about the impact of lockdown on citizens' behavior, including panic buying. References to popular culture in memes indicate their important role within participatory culture – not only local but also international. Photos or quotes from movies or songs are often replicated in memes and put in a specific context, depending on the situation or place of residence of the members of the memetic community.

2. Material and methods

Mixed methods were used to conduct the study. To answer the research questions and fulfill the research objectives we analyzed the collected memes using content analysis with framing elements. Comparative narrative analysis was used at the second stage of the study when we analyzed memes aggregated by six different media. Content analysis was the main research method, and framing and narrative analysis were additional. We analyzed the memes using the MAXQDA and Microsoft Excel programs.

2.1. Objectives and research questions

The aim of the study was to analyze how Covid-19 was communicated and narrated through Internet memes, and how these presented the pandemic and actors responsible for fighting it.

To fulfill the research objectives, we created two research questions:
- RQ1: What thematic categories and actors did memes refer to most often?
- RQ2: What narrative was dominant in the memes?

2.2. Data sample and research procedure

In Poland, it is increasingly common for mainstream media to aggregate memes and categorize them thematically in galleries (Piskorz, 2015). The memes are gathered from social media but the criteria for their selection is not always stated. It can be assumed that the memes are chosen based on their popularity and entertainment value.

In this study, 1,763 memes on the subject of Covid-19 from six media were analyzed. We collected all the materials in June, but included memes created since March. We decided to analyze memes gathered (and identified as memes) by four media: "Polska Times" (331 memes), "Dziennik Polski" (277 memes), "Dziennik Zachodni" (93 memes) and "Glos Koszalinski" (231 memes). "Polska Times" and "Dziennik Polski" are nationwide media, while "Dziennik Zachodni" and "Glos Koszalinski" are regional. These media are daily newspapers and also have their own websites, which we analyzed in this study. Apart from meme galleries, these media have a meme tab on their websites and use hashtags, which allowed us to find the memes about Covid-19. We also analyzed memes from the most popular (based on the amount of likes and followers) Facebook (395 memes) and Instagram (436 memes) pages commenting on Polish politics and dedicated to Covid-19. In this way we chose "Sekcja gimnastyczna", "Repostuj", "Komemtator" and "Koronawirus memy" on Facebook, and "Umieramza Polske" on Instagram. We also searched for memes on Instagram using the hashtags "koronawirusmemy" (coronavirus memes) and "koronawiruspolska" (coronavirus Poland), choosing to analyze the memes with the highest number of reactions and likes, and excluding repetitive memes. Although the media are not study variables but a

source of meme collection, we will note the differences between them in the results. A mixed methods research design was applied in the study, which helped us to analyze the memes in two steps. At the beginning we defined a list of six main categories of memes, divided into subcategories that helped to clarify the scope of each category. The categories and subcategories are described in detail in the results. We defined thematic categories based on an initial overview of the memes and pandemic-related topics discussed in the mainstream media, since we recognized that these could be reflected in the memes. After defining the categories that we included in the codebook, we conducted a content analysis of the memes to determine which of the topics was the most dominant, which is a part of the first research question. The first stage of research was quantitative and thus content analysis was a suitable method.

At the second stage, we analyzed the memes assigned to the most numerous thematic category. Every second meme from this category was selected and thoroughly examined using a new codebook consisting of four categories. We used content analysis with framing elements, which can be considered as a mixed method, and comparative narrative analysis, which has a qualitative character, to analyze the narration on the pandemic and the actors portrayed in the memes.

Some researchers (Sarna, 2016; Denisova, 2019) have studied the narrative potential of Internet memes. The qualitative analytic tool (narrative schemas) used at the second stage of the analysis in our study, was taken from the works of Frye (1957) and Wasilewski (2012). These narrative schemas are epic (or romance), satire, comedy and tragedy. An epic is a story about gaining a new identity and self-discovery. A typical example of it are stories in which the actor acts altruistically and heroically, and leads to a triumph of good over evil. Satire is the reverse of the epic scheme. The actor submits to the laws of the world, although he tried to fight them. Comedy is a story about being conformist and able to adapt to the prevailing conditions or to unite beyond differences, for example to come to terms with old enemies. Tragedy is an inversion of the comedy scheme. The actor realizes that the laws governing the world are ruthless, and the divisions between people are permanent and inevitable.

The rest of the categories included in the codebook used at the second stage of analysis are described in the empirical part of the article ("Actors in the Covid-19 memes").

For testing reliability and inter-coder agreement we analyzed 50 memes at each stage of the study. Agreement was measured in kappa. At the first stage of the research the kappa coefficient was over 0.9, and at the second stage over 0.8, which shows that our rate of agreement was sufficient.

3. Results

3.1. Specific topics and categories of memes

At the first stage of the analysis we assigned the memes to six main categories: free time, politics, services, work and study, bans and orders, stigma and exclusion. These were in turn divided into subcategories. "Free time" included topics such as leisure activities during the lockdown, quarantine effects (for example weight gain) and holidays and relaxation. "Politics": presidential elections, anti-crisis[1] shield, political events, media propaganda, stories on political actors and their actions. "Services" included memes about the police, fire brigade, health and sanitary services. "Work and study" concerned the remote and stationary forms of these activities. "Bans and orders" involved restrictions on public transport and border crossings, quarantine, ban on public assemblies, social distancing, shopping and limits on people in stores, closing of hair and beauty salons, entry ban to forests, and the mask wearing order. "Stigma and exclusion" included memes that criticized and ridiculed people from the regions in Poland and abroad that had the most cases of Covid-19 or were held responsible for the pandemic.

The most common thematic categories of memes were "bans and orders" (773 memes), "free time" (319 memes) and "politics" (297 memes). Table 1 shows that "bans and orders" was the most common category in all media. Some differences in the number of memes in certain media are noticeable. Although "services" is the least frequently presented category in total, it is only the least frequent in "Dziennik Polski" and Instagram. "Work and study" is the least frequently shown category by "Polska Times" (19 memes) and Facebook (5 memes), while "Glos Koszalinski" had the least memes about "stigma and exclusion" (3 memes). For "Dziennik Zachodni", "services" and "work and study" are tied.

Table 1. Thematic categories of memes						
Category	Polska Times	Dziennik Polski	Dziennik Zachodni	Głos Koszaliński	Facebook	Instagram	Total
Free time	67	59	7	42	40	104	319
Politics	41	49	12	26	119	50	297
Services	35	14	1	19	14	12	95
Work and study	19	28	1	39	5	65	157
Bans and orders	146	89	67	102	198	171	773
Stigma and exclusion	23	38	5	3	19	34	122

The category "Bans and orders" was based on government restrictions introduced from March 15th to April 15th (Website of the Republic of Poland, 2020). We found that the memes analyzed were usually published shortly after these restrictions were introduced. The "quarantine" order announced on March 24th is the most common topic of the memes within "bans and orders" in four of the six media, which shows that there is a correlation between the meme subject and introduced restrictions, and that the subcategories were chosen accurately. The "quarantine" order was often related to lockdown and the necessity of isolation for people infected by Covid-19, as well as for Poles working abroad returning home. An example of such a meme is one where two aliens look out from an apartment window, with a caption stating: "When you invaded Earth, but you have to spend two weeks in quarantine…" (Polska Times, 2020c).

"Quarantine" (284 memes), "mask wearing order" (164 memes) and "shopping and limits on people in stores" (133 memes) were the most common subcategories in "bans and orders" (Table 2). In the case of "Glos Koszalinski", however, "closing of hair and beauty salons" was the most common. In turn "public transport and border crossing" (11 memes), "entry ban to forests" (20 memes) and "social distancing" (33 memes) are the least used subcategories of "bans and orders". Just as in the case of the main thematic categories (Table 1), some differences between the media are noticeable. "Entry ban to forests" was the least presented meme topic on Instagram (3 memes), compared to "public transport and border crossing" in other media. "Social distancing" was one of the two least presented topics of memes collected by "Dziennik Polski". Despite minor differences between the analyzed media, a general trend in thematic categories of memes is observable.

Table 2. Bans and orders – specific categories of memes						
Category	Polska Times	Dziennik Polski	Dziennik Zachodni	Głos Koszaliński	Facebook	Instagram	Total
Public transport and border crossing	1	2	0	1	0	7	11
Quarantine	77	41	8	34	73	51	284
Ban on public assemblies	5	13	15	9	16	19	67
Social distancing	4	2	1	3	10	13	33
Shopping and limits on people in stores	23	17	3	5	47	38	133
Closing of hair and beauty salons	33	5	1	40	8	4	61
Entry ban to forests	3	3	2	4	5	3	20
Mask wearing order	30	16	37	6	39	36	164

3.2. Actors in the Covid-19 memes

At the second stage of the study, the memes related to "bans and orders" – the most common thematic category of memes – were analyzed through four categories: type of meme, dominant and secondary actors, and scheme of narration. These have in turn been divided into subcategories.

The category "type of meme" was related to its form (graphic-textual, graphic, textual). The "actor" category included information about the "dominant" and "secondary" actor. The "dominant actor" referred to the leading actor in the foreground of the meme, while the "secondary actor" would be an actor in the background, in a less important role. The actor could be, for example, a politician, an ordinary man, as well as uniformed (police, fire brigade) and non-uniformed services (health services). The "scheme of narration" included four types of plots: epic, satire, comedy and tragedy, and was used to analyze the actions of the actors. The form of the vast majority of memes was a combination of graphics and text.

This "type of meme" was dominant in all the media platforms. The exclusively graphic memes came mainly from Facebook. A few consisted only of text, and they too came mostly from Facebook. The most common "dominant actor" in the memes is the "ordinary man" (164 memes), and this actor was dominant across all the media outlets (Table 3). The second in line is the "abstract actor" – primarily a cartoon character (62 memes). Third is the "movie and literature character" (59 memes). A considerable number of memes also concerned "uniformed service" (30 memes), "animals" (25 memes), and "politicians" (21 memes). For 174 memes a "secondary actor" could not be distinguished. The most common "secondary actor", just like in the case of the "dominant actor", is the "ordinary man" (95 memes). Next in order of frequency comes "movie and literature character" (37 memes), the "abstract actor" (36 memes), and "politician" (17 memes).

Table 3. Actors in the memes			
Category	Dominant actor	Secondary actor	Total
Politician	21	17	38
Ordinary man	164	95	259
Uniformed service	30	8	38
Non-uniformed service	2	3	5
Journalist	3	1	4
Celebrity	15	4	19
Athlete	2	0	2
Animal	25	9	34
Abstract actor	62	36	98
Movie and literature character	59	37	96
Historical figure	4	6	10

The results of the "scheme of narration" category are presented in Table 4 below. Next, we present examples of memes representing each of the plots. Based on Frye's theory (1957), we decided to place memes that represent opposite narratives next to each other. As a result, Figure 1 shows memes with "comedy" (a) and "tragedy" (b) narration, and Figure 2 – "satire" (c) and "epic" (d).

Table 4. Scheme of meme narration						
Category	Polska Times	Dziennik Polski	Dziennik Zachodni	Głos Koszaliński	Facebook	Instagram	Total
Epic	8	9	5	4	11	5	42
Satire	19	8	4	17	27	21	96
Comedy	41	19	20	16	49	32	177
Tragedy	5	13	4	14	12	27	75

The "comedy" scheme (177 memes) was clearly the most dominant. "Glos Koszalinski" was an exception where "satire" appeared more often. An example of the "comedy" scheme is a meme (Figure 1-a) from Pachelska (2020) which uses images from the anime series Pokémon.

Figure 1. Examples of memes with comedy (a) and tragedy (b) narration

The first part of it (with the caption "people with the flu") shows a sick cartoon character, Pikachu, in bed. The second image shows characters running and has two captions. The first is "people with coronavirus", and the second the lyrics from the series' theme song: "I will travel along and across the land".

75 memes represented the "tragedy" scheme, which makes it the third most common. An example of a meme in this category is one from Facebook (Koronawirus memy, 2020) where a young man is standing next to a bus stop holding a sign with the text: "Announce this coronavirus [its existence] in Poland, because this tension will be the end of me" (Figure 1 – b). It is a commentary on Polish authorities and public media not taking rumors about a Covid-19 outbreak in Poland seriously, when such speculations were reported by other media, and virus infections were recorded in neighboring states. The satirical scheme involved 96 memes and was the second most frequent type of narration. An example of this narration is a meme from Polska Times (2020b) (Figure 2-c) where a Polish police patrol stops an astronaut. The policeman asks: "What is the purpose of your trip?".

Figure 2. Examples of memes with satire (c) and epic (d) narration

The "epic" narration was the least common (42 memes in total). However, it should be noted that it was the least frequently used narration only in the case of "Glos Koszalinski" (4 memes), Facebook (11 memes), and Instagram (5 memes). In the memes from "Polska Times" the tragic scheme (5 memes) appeared the least often. For "Dziennik Polski" it was "satire" (8 memes), and "satire" and "tragedy" (both 4 memes) for "Dziennik Zachodni". A characteristic example of an epic scheme is shown in Figure 2 – d, where the main message ("Stay at home") is placed in the center of the meme from "Polska Times" (2020a).

4. Discussion and conclusions

This research aimed to analyze how Covid-19 was communicated and narrated through Internet memes, and how these presented the pandemic and actors responsible for fighting it. We draw the following conclusions.

"Bans and orders" is the most frequent category of memes (Table 1), which answers the first research question. It can be considered as a social reaction to the actions of the Polish government and services. Memes dedicated to this category served to point out the incompetence of political actors and police in the fight against Covid-19, which is in line with Msugheter's (2020) studies on memes and the pandemic in Nigeria. Many memes showed the restrictions as excessive and often pointless, and indicated ways to avoid them, which is reflected in public opinion polls showing that people had a negative view of the measures imposed (Feliksiak, 2020). The plans to hold presidential elections in May were equally criticized and mocked in the memes, which promoted staying at home rather than voting to avoid infection. Therefore, some of them can be seen as a form of electronic civil disobedience and a language of protest, similar to the social media usage during the Arab Spring and the Indignados movement in Spain (Harlow, 2013), but on a smaller scale. Our results represent an opportunity to deepen the analysis of the role

of memes in communicating about crisis situations as bottom-up messages which can contribute to and change the public discourse, just as traditional media and political messages do.

The memes largely drew attention to the same restrictions (Table 2) which may indicate a kind of consensus, and thus be a manifestation of participatory culture (Jenkins, 2006). The viral spread of memes shared by Internet users and sometimes mainstream media, as shown in this study, gives people opportunity to express opinions and influence others. Certain frames and narratives can be transferred from online to traditional media (Harlow, 2013) and the media agenda can influence the public one (Wanta & Ghanem, 2006). This is not only the case in the context of political views, but also for the possibility of learning certain behaviors from memes, for example hand washing (Msugheter, 2020). This function seems to be noticeable in the analyzed memes, because "quarantine" and "mask wearing order" are the most common topics of "bans and orders". Although they were often portrayed in a parodic way, they could teach preventive behavior in the fight against Covid-19 in an entertaining way, which can be exemplified by the previously mentioned meme with two aliens in quarantine (Polska Times, 2020c). While this meme has an instructive character in terms of promoting staying at home, its ironic tone is also a form of criticism against the restrictions.

Another observation from our study, which also answers the first research question, is that the most common "dominant actor" of the memes was the "ordinary man" and not politicians (Table 3). Often it involved a person shopping or encountering police during the lockdown. The "ordinary man" was usually presented as a victim of services, which in turn were portrayed in a negative or satirical way. This is an example of using a frame of "us" (citizens) vs "them" (political actors and services) to emphasize the antagonism between society and Polish authorities. According to Galtung (2006) this type of framing may determine the way the media recipients perceive certain actors – "us" being viewed positively and as victims, and "them" negatively as aggressors. An equally important conclusion regarding the actors in the memes is that many of the memes were made from images from well-known cartoons and movies, which is in line with Brown's (2009) study that showed that an important characteristic of the meme is its connection with popular culture. Popular culture can provide a context for understanding the phenomenon presented in a meme. This can be exemplified by Figure 1 – a where images from the Pokémon series were used to symbolize Polish citizens travelling across the country without regard for the virus or the restrictions. All of the analyzed memes could be categorized within the four narrative schemas, leading to the conclusion that they illustrated a specific story which can be interpreted in a certain way. Actors presented through the "comedy" narration – the most common one (which answers the second research question) – were reconciled with the inconveniences of the pandemic and had adapted to it. This type of meme was also intended to cheer up its recipients and to raise their spirit. A large number of memes even showed people satisfied with life during the pandemic, which can be interpreted as a defensive reaction, for example to the incompetence of politicians and the repressive actions of the police.

The "satire" scheme did not usually involve the "ordinary man", but was rather associated with politicians, celebrities, and police. Polish politicians were portrayed disregarding social distancing and disobeying the ban on public assemblies during their political rallies, despite the fact that they were the people responsible for these restrictions. The memes also presented policemen focusing on inflicting severe punishment upon citizens. The absurdity of the situations in which the police were portrayed (Figure 2 – c) and the negative perspective of memes associated with these actors constitute a clear objection to this service and their actions. The negative and satirical way in which political actors and services were presented in the memes might be related to Poles' level of trust in these entities. Public opinion polls from May concerning the assessment of the government's actions against the pandemic showed that over 40 percent of Poles perceived them negatively (Roguska, 2020). Polls from June confirmed declining trust in politicians (Cybulska, 2020). The power of the police in relation to the pandemic was also considered excessive (Feliksiak, 2020). This was also expressed in the memes (Figure 2-c) and indicates that they were social reactions and a form of commentary on the pandemic and the actions of actors responsible for fighting it. It is worth noting that the low level of trust in authorities and services is historically and culturally conditioned (Nowakowski, 2008). According to Mularska-Kucharczyk (2011), the communism period in particular led to social atomization and a sharp division between the authorities and society, resulting

from political and social repression. Our research indicates that collective experiences (Czyzewski, 2010; Goffman, 1986) such as the mentioned communist period could have had an influence on the negative framing of authorities and services as well as the restrictions. We can also note that the subject matter and perspective of the memes were likely influenced by the media that selected them for publishing. We noticed, for example, that "Glos Koszalinski" focused on different subcategories of "bans and orders" than the other media (Table 2). This medium published a special gallery dedicated only to the "closing of hair and beauty salons" order, which can be an effect of the medium's regional character and its specific audience.

In the case of the "tragedy" narration, the essence of the story based on this scheme is that the individual is isolated from society. This could be seen in memes where the "dominant actor" is the "ordinary man", and the politician or policeman is "secondary". Such narratives focused on highlighting the gap between groups with different social status, and the "ordinary man's" frustration with the situation and media disinformation on the pandemic (Figure 1-b). Memes that portrayed the intra-social conflicts during the pandemic were also analyzed in Pauliks' (2020) and MacDonald's (2020) studies that focused on inter-generational disputes. Inter-generational conflicts were presented in Polish memes as well, for example regarding older people breaking the restrictions by shopping outside of their designated hours, or attending churches despite the ban on public assemblies. However, such disputes were far less common than the conflict between the "ordinary man" and authorities and services, expressed through the frame "us" vs "them".

The "epic" narration was the least common. These memes often showed the actor doing simple household activities, mostly staying at home. In this simple way any person could become a superhero (Figure 2-d). A similar narrative was presented in other memes, for example the one with quarantined aliens (Polska Times, 2020c), which confirms that apart from having an entertaining or critical approach to Covid-19 and the restrictions, the analyzed memes could also promote preventive actions.

A limitation of the study is that we only included media that aggregate memes, but not ones that create their own. Most of the memes spread on the Internet come from the second type. They may then play the role of opinion leaders, influencing other media. Therefore, both types of media can be analyzed in the future, also to check the extent to which they might affect the public perception of issues and actors shown in memes. It can be studied through media user surveys or analysis of comments, discussions, likes and reactions to memes on social media. Another limitation of the research is its descriptive and mostly quantitative nature, which results from the use of content analysis as the main research method, and framing and narrative analysis as additional methods. Moreover, the qualitative part of the analysis could be slightly subjective, as it was the coder who decided whether a given narration was visible in the meme or not. We tried to solve this problem through testing intercoder agreement to find out if we perceived the qualitative elements the same. Also, the relatively small number of published studies on memes and Covid-19 have made it difficult to conduct extensive comparative studies on this topic. We have mentioned the most recent research, which, like our studies, are believed to fill in some knowledge gaps in this particular field.

Notes
[1] Financial aid from the government for domestic entrepreneurs during the pandemic.

Funding Agency

References
Brown, R. (2009). *Public relations and the social web: How to use social media and web 2.0 in communications*. Kogan Page Publishers. https://bit.ly/2FAgf5q

Cybulska, A. (2020). *Zaufanie do politykow na przeomie maja i czerwca. [Trust in politicians at the turn of May and June]*. Public Opinion Research Center. https://bit.ly/3aWp31e

Czyzewski, M. (2010). Analiza ramowa, czyli "co tu sie dzieje? [Frame analysis, meaning "what's going on here?"]. In E. Goffman (Ed.), *Analiza ramowa. Esej z organizacji dowiadczenia [Frame analysis. An essay on the organization of experience]* (pp. 7-47). Nomos. https://bit.ly/32CNooZ

Denisova, A. (2019). *Internet memes and society. Social, cultural, and political contexts*. Routledge. https://doi.org/10.4324/9780429469404

Entman, R. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, *43*(4), 51-58. https://doi.org/10.1111/j.1460-2466.1993.tb01304.x

Feliksiak, M. (2020). *Opinie o epidemii koronawirusa i zwiazanych z nia restrykcjach. [Opinions on the coronavirus epidemic and related restrictions]*. Public Opinion Research Center. https://bit.ly/3b2j9M0

Frye, N. (1957). *Anatomy of criticism: Four essays*. Princeton. https://doi.org/10.1515/9781400866908

Galtung, J. (2006). Peace journalism as an ethical challenge. *GMJ: Mediterranean Edition*, *1*(2), 1-5. https://bit.ly/2EsLGOt

Goffman, E. (1986). *Frame analysis: An essay on the organization of experience*. Northeastern University Press. https://bit.ly/2E2gaXw

Guenther, L., Ruhrmann, G., Bischoff, J., Penzel, T., & Weber, A. (2020). Strategic framing: Analyzing memes posted by the german identitarian movement on Facebook. *Social Media + Society*, *6*(1), 1-13. https://doi.org/10.1177/2056305119898777

Harlow, S. (2013). It was a "Facebook revolution": Exploring the meme-like spread of narratives during the Egyptian protests. *Revista de Comunicación*, *12*, 59-82. https://bit.ly/30Mpesg

Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. New York University Press. https://bit.ly/320rsne

Jenkins, H., Clinton, K., Purushotoma, R., Robinson, A.J., & Weigel, M. (2007). *Confronting the challenges of participatory culture: Media education for the 21st Century*. The MacArthur Foundation. https://doi.org/10.7551/mitpress/8435.001.0001

Jenkins, H., Ito, M., & Boyd, D. (2016). *Participatory culture in a networked era: A Conversation on youth, learning, commerce, and politics*. Polity Press. https://bit.ly/2E0xcpd

Kligler-Vilenchik, N., & Thorson, K. (1993). Good citizenship as a frame contest: Kony2012, memes, and critiques of the networked citizen. *New Media & Society*, *18*(9). https://doi.org/10.1177/1461444815575311

Koronawirus memy (Ed.) (2020). *Oficjalne powitanie nastapilo dzisiaj. [The official welcome was today] [Status Update]*. Facebook. https://bit.ly/32p8abu

Kozhamkulova, S., & Foster, B. (2019). Ironic mirrors of public discourse: Framing analysis of kazakhstani popular Internet memes. [Conference]. 2019 Central Eurasian Studies Society, Washington, DC, United States. https://bit.ly/2DY94DF

Macdonald, S. (2020). What do you (really) meme? Pandemic memes as social political repositories. *Leisure Sciences*, (pp. 1-9). https://doi.org/10.1080/01490400.2020.1773995

Msugheter, A.E. (2020). Internet meme as a campaign tool to the fight against Covid-19 in Nigeria. *Global Journal of Human-Social Science: A Arts & Humanities – Psychology*, *20*(6), 27-39. https://bit.ly/33S4W2s

Mularska-Kucharek, M. (2011). Zaufanie jako fundament zycia spoecznego na przykladzie bada w wojewodztwie lódzkim. [Truth as the foundation of social life on the example of a study in the Lodz Province]. *Studia Regionalne i Lokalne*, *2*(44), 76-91. https://bit.ly/3aSO794

Nowak, J. (2016). Internet meme as a meaningful discourse: Towards a theory of multiparticipant popular online content. *Central European Journal of Communication*, *9*(1), 73-89. https://doi.org/10.19195/1899-5101.9.1(16).5

Nowakowski, K. (2008). Wymiary zaufania i problem zaufania negatywnego w Polsce. [Dimensions of trust and the problem of negative trust in Poland]. *Ruch Prawniczy, Ekonomiczny i Socjologiczny*, *70*(1), 213-233. https://bit.ly/34swBYh

Pachelska, K. (2020). *Koronawirus: mieszne memy. Zwierzaki komentuj epidemi i zachowania ludzi. Teraz ju b dziecie wiedzie, sk d si wzi la pandemia. [Coronavirus: Funny memes. Pets comment on the epidemic and human behavior. Now you will know where the pandemic came from]*. Dziennik Zachodni. https://bit.ly/2Emkamg

Pacula, P. (2020). *Poland: Coronavirus and the media*. European Journalism Observatory. https://bit.ly/30P1OTi

Pauliks, K. (2020). Memes of the virus: Social criticism of the corona pandemic on the Internet. *TelevIZIon*, *33*, 46-49. https://doi.org/10.25969/mediarep/13875

Piskorz, K. (2015). Internet nie pi, Internet reaguje. Memy internetowe jako forma komentarza do bie cych wydarze społecznych i politycznych. [The Internet never sleeps: The Internet reacts. The Internet meme as a form of the current political and social commentary]. *Zeszyty Prasoznawcze*, *3*(233), 650-658. https://doi.org/10.4467/2299-6362PZ.15.043.4245

Polska Times (Ed.) (2020a). Memy o koronawirusie i kwarantannie obna aj prawdziwe uczucia, ale ucz te profilaktyki przed Covid-19. [Memes about the coronavirus and quarantine reveal true feelings and also teach prevention against Covid-19]. https://bit.ly/3hKnDZW

Polska Times (Ed.) (2020b). Policjanci w czasie epidemii koronawirusa wlepiaj setki mandatów – zobacz najlepsze memy i demotywatory. [During the coronavirus epidemic policemen issue hundreds of tickets – see the best memes and demotivators]. https://bit.ly/2Qvfm00

Polska Times (Ed.) (2020c). Sportowcy wracaja z kwarantanny na boiska. MEMY, jak szybko nadrobic zalegoloci i wrocic do formy? [Athletes return from quarantine to the fields. MEMES, how to quickly catch up and get back in shape?]. https://bit.ly/3hzZNjN

Roguska, E. (2020). *Ocena dziaa rzadu w okresie epidemii. [Assessment of the government's actions during the epidemic]*. Public Opinion Research Center. https://bit.ly/3jbDEbN

Ross, A., & Rivers, D. (2017a). Digital cultures of political participation: Internet memes and the discursive delegitimization of the 2016 U.S Presidential candidates. *Discourse, Context & Media*, *16*, 1-11. https://doi.org/10.1016/j.dcm.2017.01.001

Ross, A., & Rivers, D. (2017b). Internet memes as polyvocal political participation. In D. Schill, & J. A. Hendricks (Eds.), *The Presidency and social media: Discourse, disruption and digital democracy in the 2016 Presidential election* (pp. 285-308). Routledge. https://doi.org/10.4324/9781315112824-15

Ross, A., & Rivers, D. (2019). Internet memes, media frames, and the conflicting logics of climate change discourse. *Environmental Communication*, *13*(7), 975-994. https://doi.org/10.1080/17524032.2018.1560347

Sarna, P. (2016). Memy w perspektywie retorycznej. [Memes from a rhetorical perspective]. In P. Sarna, & M. S k-Iwanek (Eds.), *Dyskursy widzialno☐ci: Słowa a obrazy. [Visibility discourses: Words and images]* (pp. 123-147). University of Silesia Press. https://bit.ly/3aA68Jb

Shifman, L. (2013). Memes in a digital world: Reconciling with a conceptual troublemaker. *Journal of Computer-Mediated Communication*, *18*(3), 362-377. https://doi.org/10.1111/jcc4.12013

Shifman, L. (2014). *Memes in digital culture*. MIT Press. https://doi.org/10.7551/mitpress/9429.001.0001

Sroka, J. (2019). *Obrazkowe memy internetowe. [Pictorial Internet memes]*. CeDeWu. https://bit.ly/2E5nUb4

Wanta, W., & Ghanem, S. (2006). Effects of agenda-setting. In R. W. Preiss, B. M. Gayle, N. Burrell, M. Allen, & J. Bryant (Eds.), *Mass media effects research: Advances through media-analysis* (pp. 37-51). Lawrence Erlbaum Associates Publishers. https://bit.ly/2CtSVVI

Wasilewski, J. (2012). *Opowieci o Polsce. Retoryka narracji. [Tales about Poland. Rhetoric of narratives]*. Studio Headmade. https://bit.ly/3kQDKYd

Website of the Republic of Poland (Ed.) (2020). Coronavirus: Information and recommendation. https://bit.ly/2Qpug8e

Wiggins, B.E. (2019). *The discursive power of memes in digital culture ideology, semiotics, and intertextuality*. Routledge. https://doi.org/10.4324/9780429492303

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Coping with distress among adolescents: Effectiveness of personal narratives on support websites

Afrontar la diversidad entre adolescentes: Eficacia de las narrativas personales en webs de apoyo

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ABSTRACT

Sharing, reading and responding to personal narratives on peer-to-peer support websites may provide adolescents with informational and emotional support to feel more confident in coping with stressful events. However, their use may also pose a threat to adolescents' coping self-efficacy. Principles of expressive writing, social sharing of emotions, narrative persuasion and self-effects may provide insight in how these actions may both positively and negatively relate to coping self-efficacy. By using a cross-sectional online survey with 311 Dutch-speaking adolescents between the ages of 14 and 18, this article explores how these actions and social support motives (i.e. information-seeking and emotional support-seeking) are related to adolescents' perceptions about the usefulness of these websites to their coping self-efficacy. The results showed a positive relation between adolescents' social support motives and their belief in the usefulness of these websites to their coping self-efficacy. Therefore, we conclude that it may be an effective coping strategy for many adolescents. There was a negative relation between experience with sharing a personal narrative and coping self-efficacy, meaning that these users did not perceive the website to be helpful to their overall confidence in coping with stressful events. However, this negative relation was reversed when they were motivated to find emotional support with similar others.

RESUMEN

Compartir, leer y responder a narraciones personales en webs de apoyo entre iguales puede tanto fortalecer como amenazar la confianza de los adolescentes para hacer frente a los acontecimientos estresantes (es decir, la autoeficacia como estrategia de afrontamiento). Los principios de la escritura expresiva, el intercambio social de emociones, la persuasión narrativa y los efectos en uno mismo pueden proporcionar información sobre la forma en que esas acciones pueden relacionarse con la autoeficacia como estrategia de afrontamiento. Mediante una encuesta transversal en línea con 311 adolescentes de habla holandesa de entre 14 y 18 años, este artículo explora cómo estas acciones y los motivos del apoyo social (es decir, la búsqueda de información y la búsqueda de apoyo emocional) se relacionan con la autoeficacia de los adolescentes como estrategia de afrontamiento tras usar la web de apoyo entre iguales. Los resultados muestran que la experiencia de los usuarios al leer y responder a narraciones personales no estaba relacionada con su autoeficacia de afrontamiento. Sin embargo, se encontró una relación negativa entre la experiencia de compartir una narración personal y la autoeficacia, por lo que los usuarios no percibieron que el sitio web fuera útil para su confianza general a la hora de hacer frente a acontecimientos estresantes. No obstante, esta relación negativa se invirtió cuando también tenían el objetivo de encontrar apoyo emocional con sus iguales.

1. Introduction

The World Health Organization (2018) states that 1 out of 5 adolescents between the ages of 15 and 19 in the European Region have some form of psychological difficulty. It is therefore important to improve adolescents' coping beliefs and skills, as these may moderate the impact of stressful life events on mental and physical health and functioning (Skinner & Zimmer-Gembeck, 2016).

One important coping strategy is social support seeking, which is defined as "the strategy of turning to other people in the face of stressful events" (Skinner & Zimmer-Gembeck, 2016: 38). However, adolescents might feel uncertain to ask for help from peers in their personal, offline environment. There are two main reasons for this. First, adolescents often believe their personal experiences are unique from those of others and that others cannot possibly help them (Neff & McGehee, 2010). Second, their heightened awareness of others' judgement, makes it harder to look for support in their direct environment.

The specific characteristics of anonymous peer-to-peer support websites (e.g. safety, mutual social norms) make social support with peers more accessible for those who feel reluctant to seek support in an offline context (Prescott et al., 2017; Sun et al., 2014; Vermeulen et al., 2018).

The use of personal narratives on peer-to-peer support websites may provide adolescents with informational and emotional support to feel more confident in coping (i.e. increase their coping self-efficacy). Based on de Graaf et al. (2016) we define an online personal narrative as an online presentation of (a) concrete event(s) experienced by (a) certain person (people) in a specific setting.

While several studies found that their use has positive effects on well-being and self-efficacy with adults (Frattaroli, 2006; Rains & Wright, 2016; Rains & Young, 2009), their effects on adolescents are not often studied (Ali et al., 2015; Barak & Dolev-Cohen, 2006; Yang, 2018). Moreover, recent research has warned about the possible negative effects of online co-rumination on adolescents' mental health (Frison et al., 2019).

By using a cross-sectional online survey with Dutch speaking adolescents between the ages of 14 and 18 who use peer-to-peer support websites, we examined the relationship between specific actions (i.e. experience with reading, responding and sharing) and social support motives (i.e. information-seeking on a question or problem and emotional support-seeking with similar others) are related to adolescents' perceptions about the usefulness of these websites to their coping self-efficacy. We integrate different insights, such as expressive writing theory, self-persuasion and narrative persuasion to explain how the use of anonymous peer-to-peer support websites may have both positive and negative effects on adolescents' coping self-efficacy.

1.1. Online personal narratives and coping self-efficacy

1.1.1. Sharing: expressive writing and social sharing of emotions

To explain the relationship between sharing one's own personal narrative and coping self-efficacy, we rely upon the literature on expressive writing theory and social sharing of emotions. The first implies that someone writes about his/her deepest thoughts and emotions, which allows to reorganize thoughts, gain new insight and reflect upon his/her coping strategies (e.g. How did I cope before? How can I cope better?) (Pennebaker & Seagal, 1999). It was found to come with multiple positive outcomes on well-being, such as lowered depressive symptoms and anxiety and higher coping self-efficacy, and these benefits are likely to be higher if this task is repeated over multiple sessions (Frattaroli, 2006). For example, a study on expressive writing with adolescent girls showed that the respondents had more adaptive coping strategies after 3 sessions of writing about a personal problem (Vashchenko et al., 2007).

However, research on the social sharing of emotions shows that adolescents often have the tendency to dwell on the negative aspects of their experiences when sharing a personal narrative with others (Duprez et al., 2015; Vermeulen et al., 2018). This is likely to make emotions worse in the short term (Choi & Toma, 2014; Pennebaker & Seagal, 1999; Wright & Chung, 2001). Longitudinal research also found rumination and worry may eventually result in more symptoms of depression and anxiety with adolescents (Young & Dietrich, 2015).

1.1.2. Reading: Social cognitive theory and narrative persuasion

The effects of personal narratives on readers may be explained by social cognitive theory and literature on narrative persuasion. Social Cognitive theory assumes that people can learn from exemplary figures in their environment (Bandura, 2001). Based on this theory, research on narrative persuasion found that narratives have significant effects on beliefs, attitudes, intention for action, actual behaviour and self-efficacy (Braddock & Dillard, 2016; Perrier & Martin-Ginis, 2018). Because readers may take others' personal narratives as examples, they may learn how to cope with their own distressing experiences. The premise is that the more frequent adolescents read personal narratives of others, the higher the beneficial effects may be (Braddock & Dillard, 2016).

However, it is possible that readers may also adopt sharers' negative coping approaches and self-efficacy beliefs. Recent research found that stories portraying a protagonist with high self-efficacy beliefs influenced readers own self-related control beliefs in a positive way. But the researchers warned that the opposite might be true as well; that low self-efficacy beliefs by the protagonist may also influence readers' self-related control beliefs in a negative way (Isberner et al., 2019).

1.1.3. Responding: Self-effects and self-persuasion

Based on literature on self-effects on social media, we may expect that giving others the right advice on coping strategies may be a form of self-presentation leading to self-persuasion (Stavrositu & Kim, 2018; Valkenburg, 2017). After providing useful advice to others, responders might regard themselves as experts in coping with stressful events, therefore feeling more confident in setting the right coping behaviours themselves.

However, research also found responders often respond with their own similar negative experience (Bastiaensens et al., 2019; Prescott et al., 2017), therefore risking to start a thread of co-rumination. This concept refers to the repeated exchange of a certain problem between two or more people while focusing on the negative aspects, emotions and thoughts (Rose et al., 2017). Recent research on private conversations on social media found that co-rumination predicted depressive symptoms amongst adolescents between 12 and 19 years old (Frison et al., 2019).

In sum, there may be positive and negative aspects to adolescents' use of personal narrative on peer-to-peer support websites. The main goal of this research is to explore how adolescents' use of personal narratives on peer-to-peer support websites (i.e. sharing, reading and responding to personal narratives) is related to their coping self-efficacy after using these websites. This reflects whether or not adolescents perceive the use of these websites to be helpful to their confidence in coping with stressful events.

- RQ1: How do specific actions (i.e. experience with sharing, reading, responding to personal narratives) relate to adolescents' coping self-efficacy after using peer-to-peer support websites?

1.2. Social support motives and coping self-efficacy

1.2.1. Informational and emotional support as a coping strategy

In order to overcome the possible negative effects of personal narratives on peer-to-peer support websites, it may be important for adolescents to find the social support they need. For example, research on expressive writing (Milbury & López, 2017; Pennebaker & Seagal, 1999; Travagin et al., 2015) and the social sharing of emotions (Rimé et al., 2019) assumes social support of others may strengthen the positive effect of writing about distressing events. Previous research on online social support use also found that the level of perceived social support mediates the positive outcomes of online social support use on well-being, both in adult and adolescent populations (Welbourne et al., 2013). Users of peer-to-peer support websites in general look for informational support, i.e. advice and information on ways to cope with a distressing event, and emotional support, i.e. the exchange of affective and cognitive empathy to enhance mood and find recognition (Rimé, 2009).

Social support may be closely related to adolescents' coping self-efficacy. Informational support may help to "find out more about a stressful situation or condition, including its course, causes, consequences, and meanings, as well as learning about strategies for intervention and remediation" (Skinner & Zimmer-Gembeck, 2016: 37). Emotional support, in turn, resembles "the urge or desire to come into contact with

an attachment figure" (Skinner & Zimmer-Gembeck, 2016: 38). It encourages frequent active use and accounts for the positive relation of online support use with perceived stress (Welbourne et al., 2013) and perceived coping resources (Nabi et al., 2013).

Thus, we expect that the informational support on a question or problem and the emotional support of similar others which adolescents find through sharing, reading and responding to personal narratives may help adolescents to feel more confident in coping with stressful events.

- RQ2: How do social support motives (i.e. informational support on a question or problem and emotional support with similar others) relate to adolescents' coping self-efficacy after using peer-to-peer support websites?

1.2.2. Interactions between social support motives and actions

One action may fulfill one social support motive better than the other. For example, research found that passive users mainly have an information need, whereas active users more often have an emotional support need (Sun et al., 2014; Welbourne et al., 2013). Other research found that active use of peer-to-peer support websites was found to improve psychological well-being through the emotional support from similar others (Sun et al., 2014; van-Uden-Kraan et al., 2008; Welbourne et al., 2013), whereas informational support accounted for readers' improvement in psychological well-being (van-Uden-Kraan et al., 2008).

Therefore, it is interesting to explore the relation between the two social support motives and users' experience with actions, and the possibility of an interaction-effect between the two on coping self-efficacy.

- RQ3: How do social support motives (i.e. informational support on a question or problem and emotional support with similar others) relate to specific actions (i.e. experience with sharing, reading, responding to personal narratives)?
- RQ4: How do interactions between social support motives and actions relate to adolescents' coping self-efficacy after using peer-to-peer support websites?

2. Material and methods
2.1. Procedure

We conducted a cross-sectional survey study with users of peer-to-peer support websites, in this case, adolescents between 14 and 18 years of age. The online survey was distributed with the help of 10 Dutch and Flemish peer-to-peer support websites. All participating websites allowed users to exchange narratives about personal experiences anonymously. Only some of them allowed readers to give a social support response. These included social support fora, which allow users to directly exchange personal narratives and social support responses with each other, and youth (health) information websites, which inform their users about common problems and questions by using personal narratives that are submitted by their users. These websites covered various problems and questions that are important to the adolescence life phase. Some focused on specific themes, such as sexuality, sexual identity or school-related problems.

The participating websites distributed the link to the online survey through their social media platforms or via their webpages meant for the exchange and reading of personal narratives. The participants were asked to clarify which of the participating websites they had visited during the past 12 months to make sure to include only those adolescents who were then making use of these websites or had used these websites in the past. The survey remained online for 20 days, including 2 weekends. A total of 311 adolescent peer-to-peer support website users completed the survey. About 80% were girls, and the mean age was 15.87 years (SD=1,33 years).

2.2. Measures
2.2.1. Social support motives

Social support motives were measured with two items on a scale from 1 (not applicable at all) to 5 (definitely applicable). Items were respectively "I use websites with personal narratives... to search for information about a problem/question I am facing" and "… to connect with people like me for emotional support".

2.2.2. Experience with actions

Previous research only made a distinction in passive (i.e. only reading) and active use (i.e. also responding and sharing) by asking respondents whether they contributed to the website or not (e.g. van-Uden-Kraan et al., 2008). In this study, we wanted to make a distinction between sharing and responding to personal narratives. Experience with reading and responding to others' personal narratives were both measured with a scale from 1 to 4 (1=never, 2=once, 3=less than 5 times, 4=five times or more), measuring users' general experience with these actions in the past 12 months.

Sharing personal narratives was measured with a scale from 2 to 8, reflecting sum scores of sharing personal narratives on support fora and (health) information websites (both measured on a scale from 1 to 4; see above).

These measures were chosen in agreement with the participating websites, who stated that frequent passive users visit their websites 5 times or more in the course of a year and frequent active users post 5 times or more during the course of a year.

2.2.3. Coping self-efficacy

We used the Coping Self-efficacy scale (CSE) by Chesney et al. (2006). This scale contains three factors that relate to self-confidence in using effective coping styles, i.e. using problem-focused coping strategies to solve a problem (CSE problem, 6 items), overcoming unpleasant emotions and thoughts (CSE emotion, 4 items), and getting support from friends and family in an offline context (CSE support, 2 items). We will use the abbreviated form of these factors when describing the results of this study. One item was left out from the original scale, because it had a low factor loading (i.e. making new friends).

The scale was introduced using the following sentence: "After using personal narratives on these websites (either reading others' personal narratives, reacting to others' personal narratives and/or sharing my own personal narratives) I have more confidence in myself to...". This measure reflects how useful they find these websites to their confidence in coping with stressful events. Items were measured on a scale from 1 (not at all) to 7 (totally).

2.3. Data analyses

Univariate and bivariate statistics were calculated in order to explore the correlations between the variables. A measurement model was tested in Mplus 8.3 using confirmatory factor analysis (Anderson & Gerbing, 1988). We used the three factors of coping self-efficacy as three separate dependent variables in the model. The goodness-of-fit criteria indicated that the measurement model fitted well (CFI=.984; RMSEA=.034, 90% C.I. [.000-.055]; $\chi^2(41)=55.77$, p=.06).

The standardized factor loadings of the six items of the latent construct CSE problem ranged from .63 to .73, the factor loadings of the four items of the latent construct CSE emotion ranged from .69 to .74, and the factor loadings of the two items measuring CSE support were .80 and .95. In a next step, structural equation modeling was applied in order to investigate the associations between the main variables using Mplus with MLR estimation.

3. Results

3.1. Descriptives

Table 1 shows the correlations between the variables. The mean score of information-seeking and emotional support-seeking was respectively 3.63 (SD=1.39) and 2.30 (SD=1.81). These social support motives were uncorrelated, reflecting that these are distinctive motives. About 60% of all respondents read 5 or more personal narratives during the past 12 months. 60% had never responded on a personal narrative, whereas 15% had responded more than 5 times. 40% had shared their own personal narrative at least once during the past 12 months.

All actions were correlated, especially responding and sharing. This means that those who share personal narratives are also more likely to respond to others' personal narrative and vice versa. In this sample CSE problem, CSE emotion and CSE support had mean scores of 4.18 (SD=1.22), 4.11 (SD=1.36) and 3.96 (SD=1.68). Especially CSE problem and CSE emotion were highly correlated.

Thus, the more a participant believes that the use of these websites helps them to solve problems, the more s/he believes that they also help to cope with difficult emotions and thoughts, and vice versa.

		1	2	3	4	5	6	7	8	9	10
Table 1. Descriptives											
Correlations between the main variables											
1	Gender	1	-								
2	Age	.075	1	-							
3	Information seeking	.102	-.096	1	-						
4	Emotional Support seeking	.037	-.081	.072	1	-					
5	Read	.015	-.008	.180**	.240***	1	-				
6	Respond	-.166**	-.174**	.037	.276***	.341***	1	-			
7	Share	-.051	-.078	.083	.244***	.229***	.590***	1	-		
8	CSE problem	.124*	-.079	.160**	.176**	.055	.009	-.024	1	-	
9	CSE emotion	.052	-.090	.085	.142*	.060	.025	-.036	.689***	1	-
10	CSE support	.049	.001	-.013	.174**	.057	.058	-.002	.412**	.386***	1
	M		15,87	3,63	2,30	3,38	1,89	2,85	4,18	4,11	3,96
	SD		1,33	1,39	1,81	0,867	1,16	1,35	1,22	1,36	1,68
	Range		14-18	1-5	1-5	1-4	1-4	2-8	1-7	1-7	1-7

Note. CSE problem=self-efficacy in coping with a problem; CSE emotion=self-efficacy in coping with negative emotions and thoughts; CSE support=self-efficacy in asking friends and family for help. *p<.05. **p<.01. ***p<.001.

3.2. Structural equation model

Figure 1 presents the standardized results of the Structural Equation Model. The measurement details correlations are, for clarity, not shown. The fit indices showed a good fit for the model: CFI=.918; RMSEA=.049, 90% C.I. [.039 - .058]; χ^2(159)=275.96, p<.001. The explained variances of the three different forms of coping self-efficacy ranged from .085 to .163 (CSE problem: .163; CSE emotion: .117; CSE support: .085).

First, the structured model revealed associations between social support motives and experiences with actions. Both motives, information seeking (β=.16, p<.01) and emotional support seeking (β=.23, p<.001), predicted experience with reading online personal narratives. Emotional support seeking predicted experience with responding to others' (β=.28, p<.001) and sharing one's own personal narrative (β=.24, p<.001), but information seeking did not predict these actions.

Secondly, the model also showed the associations between motives and coping self-efficacy. Information seeking (β=.16, p<.01) and emotional support seeking (β=.19, p<.01) significantly predicted an increase in CSE problem. Furthermore, emotional support seeking also predicted an increase in CSE emotion (β=.15, p<.05) and CSE support (β=.17, p<.01). Third, the structural model consisted of associations between experiences with actions and different forms of CSE. Only one of the actions, experience with sharing one's own online personal narratives, significantly predicted changes in CSE.

More experience with sharing one's own personal narratives online was associated with lower CSE problem (β=-.23, p<.05), lower CSE emotion (β=-.21, p<.05), and lower CSE support (β=-.17, p=.05). The latter association was borderline non-significant. Finally, the model indicated the importance of two specific interaction terms in predicting CSE. More precisely, the interaction between emotional support seeking and having experience with responding to online personal narratives was a significant negative predictor of CSE problem (β=-.18, p<.05).

Furthermore, the interaction term between emotional support seeking and experience with sharing one's own narratives on peer-to-peer support websites significantly predicted an increase in CSE problem (β=.30, p<.001), CSE emotion (β=.25, p<.01) and CSE support (β=.20, p<.05).

Figure 1. Illustration of the Structural Equation Model

Note. CSE problem=self-efficacy in applying problem-focused coping strategies; CSE emotion=self-efficacy in overcoming negative emotions and thoughts; CSE support=self-efficacy in asking friends and family for help
*p<.05. **p<.01. ***p<.001.
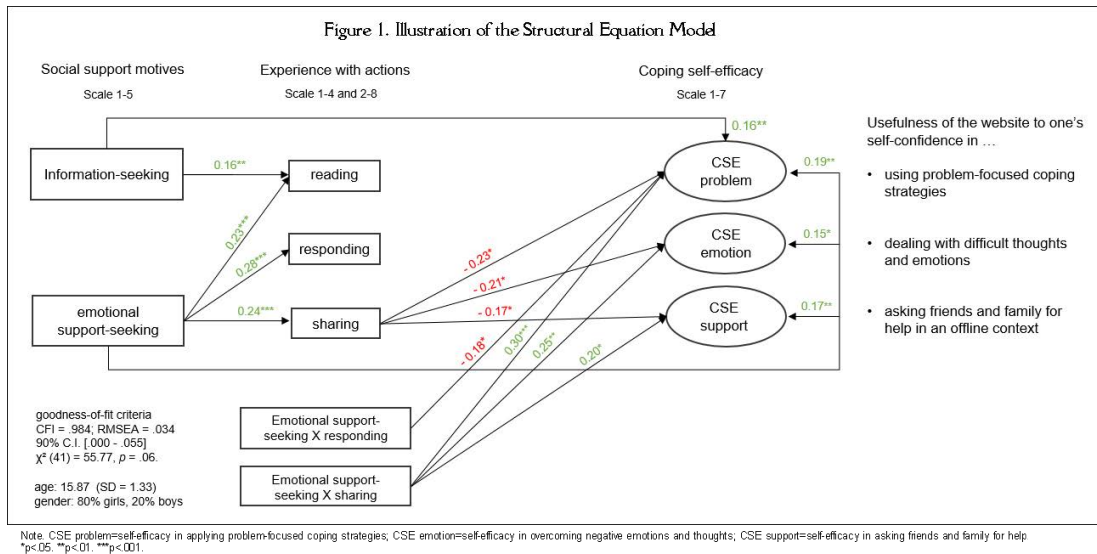
4. Discussion and conclusion

4.1. Discussion

This study aimed to explore the relationship between social support motives to use personal narratives on peer-to-peer support websites (i.e. information seeking about a question or problem and emotional support seeking with similar others), actions (i.e. experience with sharing, reading, responding to personal narratives) and adolescents' belief in the usefulness of these websites for their confidence in coping with stressful events (i.e. increase in coping self-efficacy). Coping self-efficacy was further divided in self-confidence in applying problem-focused coping strategies to solve problems, dealing with difficult emotions and thoughts, and finding support with friends and family in an offline context.

The positive relations between social support motives and actions show that information seeking is mainly a social support motive for frequent readers. In addition, emotional support seeking from similar others is a strong social support motive for users who have more experience with all actions (i.e. sharing, reading and responding). Where other research suggests that readers mainly look for information in others' personal narratives (Sun et al., 2014; Welbourne et al., 2013), this finding reflects that readers may also look for emotional support.

The positive relations between social support motives and coping self-efficacy reflect that information-seeking may help users feel more confident in using problem-focused coping strategies to solve a problem (CSE problem). As explained before, Skinner & Zimmer-Gembeck also suggest that informational support is helpful to learn "about strategies for intervention and remediation" (Skinner & Zimmer-Gembeck, 2016: 37). Using these personal narratives for emotional support-seeking with similar others may help users to feel more confident in overcoming unpleasant emotions and thoughts (CSE emotion) and asking friends and family for help (CSE support). This is (missing verb) in line with previous research, which suggests that it lowers perceived stress (Welbourne et al., 2013) and strengthens perceived coping resources (Nabi et al., 2013). Emotional support-seeking was also related to higher confidence in using problem-focused coping strategies (CSE problem). It is likely that users believe similar others cannot only provide the best emotional support, but also the most specific and valuable information on how to solve familiar problems.

The results show that experiences with reading and responding are not related to any form of coping self-efficacy. This is not in line with the expectations based on literature on narrative persuasion and self-persuasion. A possible explanation is that the (positive and negative) effects of reading and responding to personal narratives on peer-to-peer support websites are small and subconscious. Moreover, this effect may be very dependent upon the specific narrative in question. Certain narrative characteristics, especially a sense of similarity between characters, settings and events (Green, 2004; Hoeken et al., 2016) and emotionality (Nabi & Green, 2015), are found to strengthen the persuasive effect.

A negative relation is found between experience in sharing personal narratives on peer-to-peer support websites and all forms of coping self-efficacy. Thus, adolescent users who have more experience with sharing personal narratives reported feeling less confident in using problem-focused coping strategies to solve a problem (CSE problem), overcoming unpleasant emotions and thoughts (CSE emotion) and asking for help with friends and family (CSE support) after using peer-to-peer support websites. This means that these users did not perceive the use of these websites to be helpful to their confidence in coping with stressful events. As explained in the literature review, a possible explanation is that users who often write about distressing events reinforce their negative emotions (Choi & Toma, 2014; Wright & Chung, 2001). It may also reflect that adolescents who submitted a personal narrative did not get the support they had hoped for or did not get a social support response at all. For example, readers may respond with their own similar negative experiences, therefore starting a thread of co-rumination. Although sharers have the motive to connect with similar others and hear about their experiences, they may mostly look for a positive affirmation and validation of their own feelings and thoughts, rather than hearing about similar others' negative experiences, thoughts and emotions. Some of the youth (health) information websites participating in this study did not allow readers to provide social support responses to sharers' personal narratives. This may affect how sharers perceived the usefulness of these websites to their confidence in coping.

The interaction effects between social support motives and experience with actions show that the benefits and threats to the use of these narratives may depend on the underlying motives for use. Firstly, the negative relation between sharing and all forms of coping self-efficacy is reversed when frequent sharers also have the motive to seek emotional support through the connection with similar others. The possibility to get social support and find social connection with similar others may maximize the benefits and minimize the costs of sharing a personal narrative (Milbury et al., 2017; Pennebaker & Seagal, 1999; Travagin et al., 2015). Moreover, younger adolescents (approximately 12 to 15 years old) may not have required all needed competences for effective reflection on stressful experiences (Berk, 2014; Skinner & Zimmer-Gembeck, 2016). Some adolescents may therefore benefit from the support of others, preferably from peers with similar experiences, to make sense of their experiences (Pennebaker & Seagal, 1999; Skinner & Zimmer-Gembeck, 2016). Secondly, adolescents who are more experienced with responding to personal narratives of others and have the motive to seek support through the connection with similar others report feeling less confident in using problem-solving strategies (CSE problem) after using peer-to-peer support websites. A possible explanation is that responders are affected by negative emotions of sharers and therefore respond with their own negative experiences (co-rumination), which may reinforce their negative emotions (Frison et al., 2019). Another explanation may be a lack of credit for users' feedback (Bastiaensens et al., 2019). This may lead responders to believe their response was not useful, which may lower responders' confidence in dealing with difficulties themselves. This might be harder if adolescents respond to personal narratives to get into contact with similar others.

4.2. Practical recommendations

From this study, practical recommendations for peer-to-peer support websites may be derived. Previous research on online support websites has pointed out the need to adjust the interface design to users' expectations for maximal benefit (Li et al., 2015; Moses et al., 2018; Sun et al., 2014). This study shows that frequent users (sharers, readers, and responders) have the need to connect with similar others for emotional support. We suggest these websites to provide more possibilities for users to connect with each other and to make sure that responders are credited for their contributions. Nevertheless, it is not clear how respondents interpret this need for connection with similar others. For example, adolescents may look for users with similar experiences, but may also feel more comfortable disclosing to other users who are similar in terms of gender, age, hobbies, interests, etc. More qualitative research is needed to understand how the websites' characteristics and interface design may better respond to this need.

We expect that the interface design may help users to reflect more effectively on others' and their own experiences in order to strengthen their coping self-efficacy. The need to steer users' reflection processes through specific instructions or interfaces may be higher for adolescents who have not yet developed all

cognitive and emotional skills to reflect effectively about distressing events compared to adults (Travagin et al., 2015; Wright & Chung, 2001).

Based on expressive writing theory, self-persuasion and expressive writing, we suggest that an adapted interface design may help users to focus on the positive aspects of their experiences and their effective coping strategies instead of negative thoughts and emotions to improve their confidence in coping. Research on expressive writing claimed that writers may need to be steered in their reflection process in order to experience maximal benefits (Wright & Chung, 2001). This need may be higher for adolescents who have not yet developed all cognitive and emotional skills to reflect in an effective way about distressing events (Travagin et al., 2015). For example, a study on an expressive writing intervention with adolescents found that providing adolescents with the instruction to write about the benefits of a distressing experience showed more positive results than a standard expressive writing intervention (Facchin et al., 2014). At last, these interface adaptations may also lead to more helpful narratives and feedback that better respond to readers' need for information.

We can also formulate recommendations for educational purposes. First, educators could give more attention to online peer-to-peer support use when addressing adolescents' internet literacy. Teachers should not only inform adolescents about the platforms that are available to them and the positive effects resulting from their use, but they should also address the possible negative effects, such as co-rumination, heightened negative emotions and risk for adopting negative coping strategies. Secondly, schools could play an important role in adolescents' coping self-efficacy by offering coping competency trainings to help them distinguish between effective and ineffective coping strategies dependent upon specific situations.

4.3. Limitations and future research

Due to the small sample size and small percentage of male participants, we were not able to check for age and gender differences. However, social support needs and coping strategies may be linked to age and gender. Especially younger adolescents (approximately 12 to 15 years old) may not have required all needed competences for effective reflection on stressful experiences (Berk, 2014; Skinner & Zimmer-Gembeck, 2016) and due to gender socialization differences, writing about a stressful experience and co-rumination may have different effects on girls and boys (Yang, 2018). Since our sample mostly consisted of adolescent girls, the findings of this study may mostly apply to adolescent girls. Further research should strive for a more balanced sample in terms of age and gender. Moreover, this study did not take adolescents' general emotional state into account, which may have influenced how they perceive the use of peer-to-peer support websites. Therefore, further research should address emotional state.

This study used self-developed and self-report measures for social support motives and experiences with actions based on the coping literature and previous studies on peer-to-peer support use. Consequently, these measures were not validated by previous research and further research would benefit from objective data.

Many questions remain on the relationship between actions in relation to personal narratives (i.e. sharing, reading and responding) and coping self-efficacy. It is possible that the relations we propose are mostly subconscious. Therefore, experimental research is needed to study these relations in more detail.

Finally, there are different ways to explain why some active users did not perceive the use of these websites to be helpful to their coping self-efficacy. We propose that the characteristics of the websites may contribute to this effect. Due to the quantitative method we used, we could not take into consideration the characteristics and design differences between the peer-to-peer support websites that were part of our study. Further qualitative research methods, such as interviews and focus groups with adolescent users of peer-to-peer support websites are required to further explore adolescents' opinions and expectations regarding peer-to-peer support websites.

4.4. Final conclusion

By applying expressive writing theory, self-persuasion and narrative persuasion theory to the context of peer-to-peer support websites, the present study suggests that adolescents' use of personal narratives

may both strengthen as well as pose a threat to adolescents coping self-efficacy depending on their specific actions and motives for use. Adolescents' informational and emotional support-seeking behavior on these websites may positively contribute to adolescents' confidence in coping with distressing events. However, those who frequently shared a personal narrative did not perceive the use of these websites to be helpful to their confidence in coping with stressful events. This may be due to heightened negative emotions and the risk for (co-)rumination. Nevertheless, those frequent sharers who also have the motive to connect with similar others for emotional support were more positive about the use of these websites. We therefore suggest that the possibility to connect with similar others on peer-to-peer support websites is an important factor. The current way in which adolescents exchange personal narratives on peer-to-peer support websites may not sufficiently serve the purpose of reflection on, and exchanging of, effective coping strategies. Further research should explore what expectations adolescents hold for peer-to-peer support websites and whether the interface design can help adolescent users to reflect more effectively on their stressful experiences and feel more self-confident in coping.

Funding Agency

References

Ali, K., Farrer, L., Gulliver, A., & Griffiths, K.M. (2015). Online peer-to-peer support for young people with mental health problems: A systematic review. *JMIR Mental Health*, *2*(2), e19-e19. https://doi.org/10.2196/mental.4418

Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*(1), 1-26. https://doi.org/10.1146/annurev.psych.52.1.1

Barak, A., & Dolev-Cohen, M. (2006). Does activity level in online support groups for distressed adolescents determine emotional relief. *Counselling and Psychotherapy Research*, *6*(3), 186-190. https://doi.org/10.1080/14733140600848203

Bastiaensens, S., Van-Cleemput, K., Vandebosch, H., Poels, K., Desmet, A., & De-Bourdeaudhuij, I. (2019). Were you cyberbullied? Let me help you. Studying adolescents' online peer support of cyberbullying victims using thematic analysis of online support group fora. In *Narratives in research and interventions on cyberbullying among young people* (pp. 95-112). Springer International Publishing. https://doi.org/10.1007/978-3-030-04960-7_7

Berk, L. (2014). *Developement through the lifespan*. Pearson. https://bit.ly/33yHard

Braddock, K., & Dillard, J.P. (2016). Meta-analytic evidence for the persuasive effect of narratives on beliefs, attitudes, intentions, and behaviors. *Communication Monographs*, *83*(4), 446-467. https://doi.org/10.1080/03637751.2015.1128555

Chesney, M., Torsten, N., Chambers, D., Taylor, J., & Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. *British Journal of Health Psychology*, *11*(3), 421-437. https://doi.org/10.1348/135910705x53155

De-Graaf, A., Sanders, J., & Hoeken, H. (2016). Characteristics of narrative interventions and health effects: A review of the content, form, and context of narratives in health-related narrative persuasion research. *Review of Communication Research*, *1*, 88-131. https://doi.org/10.12840/issn.2255-4165.2016.04.01.011

Duprez, C., Christophe, V., Rimé, B., Congard, A., & Antoine, P. (2015). Motives for the social sharing of an emotional experience. *Journal of Social and Personal Relationships*, *32*(6), 757-787. https://doi.org/10.1177/0265407514548393

Facchin, F., Margola, D., Molgora, S., & Revenson, T.A. (2014). Effects of benefit-focused versus standard expressive writing on adolescents' self-concept during the high school transition. *Journal of Research on Adolescence*, *24*(1), 131-144. https://doi.org/10.1111/jora.12040

Frattaroli, J. (2006). Experimental disclosure and its moderators: A meta-analysis. *Psychological Bulletin*, *132*(6), 823-865. https://doi.org/10.1037/0033-2909.132.6.823

Frison, E., Bastin, M., Bijttebier, P., & Eggermont, S. (2019). Helpful or harmful? The different relationships between private facebook interactions and adolescents' depressive symptoms. *Media Psychology*, *22*(2), 244-272. https://doi.org/10.1080/15213269.2018.1429933

Green, M.C. (2004). Transportation into narrative worlds: the role of prior knowledge and perceived realism. *Discourse Processes*, *38*, 247-266. https://doi.org/10.1207/s15326950dp3802_5

Hoeken, H., Kolthoff, M., & Sanders, J. (2016). Story perspective and character similarity as drivers of identification and narrative persuasion. *Human Communication Research*, *42*(2), 292-311. https://doi.org/10.1111/hcre.12076

Isberner, M.B., Richter, T., Schreiner, C., Eisenbach, Y., Sommer, C., & Appel, M. (2019). Empowering stories: Transportation into narratives with strong protagonists increases self-related control beliefs. *Discourse Processes*, *56*(8), 575-598. https://doi.org/10.1080/0163853x.2018.1526032

Li, S., Feng, B., Li, N., & Tan, X. (2015). How social context cues in online support-seeking influence self-disclosure in support provision. *Communication Quarterly*, *63*(5), 586-602. https://doi.org/10.1080/01463373.2015.1078389

Milbury, K., Lopez, G., Spelman, A., Wood, C., Matin, S.F., Tannir, N.M., Jonasch, E., Pisters, L., Wei, Q., & Cohen, L. (2017). Examination of moderators of expressive writing in patients with renal cell carcinoma: The role of depression and social support.

Psycho-Oncology, 26(9), 1361-1368. https://doi.org/10.1002/pon.4148

Moses, J., Dwyer, P., Fuglestad, P., Kim, J., Maki, A., Snyder, M., & Terveen, L. (2018). Encouraging online engagement: The role of interdependent self-construal and social motives in fostering online participation. *Personality and Individual Differences*, 133, 47-55. https://doi.org/10.1016/j.paid.2017.06.035

Nabi, R., & Green, M.C. (2015). The role of a narrative's emotional flow in promoting persuasive outcomes. *Media Psychology*, 18(2), 137-162. https://doi.org/10.1080/15213269.2014.912585

Nabi, R., Prestin, A., & So, J. (2013). Facebook friends with (health) benefits? Exploring social network site use and perceptions of social support, stress, and well-being. *Cyberpsychology, Behavior, and Social Networking*, 16(10), 721-727. https://doi.org/10.1089/cyber.2012.0521

Neff, K., & McGehee, P. (2010). Self-compassion and psychological resilience among adolescents and young adults. *Self and Identity*, 9(3), 225-240. https://doi.org/10.1080/15298860902979307

Pennebaker, J., & Seagal, J. (1999). Forming a story: The health benefits of narrative. *Journal of Clinical Psychology*, 55(10), 1243-1254. https://doi.org/10.1002/(sici)1097-4679(199910)55:10<1243::aid-jclp6>3.0.co;2-n

Perrier, M.J., & Martin-Ginis, K.A. (2018). Changing health-promoting behaviours through narrative interventions: A systematic review. *Journal of Health Psychology*, 23(11), 1499-1517. https://doi.org/10.1177/1359105316656243

Prescott, J., Hanley, T., & Ujhelyi, K. (2017). Peer communication in online mental health forums for young people: Directional and nondirectional support. *JMIR Mental Health*, 4(3), e29-e29. https://doi.org/10.2196/mental.6921

Rains, S., & Wright, K.B. (2016). Social support and computer-mediated communication: A state-of-the-art review and agenda for future research. *Annals of the International Communication Association*, 40(1), 175-211. https://doi.org/10.1080/23808985.2015.11735260

Rains, S., & Young, V. (2009). A meta-analysis of research on formal computer-mediated support groups: Examining group characteristics and health outcomes. *Human Communication Research*, 35(3), 309-336. https://doi.org/10.1111/j.1468-2958.2009.01353.x

Rimé, B. (2009). Emotion elicits the social sharing of emotion: Theory and empirical review. *Emotion Review*, 1(1), 60-85. https://doi.org/10.1177/1754073908097189

Rimé, B., Bouchat, P., Paquot, L., & Giglio, L. (2019). Intrapersonal, interpersonal, and social outcomes of the social sharing of emotion. *Current Opinion in Psychology*, 31, 127-134. https://doi.org/10.1016/j.copsyc.2019.08.024

Rose, A., Glick, G., Smith, R., Schwartz-Mette, R., & Borowski, S. (2017). Co-rumination exacerbates stress generation among adolescents with depressive symptoms. *Journal of Abnormal Child Psychology*, 45(5), 985-995. https://doi.org/10.1007/s10802-016-0205-1

Skinner, E.A., & Zimmer-Gembeck, M.J. (2016). *The development of coping*. Springer International Publishing. https://doi.org/10.1007/978-3-319-41740-0

Stavrositu, C., & Kim, J. (2018). Self-persuasion through mobile applications: Exploring different routes to health behavioral change. *Cyberpsychology, Behavior, and Social Networking*, 21(8), 516-522. https://doi.org/10.1089/cyber.2018.0079

Sun, N., Rau, P.P.L., & Ma, L. (2014). Understanding lurkers in online communities: A literature review. *Computers in Human Behavior*, 38, 110-117. https://doi.org/10.1016/j.chb.2014.05.022

Travagin, G., Margola, D., & Revenson, T.A. (2015). How effective are expressive writing interventions for adolescents? A meta-analytic review. *Clinical Psychology Review*, 36, 42-55. https://doi.org/10.1016/j.cpr.2015.01.003

Valkenburg, P. (2017). Understanding self-effects in social media. *Human Communication Research*, 43(4), 477-490. https://doi.org/10.1111/hcre.12113

Van-Uden-Kraan, C., Drossaert, C., Taal, E., Seydel, E., & van-de Laar, M. (2008). Self-reported differences in empowerment between lurkers and posters in online patient support groups. *Journal of Medical Internet Research*, 10(2), 1-10. https://doi.org/10.2196/jmir.992

Vashchenko, M., Lambidoni, E., & Brody, L.R. (2007). Late adolescents' coping styles in interpersonal and intrapersonal conflicts using the narrative disclosure task. *Clinical Social Work Journal*, 35(4), 245-255. https://doi.org/10.1007/s10615-007-0115-3

Vermeulen, A., Vandebosch, H., & Heirman, W. (2018). #Smiling, #venting, or both? Adolescents' social sharing of emotions on social media. *Computers in Human Behavior*, 84, 211-219. https://doi.org/10.1016/j.chb.2018.02.022

Welbourne, J.L., Blanchard, A.L., & Wadsworth, M.B. (2013). Motivations in virtual health communities and their relationship to community, connectedness and stress. *Computers in Human Behavior*, 29(1), 129-139. https://doi.org/10.1016/j.chb.2012.07.024

World Health Organization (Ed.) (2018). *Adolescent mental health in the European Region*. https://bit.ly/36sLkD4

Wright, J., & Chung, M. (2001). Mastery or mystery? Therapeutic writing: A review of the literature. *British Journal of Guidance & Counselling*, 29(3), 277-291. https://doi.org/10.1080/03069880120073003

Yang, Q. (2018). Understanding computer-mediated support groups: A revisit using a meta-analytic approach. *Health Communication*, 35(2), 1-13. https://doi.org/10.1080/10410236.2018.1551751

Young, C., & Dietrich, M. (2015). Stressful life events, worry, and rumination predict depressive and anxiety symptoms in young adolescents. *Journal of Child and Adolescent Psychiatric Nursing*, 28(1), 35-42. https://doi.org/10.1111/jcap.12102

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Parents' and children's perception on social media advertising

La percepción de padres e hijos chilenos sobre la publicidad en redes sociales

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ABSTRACT

This article presents the results of research that seeks to analyze the ability of minors to identify the advertising messages received through the most used social networks by this audience (YouTube and Instagram). Children's aptitude to recognize persuasive intent was measured in a selection of examples taken for this study, as well as the perception that parents or guardians had about the minor's ability to recognize advertising on the platforms analyzed. Results were obtained from a survey applied to dyads in 501 homes in the Metropolitan Area of Santiago de Chile, to children aged 10 to 14 and to one of their parents or guardians. Main results include the notion that more than 50% of children were not able to detect advertising in examples containing ads. Lower recognition percentages were obtained in cases that combined persuasive content and entertainment and were not classified as advertising. For their part, adults perceived that their children recognize persuasive intent to a lesser extent than indicated by the children themselves. An explicit and clear signaling of advertising messages, as well as advertising literacy according to the age of minors could help them discern the content they consume on social networks.

RESUMEN

Este artículo presenta los resultados de una investigación que analiza la capacidad del menor para identificar los mensajes publicitarios que recibe a través de las redes sociales de más uso entre este perfil de audiencia (YouTube e Instagram). Se midió la aptitud de niños y niñas para reconocer la intencionalidad persuasiva en una selección de ejemplos tomados para este estudio. Adicionalmente se analizó también la percepción que sus padres o adultos responsables declararon tener sobre dicha capacidad de los menores. Los resultados provienen de una encuesta aplicada en díadas en 501 hogares del Área Metropolitana de Santiago de Chile tanto a niños y niñas entre 10 y 14 años como a uno de sus padres o adulto responsable. Entre los principales resultados destaca que en los ejemplos propuestos la mayoría de los encuestados (más de un 50%) no fue capaz de detectar publicidad en contenidos que sí la integraban. Los porcentajes de reconocimiento fueron incluso inferiores en aquellos casos que entremezclaban contenido persuasivo y entretenimiento y que no estaban catalogados como publicitarios. Por su parte, padres y madres percibieron que sus hijos reconocen la intencionalidad persuasiva en menor medida que lo indicado por ellos. Una señalización explícita y clara de los mensajes publicitarios, así como una alfabetización publicitaria acorde a la edad de los menores podrían ayudarles a discernir los contenidos que consumen en redes sociales.

KEYWORDS | PALABRAS CLAVE

Advertising, minors, social networks, Instagram, Youtube, advertising literacy.
Publicidad, menores, redes sociales, Instagram, YouTube, alfabetización publicitaria.

1. Introduction

1.1. Advertising literacy in the face of new digital advertising formats

Social networks take up a large percentage of online time among young Chileans, especially YouTube and Instagram (VTR, 2019; Feijoo & García, 2019; Cabello et al., 2020) and therefore have become very attractive for commercial brands. Social platforms enable the establishment of a dialogue with target audiences, as well as increased sales and brand familiarity. They have also become an important source of reference that users trust when searching for product or brand information (IAB Spain, 2020).

The fact that the audience is reached via a personal digital device strengthens the invasive nature of advertising messages (Martí-Pellón & Saunders, 2015; Truong & Simmons, 2010). Digital advertising can be perceived as less annoying when it contains humor (Goodrich et al., 2015) or can be skipped or closed (Feijoo & García, 2019). Commercial content that includes rewards, special effects, immersion elements or appearances by well-known people or influencers trigger better attitudes (De-Cicco et al., 2020). Currently, despite their lack of transparency (Van-Reijmersdal & Rozendaal, 2020), there is an increasing presence of messages in which commercial, informative and playful content are mixed, and in which the boundaries between types of content constantly cross (Tur-Viñes et al., 2019; Feijoo & Pavez, 2019).

Recent studies on influencer marketing among young audiences (De-Jans & Hudders, 2020) show that the minors' ability to interpret advertising messages decreases when influencers do not mention the brand interference on their sponsored content. Furthermore, young people accept the presence of brands and sponsorships in the content presented by their opinion leaders as long as the balance between entertainment and commercial content is perceived as undisturbed in the videos (Van-Dam & Van-Reijmersdal, 2019; Feijoo et al., 2020). In addition to the greater difficulty in recognizing the persuasive intentionality of influencer-supported formats (Rozeendaal et al., 2013), added risks derive from a lack of warnings, given the absence of specific regulation and the credibility these formats are granted (Tur-Viñes et al., 2018; Feijoo & Pavez, 2019). Following the implementation of the COPPA (Children's Online Privacy Protection Act), for example, YouTube has placed more restrictions on this type of content when it is aimed at children under 13 years of age.

In 2018, the Board of Advertising Self-Regulation and Ethics (Consejo de Autorregulación y Ética Publicitaria) (CONAR, 2018) updated the Chilean Code of Advertising Ethics by incorporating a new article (#33) devoted specifically to advertising regulation in digital and interactive media, and social networks. The article specifies that all commercial communication broadcast by these media must be clearly identifiable as such, based on the principles of identification and transparency. With regard to influencers, who mainly disseminate their content on social networks, the article specifies that any commercial link must be clearly and visibly identified so that the consumer is aware that opinions delivered in videos respond to an interest, whether that be economic or in kind.

Therefore, it is necessary to question the level of preparation of minors in the face of new digital advertising formats, that is, their level of advertising literacy. Following Rozendaal et al. (2013), advertising literacy, also called persuasive knowledge, consists of two dimensions: first, the conceptual dimension that implies the recognition of advertising, which is to say the understanding of the commercial source and its intention and of the persuasive techniques of advertising, as well as the bias these introduce with respect to reality; and second, the attitudinal dimension, which is associated with critical attitudes towards advertising. Meanwhile, Hudders et al. (2017) study advertising literacy at the dispositional (possession of knowledge and skills) and situational level (actual processing of a specific advertisement).

A number of research projects on new digital advertising formats (An et al., 2014; Van-Reijmersdal et al., 2017; Vanwesenbeeck et al., 2017) have shown that conceptual knowledge of the persuasive intentionality of advertising is necessary, but not sufficient for minors to properly process a message (Livingstone & Helsper, 2006; Rozendaal et al., 2011). According to the PCMC (Processing of Commercialized Media Content) model proposed by Buijzen et al. (2010), children apply low-effort cognitive processing when faced with these new digital advertising formats, and do not activate the associative network of knowledge that they have developed about the advertising phenomenon (Mallinckrodt & Mizerski, 2007; An et al., 2014; Vanwesenbeeck et al., 2017; Van-Reijmersdal et al., 2017). Many of these studies, which focused

on videogame advertising, found that the recognition of the advertising intention of a message does not automatically lead to the ability to question and interpret the content received.

Low cognitive elaboration conditions while processing these new advertising formats may be worsened by other reasons such as the fact that the child's attention is concentrated on the recreational aspects of the format, which places the processing of the persuasive message to the background. This is observed in advergaming, (Vanwesenbeeck et al., 2017), where the positive feeling induced by the game is likely to be transferred to the attitude about the brand and vice versa (Mallinckrodt & Mizerski, 2007). Consequently, the studies cited here highlight the need to reinforce advertising literacy from an attitudinal dimension, which would be much more effective in leading minors to question and interpret an advertisement. Thus, attitudes such as skepticism (assessing the biased approach of advertising) or liking/disliking are central in this low-effort processing of new digital advertising formats.

In their conclusions, An et al. (2014) emphasize the importance of having minors perceive these new formats as advertising to achieve effective message processing. Hence, this article focuses on the recognition process of the advertising phenomenon. Similarly, the degree of familiarity and experience that the minor has developed with the medium in which the advertising is inserted could also influence the persuasive effect. In addition, the ability to critically confront advertising depends on the development of cognitive skills which gradually appear as children grow older, and therefore the literacy process needs to be appropriate for the age (Hudders et al., 2017).

1.2. The role of families in the advertising literacy of minors

Families are key agents in the training of children as consumers (Buijzen, 2014; Oates et al., 2014). Studies carried out in various countries reflect the concern of parents about the advertising their children face (Buijzen, 2014; Oates et al., 2014). On the one hand, parents are aware that children do not have sufficient cognitive skills to understand the nature of advertising and its intentionality. On the other, parents show their concern about the possible negative effects of these messages, such as instilling materialistic values, excessive desire to buy or unhealthy eating habits (Buijzen, 2014).

Regarding the nature of advertising, parents maintain that ads take advantage of the naivety of children who can literally believe what is being advertised to them (Ip et al., 2007; Tziortzi, 2009). Research by Young et al. (2003) among parents from Sweden, New Zealand and the United Kingdom, highlighted that adults recognize that advertising pushes children to pressure their elders to buy the advertised products, that children are excessively vulnerable and that the more advertising minors are exposed to, the bigger the desire they have for the advertised products.

When parents are asked about the means through which their children receive advertising messages, they mainly point to television (Oates et al., 2014) and seem to be less aware of other sources, as concluded by Watts (2004), whose studies confirmed that less than a third of the parents were aware of the marketing activities carried out within schools (school contests, visits, promotions, and others). The academic discussion around linking children to other marketing activities such as the one here studied is relatively much smaller compared to television (Oates et al., 2014).

The presence of parents in a partner-spectator role provides them with an opportunity to mediate the content that minors receive on a multiscreen environment, and to teach them to differentiate between what is real or fiction, and thus promote healthy consumer values (Saraf et al., 2013).

2. Material and methods

2.1. Research objectives and questions

This study specifically seeks to analyze the ability of children to recognize persuasive content on social networks (YouTube and Instagram) by exposing them to selected cases for this study. Minors were asked to identify the messages which are described in Table 2. Their responses were compared with the perception of the adults on the children's ability to detect such advertising content. Ultimately, this study aims to deepen the level of advertising literacy of minors in the face of new digital formats, especially those that combine advertising and entertainment. The results presented in this article are part of the research project (Fondecyt Initiation N. 11170336) on children, mobile devices and advertising formulated for the purpose

of knowing what use is made of and what is consumed by minors aged 10 to 14 years of age living in the metropolitan area of Santiago de Chile, through their mobile devices. This was done to subsequently strengthen their ability to mediate with the advertising they receive through their favorite platforms. This study was designed in dyads to address the phenomenon both from the point of view of the children themselves and that of their parents.

To do this, face-to-face surveys were administered in 501 households, to both boys and girls ages 10 to 14 and to one of their parents or legal guardians. This was performed following a probabilistic design by areas and contemplating an error of ± 4.4% under the assumptions of simple random sampling and 95% confidence. The fieldwork took place between the months of May and July 2018 and, during the visit to each home, adults and minors were surveyed separately. The survey format was the same for both respondents, with the version for adults designed to learn about their perception of the minor's ability to identify the advertising they receive through mobile devices.

To respond to the research goals, the following research questions were formulated:
- RQ1. Do the surveyed children recognize advertising content in the cases presented?
- RQ2. Can minors identify standard advertising formats and those that combine persuasive content and entertainment in the same proportion?
- RQ3. Are there significant differences in the level of recognition of advertising in the selected cases based on the age, gender and socioeconomic status of the minors?
- RQ4. What percentage of the sample of children correctly detected the presence or absence of advertising in the selected cases?
- RQ5. What perception do adults have of the minor's ability to recognize advertising in the selected cases?
- RQ6. What level of knowledge does the child's legal guardian have of the minor's ability to recognize advertising content in the examples in this study?

2.2. Sample description

In total, 1,002 valid responses were obtained from the survey, including both minors and legal guardians.

The age distribution for the minors in the sample was: 60% in the 10-12 age group, and 40% in the 13-14 age group; by gender, 46% were male and 54% female. Regarding adults, most of the responses were obtained from mothers (82%) mostly within the 30 to 45 age range (68.5%).

With regard to the description of the household, in terms of number of members, the most common household had four members (32.7%), followed by five members (24.2%). Regarding education, the head of the household of 75% of the households was a high school graduate and in terms of socioeconomic level, households were distributed as follows: C1 (7.2%); C2 (18.4%); C3 (28.5%) and D (42.9%). Three percent of respondents chose not to provide this data.

Regardless of the socioeconomic level, the members of the sample had a high use of mobile devices, mainly smartphones (99%); to a lesser extent, laptops (52%) and tablets (49%). The main uses are entertainment (83%), communication (77%) and social networking (43%). Consequently, the most downloaded applications were video players (66%), social networks (56%) and games (54%).

2.3. Measurements

Given the scant attention paid to advertising consumption in digital environments by minors (De-Jans et al., 2017), this study has an exploratory approach that seeks to shed light on the extent to which minors can recognize the advertising they are exposed to on social networks.

To measure advertising literacy, the survey model designed by Rozendaal et al. (2016), namely ALS-C (Advertising Literacy Scale for Children), was taken as a starting point. This model has been tested on children aged 8 to 12 and involves the analysis of both conceptual and attitudinal literacy. The commercial message recognition variable was selected from this survey to measure advertising literacy from a situational point of view, that is, by having a minor process a specific and real case (Hudders et al., 2017). Considering that the ALS-C model was designed to measure television advertising literacy, it was adapted to the digital

context (Rozendaal et al., 2016; Zarouali et al., 2019) and advertising recognition questions with multiple choice answers were defined in the questionnaire. This allowed researchers to integrate the diversity and particularities of the advertising formats present in social networks. Thus, minors were asked the following questions:

- In which of the following YouTube examples do you detect advertising? Example 1; Example 2; Example 3; Example 4; Example 5; I do not see advertising in any example.

- In which of the following Instagram examples do you detect advertising? Example 1; Example 2; Example 3; Example 4; Example 5; I do not see advertising in any example.

The questions were reformulated in the adult questionnaire as follows: In which of the following YouTube / Instagram examples do you think the minor would detect advertising?

Table 1. Cronbach's alpha, mean, DT and S2 of the designed items to measure the level of advertising recognition								
Item	Min.	Max.	Minors (N=501; α= .54)			Adults (N=501; α= .40)		
			Mean	DT	S^2	Mean	DT	S^2
1-YT	0.00	1.00	0.15	0.36	0.13	0.16	0.37	0.14
2-YT	0.00	1.00	0.39	0.49	0.24	0.24	0.43	0.18
3-YT	0.00	1.00	0.35	0.48	0.23	0.37	0.48	0.23
4-YT	0.00	1.00	0.23	0.42	0.18	0.23	0.42	0.18
5-YT	0.00	1.00	0.29	0.46	0.21	0.08	0.28	0.08
1-IG	0.00	1.00	0.26	0.44	0.19	0.22	0.42	0.17
2-IG	0.00	1.00	0.48	0.50	0.25	0.21	0.40	0.16
3-IG	0.00	1.00	0.38	0.48	0.23	0.44	0.50	0.25
4-IG	0.00	1.00	0.11	0.31	0.10	0.23	0.42	0.18
5-IG	0.00	1.00	0.14	0.35	0.12	0.19	0.39	0.15

Note. For the coding of the items in SPSS, 0=does not recognize advertising; 1=recognizes advertising.

Table 2 summarizes the examples used in the questionnaire. There are cases that do not contain advertising, cases that use standard advertising formats and others in which the brand and / or the product appears interspersed with the content.

Table 2. Description of the cases used to recognize advertising content					
Social network	Example #	Does the example contain advertising?	Advertising format	Advertising signage	Advertised product
YouTube	1	No	-	-	-
	2	Yes	Display ad	Explicit promotional signage	Telephone company (Claro)
	3	Yes	Youtubers show and include promotional description of a brand (in the content of the video itself)	Implicit signaling in video title	Food (Phoskitos)
	4	Yes	Youtuber shows and includes promotional description of a brand (in the content of the video itself)	Title only announces the holding of a draw	Technology (Súper Nintendo console)
	5	Yes	Skippable video ad	Explicit promotional signage	Technology (Tv LG)
Instagram	1	Yes	Product placement in photo uploaded to official account (Leo Messi)	No signaling of product presence	Beverage (Vino Vega Sicilia)
	2	Yes	Advertisement on Story	Explicit promotional signage	Travel web portal (Despegar.com)
	3	Yes	Product placement in photo uploaded to official account (Selena Gómez)	Promotional signage through the #ad tag in photo description	Beverage (CocaCola)
	4	No	-	-	-
	5	No	-	-	-

To determine the significance of the differences between the responses of adults and minors, the multiple comparisons Bonferroni test was applied, a tool necessary to work with different bases (sample of parents and sample of children), as well as to detect differences between variables with more than two categories (as in the case of the socioeconomic level).

3. Results

3.1. Level of advertising recognition of minors

More than half of the respondents were unable to recognize advertising when it was present. Also, as shown in Table 3, almost 25% of the sample directly responded that no advertising had been identified in the selected examples, in neither YouTube nor Instagram. Advertising recognition was higher for Instagram than YouTube. Overall, YouTube concentrated the lowest detection percentages, specifically in example 4.

As already indicated in the methodology, examples that did not contain advertising were inserted among the selected cases. However, between 11% and 15% of children identified persuasive intent in these examples (1 on YouTube; images 4 and 5 on Instagram).

Table 3. Comparison between level of recognition of minors and perception of adults				
Social network	Example #	Does it contain advertising?	% minors who recognized advertising (N=501)	% adults who recognized advertising (N=501)
YouTube	1	No	15.0%	16.2%
	2	Yes	38.5%*	23.8%
	3	Yes	34.7%	36.7%
	4	Yes	23.0%	22.8%
	5	Yes	29.3%*	8.4%
	Does not recognize advertising in any example	-	24.8%	21.2%
Instagram	1	Yes	25.9%	22.2%
	2	Yes	48.1%*	20.6%
	3	Yes	37.5%	43.7%*
	4	No	11.0%	23.2%*
	5	No	14.4%	18.6%
	Does not recognize advertising in any example	-	23.6%	21.0%

Note. * Statistically significant result between minor and adult sample. Results are based on two-sided tests with a significance level=0.05. Tests were adjusted for all pairwise comparisons within a row of each subtable using the Bonferroni correction.

Recognition of advertising per platform and format, proved highest for YouTube, for which the presence of advertising in example 2 was identified by the highest percentage (38.5%), which corresponded to an ad displayed to the right of the featured video, topping the list of YouTube's suggestions. A 34.7% pointed to example 3, a video in which the Haacks brothers, two influencers, announced on their YouTube channel having become the new image for a candy brand. Next was a standard skippable video ad (example 5) which was recognized by 29.3% of the minors surveyed, while 23% identified persuasive intent in a giveaway for electronic devices organized by YouTuber Makiman131 (example 4) as part of the content of one of his videos.

Regarding Instagram, almost 50% of the minors recognized the ad inserted in stories (example 2), while 37.5% identified the publication by singer Selena Gómez with a bottle of Coca-Cola as advertising (example 3). As indicated in the methodology section, the #ad tag was inserted in the description section in the publication. To a lesser extent (25.9%), the minors surveyed detected product placement (wine bottles) without any type of signage in the publication featuring Leo Messi (example 1).

Minors identified to a lesser extent cases in which the persuasive intention appeared intermingled with the content of the publication and with no signaling as such (example 4 on YouTube and example 1 on Instagram.)

When differentiating recognition of advertising by gender, age and socioeconomic level, age is the variable showing statistically significant differences. As can be seen in Table 4, recognition among children ages 13 to 14 years was higher in the examples containing advertising, except for example 1 on the

YouTube platform, which did not contain any commercial message. The differences are more significant on YouTube than on Instagram. Similarly, the percentage of children who did not recognize advertising in any case is significantly higher among those aged 10 to 12.

Table 4. Segmentation of the responses of the minors according to gender, age and SES of the household									
Social network	Example #	Gender		Age		SES			
		Male	Female	10-12	13-14	C1	C2	C3	D
YouTube	1	12.6%	17.0%	12.0%	19.3%*	2.8%	8.7%	15.4%	19.5%
	2	39.8%	37.4%	32.4%	47.5%*	36.1%	51.1%* (C3)	32.2%	35.3%
	3	31.2%	37.8%	32.8%	37.6%	41.7%	34.8%	37.8%	30.2%
	4	25.5%	20.7%	22.4%	23.8%	33.3%	22.8%	21.0%	23.3%
	5	26.4%	31.9%	25.1%	35.6%*	36.1%	25.0%	26.6%	30.2%
	Does not recognize advertising in any example	27.3%	22.6%	29.1%*	18.3%	30.6%	27.2%	23.1%	24.7%
Instagram	1	33.8%*	19.3%	24.1%	28.7%	19.4%	34.8%	21.0%	27.4%
	2	45.9%	50.0%	39.5%	60.9%*	38.9%	57.6%	52.4%	42.3%
	3	35.9%	38.9%	36.5%	39.1%	44.4%	56.5%* (C3/D)	36.4%	29.3%
	4	11.3%	10.7%	10.0%	12.4%	0.0%	16.3%	13.3%	9.8%
	5	13.4%	15.2%	14.7%	13.9%	8.3%	10.9%	15.4%	17.2%
	Does not recognize advertising in any example	28.1%*	19.6%	28.8%*	15.8%	41.7%* (C2/C3)	14.1%	19.6%	26.5%

Note. *Statistically significant result between columns within the same variable (Gender, Age, SEL). Results are based on two-sided tests with a significance level=0.05. Tests were adjusted for all pairwise comparisons within a row of each subtable using the Bonferroni correction.

Regarding gender, no significant differences were found with the exception of the Instagram advertising example taken from Leo Messi's account, which was recognized to a greater extent by boys than by girls. A higher proportion of boys than girls did not recognize advertising in any of the cases they were shown.

With regard to socioeconomic level, the Bonferroni test barely showed significant differences. In general, a higher percentage of children belonging to the C1 level tended to recognize advertising on YouTube better than on Instagram compared to other socioeconomic levels. However, it is also the group that failed to recognize as advertising any of the examples on the two platforms studied in greatest proportion. On Instagram, the minors in group C2 obtained a higher recognition rate than the rest of the groups.

These results show that the percentage of children who correctly recognized persuasive intentionality did not exceed 7%. Total/Full/Correct recognition is understood as both having marked those examples that contained commercial information as so and indicating no advertising present when there was none. Table 5 shows that full recognition is higher on Instagram than on YouTube. Similarly, null recognition on YouTube was detected by almost 7% of the sample, while on Instagram, null recognition did not reach 0.5%. Likewise, 61% of the children correctly recognized 1 or 2 YouTube cases, and more than 70% correctly recognized 2 or 3 Instagram cases.

Table 5. Rate of minors who guessed correctly terms of advertising recognition			
YouTube		Instagram	
# Correct guesses	% minors (N=501)	# Correct guesses	% minores (N=501)
0 out of 5	6.8%	0 out of 5	0.4%
1 out of 5	27.3%	1 out of 5	5.6%
2 out of 5	33.7%	2 out of 5	30.5%
3 out of 5	16.2%	3 out of 5	41.1%
4 out of 5	12.6%	4 out of 5	15.6%
5 out of 5	3.4%	5 out of 5	6.8%

3.2. Perception of families on the ability of minors to recognize advertising

The percentage of children able to recognize a persuasive message in the selected cases, in general, was higher than the percentage of parents who stated that their children would perceive an advertising

message. As shown in Table 3, except in two cases (example 3 on YouTube and Instagram), the percentage of adults who indicated that the minor would recognize advertising was lower than the percentage of children who actually recognized the presence of advertising. Likewise, in those cases where no persuasive intent was present, the percentage of adults who stated that their children would perceive advertising, was higher than the percentage of children who actually recognized the presence of intentionality. In the case of Instagram, this difference was statistically significant (example 3).

It is interesting to note that for the examples that contained standard advertising formats (example 5 on YouTube and example 2 on Instagram), the percentage of adults who believed that their child would recognize advertising is significantly lower than the percentage of minors who actually identified it. However, in examples No. 3 on YouTube and on Instagram, in which the insertion of advertising is subtler, parents trusted their children's level of identification would be higher.

Table 6. Level of correspondence between the responses of the minor and the tutor			
YouTube		Instagram	
Correspondence between adults and minors response	% adults (N=501)	Correspondence between adults and minors response	% adults (N=501)
0 out of 5	0.8%	0 out of 5	1.0%
1 out of 5	5.2%	1 out of 5	3.8%
2 out of 5	16.8%	2 out of 5	17.4%
3 out of 5	28.7%	3 out of 5	33.5%
4 out of 5	30.9%	4 out of 5	24.0%
5 out of 5	17.6%	5 out of 5	20.4%

Ignoring whether minors had been successful in recognizing the presence (or absence) of persuasive intent, the level of correspondence between the responses of adults and minors was analyzed. As can be seen in Table 6, high minor/adult agreement (established as 4 or 5 coincidences) was reached by a little under half of the sample on YouTube and Instagram; about a third reached average agreement (3 coincidences) on both platforms, and approximately 20% reached low agreement (1 or 2 coincidences).

4. Discussion

The data obtained in this study opens the door to questioning the ability of minors to recognize advertising on social networks, especially when it appears mixed with other types of content.

The lowest recognition percentages were reached by hybrid formats which are not classified as advertising, such as the product placement information on YouTube and Instagram. This result is in line with the research hypotheses of previous authors (Mallinckrodt & Mizerski, 2007; An et al., 2014; Van-Reijmersdal et al., 2017; Vanwesenbeeck et al., 2017) which assumes that, in the face of these new types of advertising formats, children seem to devote fewer cognitive resources to recognizing subtler or covert persuasive messages.

In general, standard advertising formats had higher levels of detection than those that intermixed types of content. Thus, the lowest detection rates (less than 26%) correspond to product placement videos on YouTube (a YouTuber raffling a Super Nintendo) and on Instagram (Leo Messi with two bottles of Vega Sicilia wine in the foreground). These two examples had no indication of being promotional content, unlike other examples (such as Instagram examples 2 and 3) that did, and which achieved higher detection rates (over 38%). It would seem as though explicit and clear signaling of advertising messages would help children to differentiate the type of content they are being exposed to on social networks.

Per platform, YouTube presented the lowest percentages of advertising identification by minors. Almost 70% of them failed to perceive persuasive intent in product placement videos. On Instagram, detection rates were also low. As previously explained, on average, standard formats, such as ads in stories, were recognized at a higher rate than other more implicit commercial messages. This study also showed that the greater the exposure to a social network, the lower the percentage of recognition of the advertising to which children are exposed. This is probably due to a decrease in the cognitive effort made by minors when they browse platforms with which they are familiar, a type of behavior previously identified by other researchers.

The fact that age is the variable that marks the most significant differences in the recognition of advertising by minors must be highlighted. As previously described by other authors (Hudders et al., 2017),

maturity is key in the recognition of the advertising phenomenon, hence children's literacy process must be in pace with their age.

When results are segmented by gender, a higher proportion of boys than girls recognized the example selected from Leo Messi's Instagram profile (example 1 Instagram) as an advertising placement. Similarly, on YouTube, boys recognized the Makiman131 console raffle as advertising to a greater extent than girls did (example 4). In the same way, girls recognized as brand presence the photo of Selena Gómez, as well as in the contents of the Haacks brothers on YouTube, which appeared on a more general channel which targets children and young people. Consequently, it would seem that children would detect advertising intent to a greater extent when there is more affinity with the subject matter of the content in which the commercial message is inserted.

With respect to the perception of parents regarding the ability of their children to identify the advertising phenomenon in this study, in general, adults tended to underestimate the level of advertising recognition of minors, a finding which is in line with what has already been mentioned by previous authors (Buijzen, 2014; Oates et al., 2014; Buijzen & Valkenburg, 2003). Although the aforementioned studies focused on television advertising, it could be deduced that parental perception of children's ability to recognize advertising is independent from the support, as a result of the distrust generated by the persuasive nature of advertising per se (Young et al., 2003; Tziortzi, 2009). Therefore, a low proportion of parents' responses (1 in 5) reached full correspondence with those made by their respective minors in the questionnaire, which could be associated with a rather relative understanding of their minor's ability to identify persuasive messages on social networks.

Notwithstanding the methodological limitations and the research approach used here, this study does open some non-conclusive lines of thought and research. The notion of analyzing the ability of minors to recognize the advertising they are exposed to on social networks, by asking certain questions and recording the answers provided by the respondents themselves when faced with real cases, was inspired by previous studies but had never been practically applied as it was in this study. Therefore, there is a need to continue improving the scale aimed at measuring advertising literacy on new platforms and for new media.

The authors propose to continue deepening this line of qualitative research in future studies with the aim of learning how minors process promotional content that appears interspersed with entertainment. The relevance of this notion derives from the fact that recognition of advertising is undoubtedly the first step for reaching advertising literacy (An et al., 2014). Ultimately, this type of study tributes to exploring the connection between child literacy in a digital environment and child education, a link that has not been fully established in academic literature.

5. Conclusions

Advertising strategies are continually modified to reach different audiences, including the youngest generations in this digital age. Today, social networks take up a large part of our Internet consumption time, which is why they have become very attractive platforms for advertisers. Advertising formats that mix types of content have become particularly popular on them.

Minors seem to lack the ability to recognize the persuasive purpose of the contents where commercial and entertainment goals are mixed, in contrast to their better ability to recognize standard formats, such as ads in stories. Age is decisive for the recognition index: the older the child, the higher the success rate, which indicates that advertising literacy must adapt to the maturation process of minors.

Parents, for their part, tend to underestimate the ability of their children to recognize advertising messages on social networks, most likely the result of their own mistrust of this type of content. Literacy efforts should also reach this particularly critical population.

Finally, it should be noted that an explicit and clear signaling of advertising messages could help minors to differentiate the types of content they are exposed to on social networks.

References

An, S., Jin, H.S., & Park, E.H. (2014). Children's advertising literacy for advergames: Perception of the game as advertising. *Journal of Advertising*, *43*(1), 63-72. https://doi.org/10.1080/00913367.2013.795123

Buijzen, M. (2014). The family´s role in children´s interpretation of advertising. In M. Blades, C. Oates, F. Blumberg, & B. Gunter (Eds.), *Advertising to children: New directions, new media* (pp. 137-157). Springer. https://doi.org/10.1057/9781137313256

Buijzen, M., & Valkenburg, P.M. (2003). The effects of television advertising on materialism, parent–child conflict, and unhappiness: A review of research. *Journal of Applied Developmental Psychology*, *24*(4), 437-456. https://doi.org/10.1016/s0193-3973(03)00072-8

Buijzen, M., Van-Reijmersdal, E., & Owen, L.H. (2010). Introducing the PCMC Model: An investigative framework for young people's processing of commercialized media content. *Communication Theory*, *20*(4), 427-450. https://doi.org/10.1111/j.1468-2885.2010.01370.x

Cabello, P., Claro, M., Rojas, R., & Trucco, D. (2020). Children's and adolescents' digital access in Chile: the role of digital access modalities in digital uses and skills. *Journal of Children and Media*, (pp. 1-19). https://doi.org/10.1080/17482798.2020.1744176

CONAR (Ed.) (2018). Chilean code of advertising ethics, 6.0 version. https://bit.ly/2Ho2qlt

De-Cicco, R., Iacobucci, S., & Pagliaro, S. (2020). The effect of influencer–product fit on advertising recognition and the role of an enhanced disclosure in increasing sponsorship transparency. *International Journal of Advertising*, (pp. 1-27). https://doi.org/10.1080/02650487.2020.1801198

De-Jans, S., & Hudders, L. (2020). Disclosure of vlog advertising targeted to children. *Journal of Interactive Marketing*, *52*, 1-19. https://doi.org/10.1016/j.intmar.2020.03.003

De-Jans, S., Van-de Sompel, D., Hudders, L., & Cauberghe, V. (2017). Advertising targeting young children: An overview of 10 year of research. *International Journal of Advertising*, *38*(2), 1-34. https://doi.org/10.1080/02650487.2017.1411056

Feijoo, B., & García, A. (2019). Children attitude faced with the advertising they receive through their mobile devices. *adComunica*, *18*, 199-218. https://bit.ly/3pOGmbm

Feijoo, B., & Pavez, I. (2019). Audiovisual content with advertising intention in children's videos on YouTube: The case of the Soy Luna series. *Communication & Society*, *32*, 313-331. https://doi.org/10.15581/003.32.1.313-331

Feijoo, B., Sádaba, C., & Bugueño, S. (2020). ¿Nivel experto o ingenuo? Detección y confianza de los niños en la publicidad que reciben a través de sus dispositivos móviles. Perfiles de usuario. *ZER*, *25*, 231-248. https://doi.org/10.1387/zer.21520

Goodrich, K., Schiller, S.Z., & Galletta, D. (2015). Consumer reactions to intrusiveness of online-video advertisements: Do length, informativeness, and humor help (or hinder) marketing outcomes? *Journal of Advertising Research*, *55*(1), 37-50. https://doi.org/10.2501/JAR-55-1-037-050

Hudders, L., De-Pauw, P., Cauberghe, V., Panic, K., Zarouali, B., & Rozendaal, E. (2017). Shedding new light on how advertising literacy can affect children's processing of embedded advertising formats: A future research agenda. *Journal of Advertising*, *46*(2), 333-349. https://doi.org/10.1080/00913367.2016.1269303

IAB Spain (Ed.) (2020). *Social networks annual study*. https://bit.ly/2RuxZSn

Ip, J., Mehta, K., & Coveney, J. (2007). Exploring parents' perceptions of television food advertising directed at children: A South Australian study. *Nutrition & Dietetics*, *64*(1), 50-58. https://doi.org/10.1111/j.1747-0080.2007.00069.x

Livingstone, S., & Helsper, E.J. (2006). Does advertising literacy mediate the effects of advertising on children? A critical examination of two linked research literatures in relation to obesity and food choice. *Journal of Communication*, *56*(3), 560-584. https://doi.org/10.1111/j.1460-2466.2006.00301.x

Mallinckrodt, V., & Mizerski, D. (2007). The effects of playing an advergame on young children's perceptions, preferences, and requests. *Journal of Advertising*, *36*(2), 87-100. https://doi.org/10.2753/joa0091-3367360206

Marti-Pellón, D., & Saunders, P. (2015). Children's exposure to advertising on games sites in Brazil and Spain. [Exposición infantil a anuncios en webs de juegos de Brasil y de España]. *Comunicar*, *45*, 169-177. https://doi.org/10.3916/C45-2015-18

Oates, C., Newman, N., & Tziortzi, A. (2014). Parent´s beliefs about, and attitudes towards, marketing to children. In M. Blades, C. Oates, F. Blumberg, & B. Gunter (Eds.), *Advertising to children: New directions, new media* (pp. 115-136). Springer. https://doi.org/10.1057/9781137313256

Rozendaal, E., Opree, S.J., & Buijzen, M. (2016). Development and validation of a survey instrument to measure children's advertising literacy. *Media Psychology*, *19*(1), 72-100. https://doi.org/10.1080/15213269.2014.885843

Saraf, V., Jain, N.C., & Singhai, M. (2013). Children and parents' interest in tv advertisements: Elucidating the persuasive intent of advertisements. *Indian Journal of Marketing*, *43*(7), 30-30. https://doi.org/10.17010/ijom/2013/v43/i7/34016

Truong, Y., & Simmons, G. (2010). Perceived intrusiveness in digital advertising: Strategic marketing implications. *Journal of Strategic Marketing*, *18*(3), 239-256. https://doi.org/10.1080/09652540903511308

Tur-Viñes, V., Núñez-Gómez, P., & González-Río, M.J. (2018). Kid influencers on YouTube. A space for responsibility. *Revista Latina de Comunicación Social*, *73*, 1211-1230. https://doi.org/10.4185/RLCS-2018-1303

Tur-Viñes, V., Núñez-Gómez, P., & Martínez-Pastor, E. (2019). YouTube, children, and collaborative culture. A literature review. *Historia y Comunicación Social*, *24*(1), 331-351. https://doi.org/10.5209/HICS.64498

Tziortzi, A. (2009). *The perceived effects of food advertising on children in Cyprus*. [Unpublished doctoral dissertation]. University of Sheffield.

Van-Dam, S., & Van-Reijmersdal, E. (2019). Insights in adolescents' advertising literacy, perceptions and responses regarding sponsored influencer videos and disclosures. *Cyberpsychology*, *13*(2). https://doi.org/10.5817/cp2019-2-2

Van-Reijmersdal, E., & Rozendaal, E. (2020). Transparency of digital native and embedded advertising: Opportunities and challenges for regulation and education. *Communications*, *45*(3), 378-388. https://doi.org/10.1515/commun-2019-0120

Van-Reijmersdal, E., Rozendaal, E., Smink, N., van Noort, G., & Buijzen, M. (2017). Processes and effects of targeted online advertising among children. *International Journal of Advertising*, *36*(3), 396-414.

https://doi.org/10.1080/02650487.2016.1196904

Vanwesenbeeck, I., Walrave, M., & Ponnet, K. (2017). Children and advergames: The role of product involvement, prior brand attitude, persuasion knowledge and game attitude in purchase intentions and changing attitudes. *International Journal of Advertising*, *36*(4), 520-541. https://doi.org/10.1080/02650487.2016.1176637

VTR (Ed.) (2019). *Digital radiography 2019*. https://bit.ly/3kowlxU

Watts, L. (2004). The acceptable face of brands in schools. *Consumers*, *6*, 44-49. https://doi.org/10.1108/17473610510814417

Young, B.M., De-Bruin, A., & Eagle, L. (2003). Attitudes of parents towards advertising to children in the UK. *Journal of Marketing Management*, *19*(3), 475-490. https://doi.org/10.1080/0267257X.2003.9728220

Zarouali, B., de Pauw, P., Ponnet, K., Walrave, M., Poels, K., Cauberghe, V., & Hudders, L. (2019). Considering children's advertising literacy from a methodological point of view: Past practices and future recommendations. *Journal of Current Issues & Research in Advertising*, *40*(2), 196-213. https://doi.org/10.1080/10641734.2018.1503109

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The critical dialogical method in Educommunication to develop narrative thinking

El método dialógico-crítico en Educomunicación para fomentar el pensamiento narrativo

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ABSTRACT

In the conceptualization of Educommunication, progress must be made towards the integration of its two great perspectives. Encouraging critical dialogue is a goal shared by both, so it is necessary to delve into its educational properties, methods and functions. A training model in Educommunication that has been tested through empirical research is presented. For two weeks, 246 children between six and eleven years old, attended training sessions with two types of audiovisual products. Half of the children were involved in a training process using critical dialogical methodology, whereas the training process for the other half of the children followed conversational dialogue methodology. The results show that children who follow the critical dialogical training benefit significantly in the construction of their media competence and narrative thinking, compared to the children of the conversational dialogical groups. The results also reveal that not all types of audiovisual content are beneficial to the construction of children's thinking. This research reveals the properties of the proposed critical dialogical method that allows children to improve their media competence and illustrates the complementarity between the diagnostic-static process of competences and the formative-dynamic process that leads to critical thinking. From an applied point of view, the critical dialogical method has been useful for use by teachers to foster a media education in their group of students that contributes to the development of narrative thinking.

RESUMEN

En la conceptualización de la Educomunicación se ha de avanzar hacia la integración de sus dos grandes perspectivas. Fomentar el diálogo crítico es un objetivo compartido por ambas, por lo que es preciso profundizar en sus propiedades, métodos y funciones educativas. Se presenta un modelo formativo en educomunicación que ha sido testado mediante una investigación empírica. Durante dos semanas, 246 niños entre seis y once años asisten a sesiones formativas con dos tipos de productos audiovisuales. La mitad de los niños sigue un proceso formativo según la metodología dialógico-crítica y la otra mitad una metodología de diálogo-conversacional. Los resultados muestran que los niños que siguen la formación dialógico-crítica se benefician significativamente en la construcción de su competencia mediática y pensamiento narrativo, en comparación con los niños de los grupos dialógico-conversacional. Los resultados revelan también que no todos los tipos de contenidos audiovisuales son beneficiosos para la formación del pensamiento del niño. Esta investigación pone de manifiesto cuáles son las propiedades del método dialógico-crítico propuesto que permiten al niño mejorar su competencia mediática e ilustra la complementariedad entre el proceso de diagnóstico-estático de competencias y el proceso formativo-dinámico que conduce al pensamiento crítico. Desde un punto de vista aplicado, este método ha mostrado su utilidad para ser utilizado por el profesor para fomentar en su grupo de alumnos una educación mediática que contribuya al desarrollo del pensamiento narrativo.

1. Introduction

From a conceptual perspective, educommunication studies can be situated at some point of a bipolar dimension determined by the degree of intersection between Education and Communication. At one extreme are the works which focus on "media literacy", that is, development of media skills or competences. At the other, we find studies concerned with disentangling the contribution of the media education process to personal development (autonomy, creativity, critical attitude, empowerment, social participation, values, ideology and thinking). Both perspectives are necessary and compatible as they are dialectically intertwined. The epistemological conceptualisation of the field has to draw from both, as they share the importance of communication in education (and vice versa). Although inseparable in that education/communication pairing, in one the focus is on the notion of media competence, and in the other it centres on the education/development of the person. Although one cannot be reduced to the other, they can be included in a single study, as argued below.

These different conceptions in Educommunication share both the notion of communication and the critical and dialogical tradition (Gregorio, 2018; Barbas-Coslado, 2012). The main trends at the present time, which for many years have been distanced from a merely instrumentalist and technological vision, conceive Educommunication as a dialogical, participative and critical activity. Based on this consensus regarding the desideratum and purpose of Educommunication, it is necessary to delve further into what is understood by dialogue and critical thinking and, especially, how it is fostered in the educational context. By way of responding to this need, this paper advances a theoretical and methodological proposal, tested by means of empirical research, which shows the benefits of the critical dialogical method for Educommunication. The approach includes expanding the notion of media competence and organising it into a training methodology that includes a specific conception of dialogue and context.

1.1. Media competence, thinking, critical dialogue and training context

Studies into media competence have established a set of dimensions and indicators (Ferrés & Piscitelli, 2012; Pérez-Rodríguez & Delgado-Ponce, 2012) which have resulted in a diagnosis of insufficient media competence levels in both adults and children (Ferrés et al., 2011; Pérez-Rodríguez et al., 2019; García-Ruíz et al., 2014; Caldeiro-Pedreira et al., 2017). This type of enquiry is important, as it draws the attention of political institutions towards the need for educommunication in education. They are diagnostic studies– and therefore of a structural and static nature –which measure the acquired level at a specific moment. The question being raised is how to improve competence levels and to what end. If Educommunication seeks to integrate the two poles mentioned before, it must connect the static diagnosis of media competence with dynamic models that lead to learning and to the improvement of these structures in educational contexts. If it seeks to foster autonomy, creativity, dialogue and critical thinking, it must review and expand the concepts it uses, its tools for analysis and the methods employed. It is therefore necessary to broaden the conception of what we understand as media competence, which implies theoretical, methodological and applied reflection.

As we understand it, diagnostic-static media competence must be complemented by a second, formative-dynamic approach, and vice versa. It is therefore necessary to locate and integrate the dimensions and indicators of media competence of knowledge, comprehension and expression (Pérez-Rodríguez & Delgado-Ponce, 2012), within the broader context of thinking. This includes a set of mental processes and a context of action. Media communication mobilises the former (attention/perception, comprehension, memory, knowledge, imagination, etc.), in a process of building the structures of knowledge, following a dialectic of assimilation of the media content (coding/decoding, comprehension, interpretation, evaluation) and of accommodation of this (expressiveness, creativity, production, participation and critical attitude). The manner in which the mental processes are activated will depend on the conditions of the context and the subject's level of cognitive development. The acquisition of media competence and critical attitude which Educommunication seeks to foster will depend on the way in which the educational activity is organised, the characteristics of the context where the activity develops and the manner in which these mental processes are mobilised based on the context. Thinking is activated when we face an internal or external disequilibrating situation perceived as a problem for which we must provide a response. The

result of thinking leads to this response and is linked to action, either to guide it/evaluate it, or to trigger it. Thinking is therefore a homeostatic process of self-regulation and optimising equilibration of cognitive structures (Piaget, 1975) that leads us to attempt to provide a response to the difficulties presented by our environment. This makes us learn and accumulate experience.

In educommunication, dialogue participates in activating thinking and media competence. In conversational dialogue, the educator makes queries about the media content. The participants express-defend their (individual) opinions and attitudes. According to Bohm (1996), it is difficult for this type of dialogue to lead to the development of critical attitudes, as we understand them here, because it does not enable the current stance of the subject, relying on beliefs established prior to participation, to be questioned. If dialogue has to contribute to the change, as a result of the development of critical attitudes, there must be a process enabling this transformation and resulting in improved thinking skills and structures. We argue that this mechanism consists of a specific manner of questioning implemented in the context of a collective/group search and which we will term critical dialogue. This type of dialogue differs from conversational dialogue. It has elements in common with Socratic maieutics and other contemporary positions such as the problematisation of knowledge (Freire, 1973) and the critical method in the construction of cognitive structures (Inhelder et al.,1974; Inhelder & Cellerier, 1996).

As Bang (2016) argues, a situation contributes to development when one of the participants experiences a state of openness, uncertainty and indeterminacy in relation to what is happening at that moment. This can lead the participant, if the conditions are suitable and encourage this, to make mental adjustments and decisions which result in new actions that seek to restore balance to the disequilibration experienced. In this process, as asserted by Sartre (1943), there is questioning, and a search for answers, as argued by Dewey (1938).

Finally, in order to be able to implement critical dialogue, it is essential that there is a certain type of context in which a specific activity will take place. We can identify different types of training contexts based on the way in which the educator stimulates the dialogue and defines and develops the activity. To develop critical dialogue, we propose a sociocultural context (Wertsch, 1993; Lave, 2001; Rogoff, 1990; 2003), in which the educator promotes media competence and critical attitudes in accordance with the theory of activity theory (Leontiev, 1981; Engeström, 2015) and successive steps (Galperin, 1995; Talizina, 1988).

In summary, critical dialogue requires, from this theoretical perspective, a unit of analysis which includes the intertwining of four dimensions: a) the subject's competences which are activated/fostered during the activity; b) a specific media product; c) a sociocultural critical dialogue activity that is promoted and channelled by the educator in successive steps; and d) collective participation by the members of the group. The study detailed below illustrates this model, which has made it possible, at the same time, to demonstrate both a diagnostic process, and one of training media competence and changing thinking structures through critical dialogue in a sociocultural context.

1.2. Television stories and critical dialogical training: An empirical study

In a multi-screen world, consumption of audiovisual stories throughout childhood continues to be very significant (Gallardo-Camacho et al., 2020). Through that recurring and informal assimilation of audiovisual stories, children also gain media competence. This process can progressively model their narrative thinking structures. Today we know that there are two types of thinking: paradigmatic thinking and narrative thinking (Bruner, 1986). While the former applies above all to the physical world and to logical-mathematical abstractions, the latter applies to the social and personal world. Narrative thinking is activated both to understand and to respond and express oneself in the face of the vicissitudes experienced in one's social and cultural environment. This activity progressively shapes the construction of the person, identity and the person's sociocultural being.

Narrative thinking produces and feeds on stories (real and fictional). This is why interaction with media content is highly important, since this content participates in modelling people's thinking (Lipman, 1998; Mateos & Núñez, 2011; Aguirre-de-Ramírez, 2012) and progressively shapes, over the course of their childhood, their five cognitive-emotional structures: action, cause, intention-motivation, diegesis-space

and time (Bermejo-Berros, 2007). Thinking, to resolve a narrative disequilibrium, leads to these structures being set in motion. Education must seek to ensure the modelling of these structures is appropriate for the child. In addition, it has been highlighted how important it is that the structures built in this process enable children to transfer the principle of learning involved, adaptively, to new situations (Bruner, 2006). The question is which educational method can be used to foster acquisition of thinking structures that provide children with greater media competence. Based on this, the objectives and hypotheses of this study are:

1) To explore whether the context of training –either critical dialogue training or conversational dialogue training– on a media product is capable of improving children's narrative thinking structures and, by extension, their media competence. An initial hypothesis with regard to this type of training is as follows:

- H1. While children who follow a critical dialogue training process improve their stories and structure them coherently and appropriately for narrative thinking, merely exposing the children to audiovisual stories in a context of informal social interaction and conversational dialogue is not sufficient to improve the structure of their narrative schemata.

2) To explore whether certain audiovisual products encourage the development of media competence and thinking structures and others do not. Research on audiovisual stories has shown that there are "narrativizing" products which encourage cognitive development and other "denarrativizing" products which disarrange it (Bermejo-Berros, 2007). A second hypothesis thus considers the influence of the type of audiovisual story on the child:

- H2. Narrativizing stories contribute to enabling children to benefit from the educational processes of educommunication in their acquisition of media competence, whereas denarrativizing stories do not allow them to obtain those benefits.

3) To assess whether the children's age, as an indicator of their development level, influences the potential benefits to be obtained from the training process in the Zone of Proximal Development (ZPD) and whether these benefits are also greater when the story is of the narrativizing type. A third hypothesis is posited:

- H3. Both the type of training and the type of audiovisual story affect the benefits children can obtain and their intensity will depend on their level of development.

2. Material and methods
2.1. Participants and experimental groups
Over two weeks, 246 children from two schools in Castilla y León, from the 1st, 3rd and 5th grades of primary school (M: 6;8, 8;2 and 10;8), participated in four sessions lasting 50 minutes each, which took place in the school's audiovisual classroom.

The pupils in each class group were divided into experimental groups, based on the three experimental factors explored in the research (type of training: critical dialogical training vs conversational dialogical training; type of story: narrativizing vs denarrativizing; age level: 1st grade-3rd grade-5th grade). By cross-referencing these three factors with their respective variables (group design: 2x2x3), 12 experimental groups were established for participation in the training sessions.

2.2. Method
In the first session (pre-test), the children watched an episode of an animated series and then took a diagnostic test to determine their level of comprehension and verbal retelling of the episode they had seen. In the fourth session (post-test), this procedure was reproduced using a different episode. Taking into account the indicators provided by earlier research (Bermejo-Berros, 2007), half of the experimental groups watched a total of four episodes of the narrativizing series "The World of David the Gnome" (GN) and the other half watched four episodes of the denarrativizing series "Dragon Ball" (DB). In the second and third sessions, after watching the episode (average length: 20'), the children attended a session (lasting 30') with the educator in accordance with the type of training they were assigned (critical dialogical or conversational dialogical). Therefore, the pre-test diagnosed the initial competence level, the two intermediate training sessions were activities that pursued learning of media competence and, lastly, the post-test diagnosed whether the training had induced microgenesis of narrative structures and media competence.

For the training phase, the method designed in this study was the result of taking the theoretical aspects introduced above into consideration and included the following components:

1) Type of activity: Based on activity theory (Leontiev, 1981; Engeström, 2015), the task-activity encouraged by the educator during the training sessions included various components. In this study, the two types of training structured the four components of the activity differently.

The motive, which can be external or internal, was the interpretation the children made of the context in which they found themselves (what I want to do and/or they have asked me to do) and which led them to give their actions or operations a direction/goal during the session. In the critical dialogical situation, the educator problematised the situation and impelled the children to direct their motive towards the need to carry out successive adjustments. In contrast, in the conversational dialogical situation, the educator/trainer reproduced the patterns of a natural context where they simply talk about a story they have watched. There was therefore neither problematisation nor re-direction of the initial motive.

The objective involved the materialisation of their motive. In the critical dialogical context, it was to retell the story well, whereas in the conversational dialogical context it was to talk about the story.

The action was the specific material response. In our case, it was the verbalisation by the children during the session. In the critical dialogical situation, the educator's actions consisted of asking specific questions which focused on the need for the children to participate by describing all the elements of the story well. These questions included the action components of the narrative sequences, the causal representation components and the space-time components (who does what, where, when, why and what for). This educommunicative process included all the elements that make up the five structures of narrative thinking. By contrast, in the conversational dialogical situation, there was no specific plan of action. The children's actions were the result of what they wished to say about the current story or past experiences, of spontaneous queries that came to them during the session. The educator/trainer merely invited the children to comment on the images, to give their opinion about the stories they had watched, to compare them with others, and so on.

Finally, the operation was the set of specific answers to each request or enquiry from the educator or from other children during the session. In the critical dialogical session, the children had to perform operations in relation to the five thinking structures in order to provide a response to the actions asked of them. By contrast, in the conversational dialogical situation, only those operations required for the spontaneous conversation occurring during the session were activated.

2) Training stages: In the critical dialogical situation, the educator's planning included four stages which sought to foster optimising equilibration: action (the children initially told the story); disequilibrium (the educator introduced queries which triggered cognitive perturbation as they invoked gaps appearing in the initial accommodating action); initial re-equilibration (the children respond to the disequilibration raised in the questions); final equilibration (the perturbation was resolved in such a way that ultimately the process of verbally retelling the viewed story was completed). There is, therefore, a cyclical interactive alternation between the expressive process of accommodation through language and the assimilation of the appropriate responses that have been provided in the interactions between those participating in the situation. These responses help the children understand perceived imbalances and lead to better cognitive balancing. This process goes "from the periphery to the centre" according to the concept of the optimising equilibration of cognitive structures (Piaget, 1975). It begins with a generic request made to the children to tell the story.

After the initial response, a process begins in which the questions which the children are answering make it possible to begin reconstructing the horizontal and vertical relationships of the three levels and of the five narrative structures described in the following section. It continues in this way, through successive steps, which go from the periphery (the what) to the centre (how, why and what for), eliciting progressive improvement of comprehension and expression of the five structures which comprise narrative thinking. This method is also consistent with that proposed by Galperin (1995), which leads children to progressive internalisation of the external verbalisations towards mental internalisation of these.

In addition, this scaffolding educational process, in which the reconstruction of the story's structural coherence is generated, takes place in the ZPD, as it begins at the initial level expressed by the child and,

during the session, through this maieutic procedure incites the child to produce better answers at the child's potential development level (Vygotsky, 2000). By contrast, in the conversational situation, there are no stages as such, as the activity follows the spontaneity of the participants, thus reproducing the media situation in a natural environment.

3. Results

The notion of media competence refers here to the degree of suitability of the process of assimilation/accommodation of the audiovisual story.

Being competent means being capable both of understanding the story viewed (assimilating it correctly to the knowledge schemata) and of retelling it later verbally and being able to give explanations that make it possible to verify the child has the mental ability to give an account of the five narrative structures that comprise it: (a) action/events (give an account of what happened); (b) coherence of the causal relationship (why did such or such a thing happen/what did it happen for); (c) intention-motivation of actants-characters in their personal, relational and functional identity (what does such or such a person intend and actantial functions) and (d/e) space-time relationships (where and when it happens; relationship between the actions situated before/during/after).

For the restitution of the components of these structures at the moment of telling the viewed story, it is necessary to perform microstructural/macrostructural operations (Marinkovich, 1999), through "reflective" abstraction activities (Piaget, 1975). These thinking activities make it possible to organise the story evoked by the child and its structures on three levels: level 1 of proximal sequential relations (SO: Sequential Order); level 2 of distal configurational relations (CO: Configurational Order) and level 3 of causal coherence (SN: Semantic Networks).

In order to analyse the results, the level of media competence of narrative thinking was evaluated, both in the pre-test and in the post-test, through calculating the Narrative Skill or Media Competence Index. This index measures, with regard to the media stories with which the children interacted, the degree to which they verbally reconstruct the five structures of narrative thinking. It thus represents the level of competence at the moment of accommodating the schemata assimilated during their viewing, diagnosed in the pre-test, and the degree of competence acquired during the training and tested in the post-test.

The Narrative Skill or Media Competence index (COM) includes both qualitative and quantitative elements. Both the structural level of the three structures (SO+CO+SN) and the Connective Density which contains the number of Temporal Connectors (TC), Causal Connectors (CC) and number of Segments evoked by the children in their narration (SEGMENT) are calculated. The theoretical foundation and methodological and empirical formulation of this COM index and its components has been explained in earlier studies (Bermejo et al., 2018; Oregui et al., 2019).

The following story told by Ana (8;4 years old) in the pre-test about the episode "The Siberian Bear" of The World of David the Gnome, illustrates the COM index calculation:

(A)[<"David was in the forest] [a/OS1] // and (B) [then, he went into his house] [a/CT] and [he told his wife he had to go] [b] and [they went in the sleigh] [c/OS5] [with his fox] [c1] // (C) [and it was snowing] [a] [lots and lots] [a1] and [then, they went to a cave] [b/CT] and [it was night time] [c] and [they fell asleep] [d/OS6] [Then, the next day, they got up] [e/e1/CT/OS7] [and it was sunny] [f] and [they saw a friend of the King's] [g] [who had gone to look for them] [g1] [to take them to the King was] [h/CC] [Then, they had the skis] [g/CT] [to go through the snow] [g1/CC] and [they went to a place] [h] [where they were skiing] [h1] and [there was a competition] [i] and [David want on the ski jump] [j] [he did it really well] [k/OS8] // (D) [Then, they went and got to where the King was] [a/CT] and [the King told him to go to a place, where there was a bear in a tree,] [b/OS9] [who couldn't get down] [c/CC] // (E) [David ran a lot] [a] and [they went to where the bear was] [b/b1/OS10] // (F) [they got a rope] [a] [they tied the bear,] [b/OS15] [then, they cut the branch with an axe] [c/c1/CT/OS16] [but the bear didn't fall to the ground because it had the rope..] [d/CC] and // (G) [then the bear got out ok] [e/CT/OS17] [and it was saved] [a/OS19]>>.

-Sequential Order (SO): [SO1-SO5-SO6-SO7-SO8-SO9-SO10-SO15-SO16-SO17-SO19] = 11
-Configurational Order (CO): [CO-SET=3; CO-CONF=2; CO-RES=3; CO-CONC=2] = 10
-Semantic Networks (SN): [A-B-C(Setting), D-E(Conflict)-F(Resolution)-G(Conclusion)] = 7
-Structural level (SL): 11/20 (SO evoked by the children/ total SO in story) +10/20 (CO) +7/7(SN) = 0.68x100= 68
-Connective Density (CD) = 32(SEGMENT) + 7(TC) +4(CC) / 3 = 14.33
- COM Index = SL+CD=68+14.33=82.33

Figure 1 shows the influence of the type of story. In the pre-test, the narrativizing episode (GN) induced a higher level of media competence than the denarrativizing episode (DB).

Figure 1. Media competence level (COM) in the Pre-test according to the type of story viewed (narrativizing vs denarrativizing)
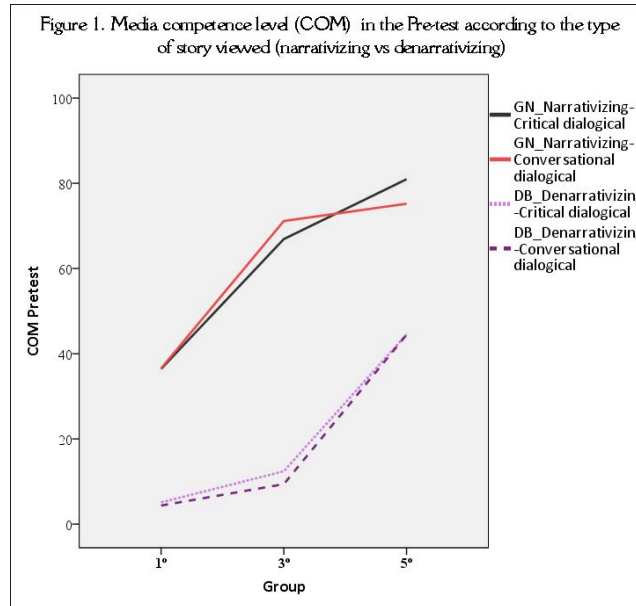
The level of media competence in the post-test continued to be greater in the children who viewed narrativizing episodes (Figure 2). Secondly, the type of training benefitted, above all, the boys and girls who took part in critical dialogical training. However, while the conversational dialogical situation barely led to improvements in the competence levels of the younger children, the higher the level of development of the children, the more benefit they drew from the critical dialogical training, even when they were in a denarrativizing group. This indicates, on one hand, the positive benefit obtained from critical dialogue and, on the other, that this interacts with the level of development.

Figure 2. Media competence level (COM) in the Post-test according to the type of training (critical dialogical vs conversational dialogical)
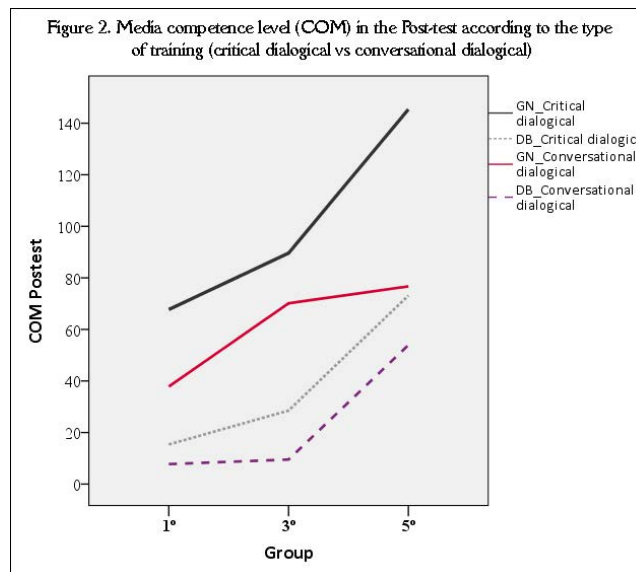
As is shown in Table 1, by comparing the score obtained in media competence of the post-test and the pre-test, through the related samples t-test, it is shown that the score from the critical dialogical group improved in the post-test, while the score of the conversational dialogical group was not statistically significant, except among male and female pupils in the 1st grade and female pupils in 5th grade who, in both cases, had watched episodes of Dragon Ball (with a denarrativizing structure).

Table 1. Comparison of score in Narrative Skill Post-test and Pre-test							
Type of story (structure)	Age level			Critical dialogical training		Conversational dialogical training	
				COM Post-test	COM Pre-test	COM Post-test	COM Pre-test
DB (denarrativizing)	1st grade	Female pupil	M	14.23	5.31	7.83	4.17
			(D.T.)	(5.18)	(2.98)	(3.79)	(3.22)
			t	-7.092		-4.005	
			p	.001***		.01**	
		Male pupil	M	17.25	4.75	7.63	4.63
			(D.T.)	(2.92)	(2.49)	(3.89)	(3.07)
			t	-12.076		-6.000	
			p	.001***		.001***	
	3rd grade	Female pupil	M	28.30	11.80	8.67	8.67
			(D.T.)	(5.33)	(3.46)	(2.96)	(2.96)
			t	-11.224		-.000	
			p	.001***		1.000	
		Male pupil	M	28.80	13.00	10.67	10.33
			(D.T.)	(7.53)	(2.26)	(3.16)	(3.87)
			t	-6.788		-.535	
			p	.001***		.608	
	5th grade	Female pupil	M	72.80	41.20	50.27	41.45
			(D.T.)	(13.73)	(5.69)	(10.41)	(4.68)
			t	-9.403		-2.831	
			p	.001***		.05*	
		Male pupil	M	73.45	47.55	58.44	48.11
			(D.T.)	(9.62)	(9.06)	(10.37)	(4.43)
			t	-9.970		-2.261	
			p	.001***		.054	
GN (narrativizing)	1st grade	Female pupil	M	66.67	36.00	38.10	36.00
			(D.T.)	(10.58)	(6.38)	(6.97)	(9.32)
			t	-10.467		-1.481	
			p	.001***		.173	
		Male pupil	M	68.50	36.75	37.60	37.10
			(D.T.)	(4.83)	(5.69)	(6.35)	(7.34)
			t	-17.710		-.455	
			p	.001***		.660	
	3rd grade	Female pupil	M	90.25	68.17	72.00	72.82
			(D.T.)	(7.51)	(9.26)	(5.35)	(7.07)
			t	-12.640		.541	
			p	.001***		.600	
		Male pupil	M	88.63	65.00	68.10	69.30
			(D.T.)	(9.94)	(6.12)	(9.10)	(4.06)
			t	-10.420		.486	
			p	.001***		.639	
	5th grade	Female pupil	M	147.62	81.54	76.46	73.23
			(D.T.)	(17.41)	(7.50)	(3.38)	(6.92)
			t	-12.486		-1.987	
			p	.001***		.070	
		Male pupil	M	141.75	80.00	77.14	78.86
			(D.T.)	(17.61)	(9.58)	(4.98)	(5.21)
			Z	-2.521		1.072	
			p	.05*		.325	

$p<.05*$; $p < .01**$; $p<.001***$.

Secondly, a multiple linear regression analysis was performed (Table 2) to determine which factors predict the score of the post-test in narrative skill (age, type of training, type of story).

Table 2. Factors which predict the score of the Narrative Skill Post-test							
COM Post-test	R^2	F	B	SE B	β	t	p
Model 1	**.881**	**356.959**					**.000***
Intercept (Constant)			-6.564	2.181		-3.010	.003
Predictor (Structure: Narrativizing)			50.138	1.741	.640	28.791	.000***
Predictor (5th grade)			55.433	2.134	.667	25.978	.000***
Predictor (Critical dialogical training)			27.305	1.743	.348	15.669	.000***
Predictor (3rd grade)			17.485	2.133	.210	8.196	.000***
Predictor (female)			-.164	1.753	-.002	-.093	.926
Model 2	**.881**	**448.040**					**.000***
Intercept (Constant)			-6.654	1.953		-3.408	.001
Predictor (Structure: Narrativizing)			50.138	1.738	.640	28.850	.000***
Predictor (5rd grade)			55.427	2.128	.667	26.041	.000***
Predictor (Critical dialogical training)			27.309	1.738	.348	15.709	.000***
Predictor (3rd grade)			17.483	2.129	.210	8.212	.000***

$p<.05*$; $p<.01**$; $p<.001***$.

The model conducted explained 88% of the variance and predicted that the post-test score for narrative skill is affected, in greatest to least extent order, by: viewing episodes of The World of David the Gnome with a narrativizing structure, being in the 5th grade in Primary Education, receiving critical dialogical training and being in the 3rd grade of Primary Education. The gender of the pupils, by contrast, was not statistically significant.

4. Discussion and conclusion

With regard to the first hypothesis (H1), three aspects make it possible to understand what happens during the training to enable the critical dialogical training to be more efficient than the critical conversational training:

1) The sociocultural critical dialogical context leads, as stated by Freire (1973), to a process of problematising the knowledge. As highlighted by Mercer et al. (2017), dialogue does not only permit an exchange of knowledge but is also a tool to structure thought. This process would not be possible without the precise manner in which the educator stimulates and conducts the sessions. In preparing the sessions, the educator designs the successive steps and identifies the competences to be fostered (the five narrative structures). At the beginning of the training session, and after viewing the audiovisual story, the educator invites the group to talk about what had happened. During the session, the educator follows a procedure to question the group by means of questions about the gaps and deficiencies detected in the verbal descriptions the children are giving about what had happened in the story viewed (where, how, why, etc.). As suggested by Bohm (1996), there is a joint search for answers. The children's replies lead the educator, in a process of successive feedback, to ask them anew about the aspects still to be clarified, using a methodology that follows the reconstruction of the knowledge from the more peripheral questions (what, where, when) towards the more central questions (why, what for, etc.), according to the terminology of genetic epistemology of optimising equilibration (Piaget, 1975). The initiative encouraged by the educator is perceived by the children as a collective search for answers to an enigma. This search for the meaning/sense of the story thus becomes a motivational factor for the group which is of a cognitive-emotional nature.

Lastly, all that is found by the group is summed up. This summing up, which satisfies the group, demonstrates a final coherence (in which we can identify the five narrative structures). By contrast, in the conversational dialogical group, the initiative follows a different route. Even when queries are posed about the television story watched, the dynamic is radically different. The role of the educator here differs greatly. The educator does not plan the interaction phases because the procedure of the session is based on spontaneity and the improvised flow of the activity, as would occur in an informal-natural context in daily life at home. The children express their opinions and explain what they believe had happened and why. They discuss the reasons given by one another. As stated by Bohm (1996), in the case of the conversational dialogical group, there is not a real group dynamic but rather individualised verbalisations of personal opinions/beliefs. While in the critical dialogical group there is a collective enigma to solve, here there is, by contrast, a search for getting it right (that is, verbalising which of the pupils knows the "right" answer to the educator's enquiry).

For the conversational dialogical group, the end of the session occurs when there are no more enquiries and the children feel that they have expressed their opinions and valuations. From the moment of this state of individual satisfaction/dissatisfaction, it does not become necessary to fully sum up the structural relationships of the story, which would serve as an example for the children to imitate in a later session, as does occur in the critical dialogical group. In short, in accordance with Camargo and Useche (2015), asking questions in a tool to develop critical attitudes. However, in the light of these results, it is not sufficient, as the questions must be part of a specific and efficient method.

2) The activity during the training sessions leads the participants in the critical dialogical group to a progressive and cyclical dialogical process of internalisation/externalisation of media competence about the story viewed. The efficient dynamic implemented by the educator activates the awareness mechanism in the children because it introduces and activates three factors. One is the appearance of doubt in the children. The notions of openness, uncertainty and indeterminacy (Bang, 2016) or questioning

(Sartre, 1943), reflect the cognitive disequilibration that, as argued by genetic epistemology, is the driver of psychological development (Piaget, 1975; Inhelder & Cellerier, 1996). A second factor, also identified in the school of Tran-Thong and Bridier (1977), is the change in direction that leads the focus of the attention from outside to awareness. This state of cognitive disequilibration leads children to seek an answer (Dewey, 1938). They find the answer both in their own cognitive system (as, in some cases, they had not initially activated all that they knew), and in the favourable sociocultural context in which they are to be found, where it is given to them, as proposed by Vygotsky (2000), and later activity theory (Leontiev, 1981), an external reconstruction of the story that can be internalised. In third place, the internalisation is not a mere transfer but a process of mental reconstruction that modifies their structures. This process of doubting, disequilibration, direction and reconstruction results, as shown in the results, thanks to the activity mediated by the educator, in the opportunity to give a new response which restores the balance, from the earlier imbalance. Being ready to do this means "criticising" the earlier position and therefore proceeding, voluntarily, to change it. This would be at the basis of the process of critical thinking.

By contrast, nothing of what we have just described occurs in the conversational dialogical group. The children do not perceive the need to change as the context simply invites them to participate, expressing their current knowledge, which is not called into question during the process.

3) In order for critical dialogue to acquire its true nature of critical thinking, a process of spontaneously transferring the critical attitude in new situations needs to occur. The spontaneous phenomenon of microgenesis (Inhelder et al.,1974) and optimising equilibration (Piaget) that we observe in the post-test bears witness that, through this externalisation and accommodation to the new story, the critical attitude from the training sessions have developed. The children, without receiving any pressure but perceiving during the training the need to improve their own contribution, now adapt it more efficiently in the post-test. They adapt it to what they have learnt during the previous sessions. Therefore, the collective reconstruction of the story has been internalised and demonstrates autonomous attitudes in the children. As noted by Bruner (2006), this transferral process is an educational factor of prime importance.

The results, with regard to hypotheses H2 and H3, enable us to understand that we have to take into account two supplementary factors that affect the efficiency of the critical dialogical method. On the one hand, it is necessary to know the type of media material we use with the children to foster their critical attitudes. The greater difficulty experienced by the children in reconstructing the narrative structures of Dragon Ball are due to the properties of this type of audiovisual product.

As has been analysed in previous studies, this type of audiovisual story introduces complex action, intentional and space-structures that require cognitive skills which are not suited to certain levels of development (Bermejo-Berros, 2007). This can comprise an obstacle to the development of the critical attitude as it is affected by the degree to which the structures of the story have been comprehended. By contrast, narrativizing stories like The World of David the Gnome, given their narrative features, can comprise good material for certain levels of development. A second factor, which must be considered by Educommunication in the teaching/learning of critical attitudes, is the level of potential development during the training. Vygotsky (2000) argued that the level of benefit that children ca obtain from the learning situation is related to their ZPD. In the same way, in our case, with age being a general criterion of development, we observed that the degree of improvement in the children's narratives is influenced by their age. The younger they are, the less benefit they get from the training in order to build better narratives in the post-test.

In conclusion, the critical dialogical method in the sociocultural context of successive steps, proposed in this study, has demonstrated its efficiency and usefulness to foster, in Educommunication, the acquisition of critical attitudes and media competence. In future research, it will be of interest to transfer this method to other groups (adolescents, adults) and to other products in order to test its efficiency and properties in relation to these.

Funding Agency

References

Aguirre-de Ramírez, R. (2012). Pensamiento narrativo y educación. *Educere*, *53*, 83-92. https://bit.ly/2ySRYnX

Bang, J. (2016). *Nothingness*. Routledge. https://doi.org/10.4324/9781315125381

Barbas-Coslado, A. (2012). Educomunicación: Desarrollo, enfoques y desafíos en un mundo Interconectado. *Foro de Educación*, *10*, 157-175. https://bit.ly/2VFsz9g

Bermejo-Berros, J. (2007). *Génération télévision. La relation controversée de l'enfant avec la télévision*. DeBoeck Université. https://doi.org/10.3917/dbu.berme.2007.01

Bohm, D. (1996). *On dialogue*. Routledge.

Bruner, J.S. (1986). *Actual minds, possible worlds*. Harvard University Press. https://doi.org/10.1176/ps.38.6.676

Bruner, J.S. (2006). *In search of pedagogy*. Taylor & Francis: Taylor & Francis. https://doi.org/10.4324/9780203088609

Caldeiro-Pedreira, M., Maraver-López, P., & Marín-Gutiérrez, I. (2017). Competencia mediática en la etapa infantil en España. *Magis*, *10*(20), 35-35. https://doi.org/10.11144/javeriana.m10-20.cmei

Camargo, L., & Useche, J. (2015). Las preguntas como herramientas intelectuales para el desarrollo de un pensamiento crítico. *REDHECS*, *10*(20), 145-156. https://bit.ly/3fYptGQ

Dewey, J. (1938). *Experience and education*. Macmillan Company. https://doi.org/10.1080/00131728609335764

Engeström, Y. (2014). *Learning by expanding. An activity-theoretical approach to developmental research*. Cambridge University Press. https://doi.org/10.1017/CBO9781139814744

Ferrés, J., García-Matilla, A., & Aguaded, I. (2011). *Competencia mediática. Investigación sobre el grado de competencia de la ciudadanía en España*. ITE-CAC. https://bit.ly/3e9iPMt

Ferrés, J., & Piscitelli, A. (2012). Media competence. Articulated proposal of dimensions and indicators. [La competencia mediática: Propuesta articulada de dimensiones e indicadores]. *Comunicar*, *38*, 75-82. https://doi.org/10.3916/c38-2012-02-08

Freire, P. (1973). *¿Extensión o comunicación? La concientización en el medio rural*. Siglo XXI. https://bit.ly/2JCt0ie

Gallardo-Camacho, J., Lavín, E., & Sánchez, J.S. (2020). Los programas infantiles de televisión y su consumo en diferido en España. *Icono14*, *18*(1), 155-178. https://doi.org/10.7195/ri14.v18i1.1387

Galperin, P.Y. (1995). *Teoría de la formación por etapas de las acciones mentales*. Editorial MGY.

García-Ruiz, R., Hueros, A.D., & Liaño, S.G. (2014). Propuesta de un instrumento de evaluación para medir el grado de competencia mediática en la etapa de educacion infantil. *Pixel-Bit*, *44*, 81-96. https://doi.org/10.12795/pixelbit.2014.i44.06

Gregorio, O. (2018). *Análisis de la Educomunicación como campo de investigación en desarrollo: Una aproximación bibliométrica*. Tercer Congreso Internacional de Competencias Mediáticas. https://bit.ly/2UMSUmh

Inhelder, B., & Cellérier, G. (1996). *Los senderos de los descubrimientos del niño. Investigaciones sobre las microgénesis cognitivas*. Paidós. https://bit.ly/2JBQkvvv

Inhelder, B., Sinclair, H., & Bovet, M. (1974). *Apprentissage et structures de la connaissance*. Press Universitaires de France. https://doi.org/10.4324/9781315770932

Lave, J. (2001). La práctica del aprendizaje. In *Estudiar las prácticas: Perspectivas sobre actividad y contexto* (pp. 15-45). Amorrortu. https://bit.ly/33L5yGa

Leontiev, A.N. (1981). *Actividad, conciencia y personalidad*. Editorial Pueblo y Educación. https://bit.ly/3ILKmGp

Lipman, M. (1998). *Pensamiento complejo y educación*. Ediciones De La Torre.

Marinkovich, J. (1999). Una propuesta de evaluación de la competencia textual narrativa. *Signos*, *32*(45-46), 121-128. https://doi.org/10.4067/s0718-09341999000100012

Mateos, T., & Núñez, L. (2012). Narrativa y educación: Indagar la experiencia escolar a través de los relatos. *Teoría de la Educación*, *23*, 111-128. https://doi.org/10.14201/8648

Mercer, N., Hennessy, S., & Warwick, P. (2017). Dialogue, thinking together and digital technology in the classroom: Some educational implications of a continuing line of inquiry. *International Journal of Educational Research*, *97*, 187-199. https://doi.org/10.1016/j.ijer.2017.08.007

Oregui, E., Aierbe, A., & Bermejo, J. (2019). Narrative skill and identification of values and countervalues in cartoons by Primary Education students. *Annals of Psychology*, *35*(2), 269-279. https://doi.org/10.6018/analesps.35.2.331441

Pérez-Rodríguez, A., & Delgado-Ponce, A. (2012). From digital and audiovisual competence to media competence: Dimensions and indicators. [De la competencia digital y audiovisual a la competencia mediática: dimensiones e indicadores]. *Comunicar*, *39*, 25-34. https://doi.org/10.3916/c39-2012-02-02

Pérez-Rodríguez, A., Delgado-Ponce, A., Marín-Mateos, P., & Romero-Rodríguez, L.M. (2019). Media competence in spanish secondary school students. Assessing instrumental and critical thinking skills in digital contexts. *Educational Sciences: Theory & Practice*, *19*(3), 33-48. https://doi.org/10.12738/estp.2019.3.003

Piaget, J. (1975). *L'équilibration des structures cognitives. Problème central du développement*. PUB.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Oxford University Press. https://bit.ly/2LbAzgj

Rogoff, B. (2003). *The cultural nature of human development*. Oxford University Press. https://bit.ly/3qoJAma

Sartre, J.P. (1943). *L'être et le néant*. Gallimard. https://bit.ly/2VDxYgS

Talízina, N. (1988). *Psicología de la enseñanza*. Editorial Progreso.

Tran-Thong, B.J., & Bridier, M. (1977). La fonction d'orientation. L'attitude interrogative chez l'enfant. *Psychologie Scolaire*, *20*, 3-21.

Vygotsky, L. (2000). *El desarrollo de los procesos psicológicos superiores*. Editorial Crítica.

Wertsch, J.V. (1993). *Voices of the mind: Sociocultural approach to mediated action*. Harvard University Press. https://bit.ly/2L9vvJk

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Newsgames against hate speech in the refugee crisis

Newsgames frente a los discursos del odio en la crisis de los refugiados

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ABSTRACT

The refugee crisis has been a fertile ground for hate speech that has portrayed migrants as a dangerous threat and has been spread through social networks. While the media have unconsciously contributed to the proliferation of these racist messages, some have reacted by extending their traditional journalistic activity to the creation of newsgames to find new ways of addressing the situation. This study examines the use of five newsgames developed by leading media outlets using a methodology based on a multimodal qualitative analysis (informative and ludonarrative). The results showed that newsgames players have access to truthful information, as is the case for other journalistic genres, and draw on other types of personal and emotional information (circumstances, feelings, family ties). These data did not appear in isolation but integrated into the gaming experience. The study concludes by identifying the interaction between the levels of information and immersion of the newsgames that make up the sample, as well as their different gradation: giving the player the opportunity to make more significant decisions within the story allows for the introduction of nuances that promote empathy towards refugees; however, greater freedom in the gaming experience in newsgames distances them from the classic informational model and may involve a greater risk of distortion of the ideas that they seek to promote.

RESUMEN

La crisis de los refugiados ha sido el caldo de cultivo para unos discursos del odio, extendidos a través de las redes sociales, que presentan a los inmigrantes como un peligro y una amenaza. Los medios de comunicación han contribuido inconscientemente a su difusión, aunque algunos han reaccionado ampliando su actividad periodística tradicional a la creación de newsgames para buscar nuevas formas de contrarrestar el efecto de estos discursos. Esta investigación analiza cinco newsgames desarrollados por medios de comunicación de referencia a partir de una metodología basada en un análisis multimodal de carácter cualitativo (informativo y ludo-narrativo). Los resultados muestran que el jugador de newsgames tiene acceso a información veraz, como en otros formatos periodísticos, pero también dispone de otro tipo de información más próxima y emocional (circunstancias, sentimientos, vínculos familiares). Estos datos no aparecen de forma aislada, sino que se integran en la experiencia del juego. La investigación concluye identificando la interacción entre información e inmersión de los newsgames que componen la muestra, así como su diferente gradación: un mayor control del jugador dentro de la historia permite introducir matices que favorecen la empatía con los refugiados. Sin embargo, la mayor libertad en la experiencia de juego en los newsgames los aleja del modelo informativo clásico y puede implicar un mayor riesgo de distorsión de las ideas que intentan defender.

1. Introduction

The refugee crisis in Europe, which has been exacerbated since 2015, has posed a number of challenges that have revealed frictions, inconsistencies and ambiguities among European Union countries on how to address the situation. This has resulted in a "collective response […] [that] has been ad hoc and, critics charge, more focused on securing the bloc's borders than on protecting the rights of migrants and refugees" (Park, 2015). Within this political context, hate speech has emerged with the intention of constructing the Other as a dangerous threat to national identity (Alberdi, 2019). Racist and xenophobic claims have been increasingly amplified through social media in the last decade (Nortio et al., 2020), but they have often managed to circumvent potential regulations on the grounds of freedom of expression (Kuna, 2020).

Hate speech is the public expression of derogatory, humiliating and offensive content towards a person for being part of a vulnerable group, characterised by race, religion, gender, or ethnicity, among other aspects (Paz et al., 2020). Fear of Others, usually driven by emotional resources (Ekman, 2019), has been used as a catalyst for the cultural approaches and logic of the so-called new racism (Cisneros & Nakayama, 2015). Thus, growing social and political concern has arisen about the serious consequences of these messages on vulnerable minorities and groups (Gómez-Quintero et al., 2021). National social stereotypes are also part of this situation or at least help to build a broader geopolitical macro-discourse (O'Donnell, 1994), which is present in the statements of the so-called "tolerant majority" (Gotsbachner, 2001). Thus, some European nationalist groups have used Twitter to display a socially accepted racist discourse (Kreis, 2017). This type of discourse dehumanises and depersonalises migrants and refugees while also desensitising the general public. Coupled with the repetitive use of hate speech, these practices reinforce racist attitudes.

In view of this situation, the media is expected to be involved in dismantling racist content and keep citizens informed to avoid false news and the dissemination of xenophobic propaganda (Ibrahim, 2019). However, their reaction has not been very effective so far. Quite the opposite. Sometimes the media have contributed to unconsciously reproducing these messages (Martínez, 2018), and even to amplifying them (Niñoles & Ortega-Giménez, 2020). In addition, certain treatment of information has fostered the characterisation of refugees as "anonymous passive victims" (Wright, 2014). Therefore, unsurprisingly, some authors consider that journalists are not prepared to face the global challenge posed by the presence of these discourses in the media (George, 2014).

Some media outlets have attempted to reverse this perception of refugees through individual accounts of their experiences. Their goal was to "unveil their truth and suffering in an honest way" (Navarro-Remesal & Zapata, 2019: 5). The media's ability to regain this social function has been reassessed through new narratives (De-Aguilera & Casero-Ripollés, 2018) that have concerned themselves with the integration of informational content into game-oriented, interactive and immersive genres such as newsgames and informational gaming (Romero-Rodríguez & Torres-Toukomidis, 2018). Newsgames are developed with the intention of participating in the public debate, while informational gaming involves incorporating game mechanics into news services. The main appeal of these genres is not only the loyalty of digital media users (Ferrer-Conill & Karlsonn, 2016), but also, above all, the incorporation of a different way of presenting information that stimulates participation and collective awareness (Plewe & Fürsich, 2018). However, newsgames transcend the boundaries of both traditional journalistic informational genres, but also opinionated ones. Although their narrative peculiarities may have a different influence on how people construct information about a particular topic (Mañas-Viniegra et al., 2020), game-based interactive offerings trigger a friction between the dominant theses on the distinctive character and the seriousness of journalism, in its search to provide a truthful portrayal of reality to its audiences (Ferrer-Conill et al., 2020).

1.1. Research objectives and questions

The objective of this study lies in the tension between the two elements that constitute the nature of newsgames (the design of a game system and the development of an informational product). It seeks to analyse the message of the game-based interactive offerings developed by the media to complement their

information strategy on the situation of refugees in Europe. It also examines and assesses their potential effectiveness in combating racist and xenophobic hate speech. The research questions are:
- RQ$_1$: What are the features of the news and editorial lines of newsgames developed by the media that have been involved in the coverage of refugee crises?
- RQ$_2$: How have narrative and game-based resources been used in newsgames to combat hate speech?

2. Materials and methods

The heterogeneous and controversial nature of newsgames as journalistic products set the boundaries of the analysis of a format whose traits are "in constant flux and where the borders between such categories are still being actively negotiated" (Grace, 2020: 103). This complexity has led to different methodologies, including the analysis of qualitative content based on specific models of game design (Herrero-Curiel & Planells-de-la-Maza, 2020), its conceptualisation as a "playable text" (Plewe & Fürsich, 2018), the gamification of contents (Arafat, 2020), case studies and virtual ethnography (Tejedor & Tusa, 2020), and integrated proposals (García-Ortega & García-Avilés, 2020). However, these approaches do not fit the purpose of this research, namely, the study of the involvement of digital games and their incorporation in the informational context of the media when faced with hate speech.

2.1. Methodology

This proposal is situated within the analysis of newsgames as multimodal discourse based on a theoretical substrate that locates them within digital journalism (Salaverría, 2019) and serious games (Romero-Rodríguez & Torres-Toukomidis, 2018). Both approaches provide complementary perspectives that lead to a model (Table 1) that, while not intending to be exhaustive in its configuration and construction, seeks to bring together two layers of analysis that constitute the uniqueness of newsgames: the fact that they are both informational and game-based/interactive. Therefore, only a limited number of elements come into play within the model to ensure the operability of the analysis by limiting the number of variables.

Table 1. Multimodal analysis model for newsgame discourse			
Theoretical perspective	Conceptualisation of newsgames	Levels of analysis	Analysis categories
Media Studies	Informational product	Formal parameters	Journalistic genre
			Journalism methodology
			Multimedia elements
			Journalistic quality
			Sources
		News discourse analysis	Informative description
			Topics
			Frames
Narratology	Audiovisual narrative	Dramatic construction	Narrative architecture
			Characters. Point of view.
			Emotional design/Empathy
			Narrative Universe
Ludonarrative	Procedural rhetoric	Interactivity analysis	Game Mechanics
			Level of interaction
			Taxonomy of choices
Game Studies	Ludic nature	Immersion	Types of immersion
		Agency	Interaction models
		Transformation	Scope of action

This model served as the initial roadmap for the codification of the informational and ludonarrative dimensions. The "informational" dimension identifies journalistic features in newsgames based on the "tumbled pyramid" model of digital media (Canavilhas, 2007) and immersive journalism (Paíno & Rodríguez, 2019). It also incorporates the identification and analysis of the formal parameters of the news message as a journalistic genre, featuring its own treatment and resources. Compliance of newsgames with journalistic quality criteria (García-Ortega & García-Avilés, 2020), and their capacity to participate in public opinion through news frames (Semetko & Volkenburg, 2000) are also taken into account.

The analysis of ludonarrative dimension draws on socio-semiotic models (Pérez-Latorre et al., 2017) which, on the one hand, take into account the narrative elements that drive the dramatic construction

through the representation of characters, narrative architecture, emotional design and empathy (Isbister, 2017; Kwong, 2019; Cuadrado & Planells, 2020) and, on the other hand, the conception of the discursive elements of digital games: immersion, agency and transformation (Murray, 1999). The confluence of both dimensions has been interpreted from the perspective of procedural rhetoric (Bogost, 2007), which identifies how arguments are inserted in the rules of the game and how rules are expressed, communicated and understood by the player (De-la-Hera, 2019). The mechanics have been understood as a "palette of actions available to the player" (Fernández-Vara, 2015: 97-99), and the type of interaction and agency that each game proposes has been evaluated and understood as "the satisfying power to take meaningful action and see the results of our decisions and choices" (Murray, 1999: 139).

2.2. Sample and analytical procedure

The sample comprised newsgames that have addressed the refugee crisis in recent years, and which had also been published in the digital editions of news media outlets. Specialised databases (Serious Games Classification or Games 4 Change) and academic references (García-Ortega & García-Avilés, 2020) were used for the sample selection. Of the 16 newsgames that were found to address this topic, only five had been developed by the media. They make up the sample analysed: "The Refugee Challenge" (The Guardian, 2014), "Two Billion Miles" (Channel 4, 2015), "Syrian Journey: Choose your own adventure" (BBC, 2015), "Bury Me, My Love" (ARTE, 2017) and "The Waiting Game" (ProPublica, 2017). The analysis was developed by the researchers, both individually and collectively, in different sessions. Every session was recorded. The game screen was saved, and a research diary was kept for each session.

These data were subsequently coded using Atlas.ti to systematise a double coding process. Specifically, both an inductive coding scheme based on the categories of the multimodal analysis model and a deductive coding scheme linked to a "theoretical sensitivity" (Glaser & Strauss, 1967: 46) were used to detect recurrent codes and patterns emerging outside the initial planning. In this way, concurrences were detected in the discourse of these newsgames (gender, family, etc.) that were included in the results.

3. Results

3.1. Results of the news discourse analysis

The journalistic content of newsgames appeals to a reader who is already well informed about the situation of refugees in Europe and the reasons for the exodus of the civilian population. The news narrative presents the personal experiences of the characters through a significant number of sub-themes. Most of these newsgames focus on providing information about why and how these journeys take place and what dangers they involve: being deceived by traffickers, the need to resort to forged documents, the situation in refugee camps, police arrests and return to their countries of origin, bureaucratic obstacles, language difficulties and the lack of basic necessities (water, food). All these aspects are presented from the point of view of refugees, mainly Syrian refugees, although "The Waiting Game" provides five types of stories that cover a wider range of migrants and the causes of their migration (racial, religious, nationality-based, membership of vulnerable groups and ideological dissent).

Some of the newsgames analysed ("Syrian Journey", "The Waiting Game", "The Refugee Challenge") are based on the news report genre and have been adapted to the patterns of journalistic production (news briefing, use of sources). During the game, documentary references are used with testimonies of refugees and visual montages of their living conditions during the journey, in detention centres or in refugee camps. They also use journalistic texts with contextual data; "The Waiting Game" even emphasises that this is not fiction and warns the player that their stories "are not composites".

In contrast to those newsgames that are closer to a traditional conception of journalism, "Bury Me, My Love" and "Two Billion Miles" transcend the field of journalism, as they are also dramatic constructions, but based on reality. "Bury Me, My Love" is defined as an interactive fiction where its developers based their main characters, Majda and Nour, on the story of Dana Nour, a Syrian woman who was featured in an article published by Lucie Soullier in Le Monde in 2015, which was intended to make the public perceive them as "real people" (Navarro-Remesal & Zapata, 2019: 9). These two types of newsgames are also distinguished by a different display of information. Those closest to journalism present the information

at the beginning of the game, and it remains easily accessible on the screen. In contrast, those which are more inclined to dramatisation ("Two Billion Miles" and "Bury Me, My Love") opt for a brief initial introduction and the rest of the information is doled out (or hidden) in each one of the options presented to the player to provide a greater sense of immersion without detracting from the veracity of the game. This factual introduction connects with the encyclopaedic character of digital games (Murray, 1999: 94), but also with their need to convey a complex message without overwhelming the player and always based on the decisions made by the player.

What both models have in common is the desire to simplify information and the interest in bringing the situation of refugees closer to the public through simple arguments and comparisons: "Channel 4 News estimates that they have travelled over 2 billion miles. The same as 80,000 times around the planet or 8,000 trips to the moon... It has become the world´s most dangerous journey "(Two Million Miles); or "Turkey alone has received 10 times the number of Syrian refugees as all EU member states together" ("The Refugee Challenge"). In addition, these newsgames take advantage of the multimedia potential that is found in this genre. The exception is "Bury Me, My Love", which only includes maps or photographs (in animated format) that are sent by the characters via WhatsApp. "Syrian Journey" involves the player through two hashtags #whatwouldyoutake and #Syrianjourney, which offer images and videos.

All these newsgames more or less explicitly refer to the sources used. The predominant sources are official (institutions, national and supranational public administrations, such as the UN Commissioner for Refugees), other media ("The New York Times", "The Washington Post", "Le Monde", etc.), NGOs (UNHCR and First Friends), and self-references (especially in those by "Channel 4" and "The Guardian"). In addition to these sources, they include interviews with those directly involved in the cases being addressed (psychiatrists, lawyers, judges, etc.) and refugees. This breadth and variety of sources, as well as the abundant presence of links that expanded the informative contents, bestowed the information with a quality and a strong sense of authority. It also allowed for different points of view to be included: "The Waiting Game", for example, recognises that there is fraud in asylum applications.

The editorial line and the attribution of responsibility for these journalistic products come from two approaches. Some newsgames criticise the government policies of the host countries ("The Waiting Game" and "The Refugee Challenge"). Others ("Syrian Journey" and "Two Billion Miles") emphasise the poverty, war, repression and government corruption in the countries of origin. The latter, along with "Bury Me, My Love", show images of television news that focus on the lives of refugees documenting their stories. They seek empathy and understanding, and position themselves by denouncing a social and human tragedy. This editorial line is present in the rest of the newsgames. There is also a clear intention to denounce this situation: it is not just a question of providing a documented opinion, but of emphasising injustice through very simple data such as what refugees want, why and what circumstances they have to endure to achieve it. The construction of human pain indirectly points to those responsible for these situations and, above all, seeks to generate a level of social awareness that forces states and institutions to take action.

3.2. Results of the ludonarrative structure

Newsgames rely on narrative and gaming resources to build empathy and immersion. In this way, they encourage the player to stay in connection with the plight of refugees longer than they would if they simply read a news story; and they do so in a different way, which can enhance the impact of the information. This immersion is shaped by the type of choices that each newsgame offers, which are presented through different narrative structures: linear ("The Waiting Game"); tree structure; along parallel paths with different endings ("Syrian Journey" and "Bury Me, My Love"); or as a network ("The Refugee Challenge" and "Two Billion Miles").

The interest of this narrative architecture lies in how it invites the player to explore the maps of the story and what types of experience it offers. While the linear structure of the story in "The Waiting Game" moves the narrative construction to the limited arc of choices that the game proposes, for the other two structures -tree and network- interest resides in their ability to affect the player's experience.

Figure 1. Narrative structure of "Syrian Journey"
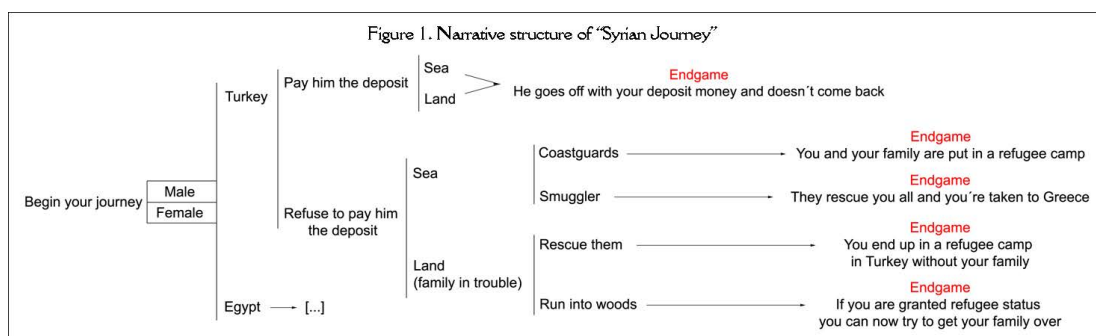
The structure of "Syrian Journey" (Figure 1) presents a restrictive narrative approach, since the player cannot turn back or jump to other lines of choice. As the user's decisions cannot generate contradictions, this enhances the story's structure control and narrative coherence. In addition, it allows information content to be revisited and highlights the decisions and experiences of refugees who are present in these news pieces. However, the rigidity of this narrative construction limits the player's perception of freedom because the exploration of other possibilities involves starting from the beginning.

Figure 2. Narrative structure of "The Refugee Challenge"
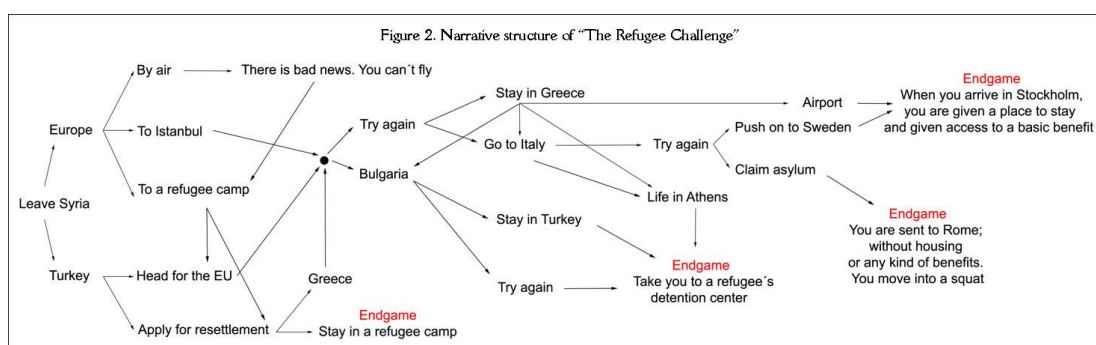
Unlike the previous model, the structure in "The Refugee Challenge" consists of 25 interconnected narrative nodes. This "maze" design suggests a greater sense of freedom for the user to explore the map of the news story. The brevity of the gaming experience leads to a simplification of the information provided in exchange for enhancing the emotional experience brought about by the degree of immersion (the player makes an average of 6-7 choices in each course, the equivalent of approximately 10 minutes).

3.2.1. Dramatic construction through viewpoint

The interest in stressing the refugee perspective has been a part of newsgames since their inception. All the games start from a first-person narrative that presents the story and its protagonist, with the purpose of encouraging the player to identify with the life path of refugees. For example, "The Refugee Challenge" begins by stating: "Your name is Karima. You are a 28-year-old Sunni woman from Aleppo, and you have two children, a girl aged eight, and a 10-year-old boy. Your husband was killed in a mortar attack three months ago. The air strikes have continued - a recent bomb, you hear, killed 87 children - and you now feel you must try to leave Syria". Some newsgames use a broader setting. Thus, "The Waiting Game" has five different scenarios to choose from. For example, the experience of a Tibetan who suffers discrimination in Nepal or that of a mother in El Salvador who escapes from the abuse of her alcoholic husband taking her son with her. The use of biographical data to enhance the introduction encourages compassion, while focusing on the causes of the journey and the precarious conditions in which it is made. The only exception to this direct introduction of the characters is "Bury Me, My Love", which uses a dramatic presentation in which these data are replaced by a Whatsapp message dialogue on the attacks in Syria between the protagonists, Nour and Majd.

Some of the games have significant features in this kind of viewpoint construction. In "Syrian Journey", the player may decide to be male or female; whereas that choice does not affect travel, it does have an

impact on some situations. Most options do not take into account the needs, physical characteristics or threats of the male or female status of the characters. If the trip is made through Turkey, there is no difference. However, if the immigrant travels through Egypt, four differences arise; while in two of the situations, being a woman is beneficial, in two others it is better to be a man. Therefore, the character's gender has little effect on their fate, except when the player travels through Benghazi and the means of transport used is assaulted by the Libyan militia demanding money. If the player is a man who decides to negotiate with militia members, he is beaten and abandoned in the desert. If the player is a woman, "more men suddenly appear. You try to tell them that you must return to the truck, but they force you to get in a car and take you away from there to be sold from one militia to another". The game does not use the term rape, but the concept is tacitly present.

"The Waiting Game" involves a choice between two female characters: a mother in El Salvador or a young woman studying engineering at the University of Kinshasa. Nothing that happens to the young Nigerian is related to her gender: prison hardship, living in distress at the home of some relatives in the Congo… Everything could happen to a male character. As for the Salvadoran mother, the game does look at the aspect of being a mother. There is a strong presence of the child in terms of small daily actions (he greets, plays, cries, asks awkward questions) and she takes care of him. In contrast, in "The Refugee Challenge", Karima's children have no name and there are hardly any references to them. Only when they are returned from Bulgaria to Turkey is it said that "the children were crying all the way back". Meanwhile, the videos that can be accessed during the game do provide an emotional connection with the children that is not in the story itself that the player constructs.

3.2.2. Building discourse through actions

The analysis of interactivity in newsgames has identified three core groups of actions for decision making: movement, ethics, and cause/effect. The interest of these actions comes from their quantative and qualitative influence on the player's activity and, consequently, on the message they receive. The most numerous are those of movement, whether directional, adventurous or exploratory. This importance of travel as player action reflects the interest in building empathy for refugees fleeing a hostile environment and establishes a model of journey as an escape in adverse circumstances. This trend is slowed down in "The Waiting Game", where part of the essence of the game is the player's inability to move forward, and is reinforced in Refugee Challenge, where most choices (Figure 2) involve moving and culminate in either "apply for asylum" or "return to…". These are two options that entail that the game has come to an end, having been more or less fortunate.

Figure 3. Decisions and actions in a) "Syrian Journey" and b) "The Waiting Game"

"Syrian Journey" and Two Million Miles present a set of decisions that challenge the player's moral principles. When crossing Greece's border with Turkey, the "Syrian Journey" player must decide whether to help a mother and her daughter who are at risk of drowning (Figure 3a). Making this humane choice

means that the player will not be able to reach the Greek coast and will lose contact with their family who have already crossed the border. However, the more selfish option results in the player taking advantage of the commotion to flee and then travelling to Manchester, where they seek asylum and have a good outcome in the game. This contrast between a form of ethical behaviour and a decision associated with pure survival is one of the main sources of moral debate that is proposed.

Finally, cause/effect choices are offered in three ways. The first is the central mechanics in "The Waiting Game", since the only two choices available throughout the game are "Keep Going" or "Give up" (Figure 3b). There are no crossroads or dilemmas that lead the player to one place or another. The player is involved in the difficult existence of a migrant in their waiting process. The game makes narrative time pass slowly, although the beginning of the story is intended to encourage the player not to give up. However, the narrative construction is designed for the opposite to happen: to push the player into giving up. Therefore, the full story of each character involves pressing the continue button (each click is the equivalent of a day of waiting) between 700 and 1200 times, which drives the game's goal of trying to make the player give up in order to obtain a simplified journey story. This 2-choice dynamic encourages the critical reflection that this game seeks to convey by limiting the player's actions. In this way, it is a metaphor for the lives of refugees seeking asylum from the Trump administration.

The choices of the second model are "invisible" to the player. At some points in the process, "Syrian Journey" gives the player the choice of either venturing around the city to buy food and water, or to stay hidden. If the player opts to go out, they can acquire food supplies and floats that will later make the difference between life and death if the player is in a boat that sinks into the sea. Thus, in the journey travelled in "The Refugee Challenge", the player is forced to make decisions or act in ways that force them to reflect on the injustice of the situation, even though they are narratively random. The game that takes this uncertainty to the extreme is "Bury Me, My Love", since the decisions made as Majd affect Nour's journey and, therefore, one of its 30 possible endings. These decisions are related to four variables quantified by the game, but invisible to the player: the couple's emotional situation, determination, money, and Nour's inventory. However, the value of the player's decision is never known in advance; this contains the element of surprise, but also a certain disconnection between the player and the game because of how arbitrary or random decisions influence the story.

The third type of cause/effect decisions are "unfair" to the player: they allow progress to be made, but without knowing their true significance for the evolution of the game. In "Two Billion Miles" there are several routes that lead to the option of taking a train to Germany. At this moment, the game limits the information: "the destinations at the train station mean little to you". The game disregards the fact that real migrants can access information through the media, their mobile phones or rumours they hear (Alencar, 2020), but the game pushes them to make blind choices to reinforce the construction of uncertainty. The options are "Go to Munich", "Take train to Stuttgart", "Head to Dortmund" or "Travel to Rosenheim". If the player chooses Munich or Dortmund they are greeted with welcome banners and given accommodation; the goal of being well received is therefore achieved. If the player chooses Rosenheim or Stuttgart, they will find a hostile climate: anti-immigration demonstrations by the Pegida movement, burnt hostels, sleeping on the street... And it is raining while the player is asked the question: "Do you feel welcome?".

4. Discussion and conclusions

Racist and xenophobic discourses currently have become less virulent but more sophisticated, through the use of sources, context, and emotions (Meddaugh and Kay, 2009). Dealing with the effects of these discourses on the social and educational environment is not an easy challenge (McNamee et al., 2010) and requires the support of responsible and vigilant governments and media that report appropriately. Paradoxically, these media can be a solution but also a problem, and their ability to deal with hate speech has been questioned (George, 2014). The reaction of the media has been, in part, to adapt their news coverage to the new narrative and interactive genres proposed by digital media.

The informational experiences proposed by these five newsgames seek to recode the construction of the Other in the face of the influences of hate speech. This is done by promoting reactive empathy, which makes the player responsible for the fate of refugees and their families. To achieve this, an immersive

experience is used that is unlike the one provided by other media, which engages the player in an emotional discourse that is full of details about who the refugees are and the circumstances that compel them to start their journey. The image of the family is featured as the protagonist in this construction. Parents (regardless of gender) fight for the well-being of their children. Newsgames stimulate this kind of involvement in family destiny to arouse the player's sympathy. This approach is reinforced by an analysis of the context that does not entail remaining on one side, but is integrated into the experience: sounds, statements and images of their places and their faces are included in the game. Thus, the disaggregated images seen in other media find a better communicative expression in these newsgames, while the newsgames gain credibility thanks to their use. In doing so, the use of narrative or ludic resources, such as the construction of characters or the creation of dilemmas that always favour a benevolent interpretation of the motivations of refugees, makes it difficult to characterise them as subjects who deserve to be hated or rejected.

The integration of news coverage into a gaming experience is heterogeneous. This study has identified three different ways in which news discourse and gaming elements come together: newsgames in the strict sense, the gamifying of journalistic content and interactive stories presented as a game. The complete integration of the components that define the game as "a rule-based system with a variable and quantifiable outcome" (Juul, 2005: 36) only occurs in "Bury Me, My Love". The narrative universe is driven by the player's decisions (albeit covertly for the player), so their power to transform the story is greater than in "Syrian Journey", "The Refugee Challenge" or "Two Billion Miles", games that are linked to the gamifying of journalistic content. Here the user is more restricted and the results of their decisions are more predictable: the player has greater control over what is transmitted, but their feeling of involvement is reduced. Finally, "The Waiting Game" is more of an interactive story due to the limited capacity for action and transformation of the reader. In this case, the player's actions are limited to either waiting or giving up: there is nothing else to do. The player's decisions can only affect the narrative pace. This is a rather suggestive metaphor: the player must give up in order to have access to the classic news format in which only the essential is highlighted.

It can be concluded that offering more control to the player results in a greater branching of the narrative that increases the number of possible choices. These choices require complex and realistic approaches to the refugee's story that provide a better and more in-depth understanding of their situation. However, the freer the player's experience is, the less their interpretation of the gaming experience can be conditioned. This brings into question the educational function of the media as transmitters of a type of meaning chosen as appropriate. Moreover, there arises the fear of distortion, or even of trivialisation. "Syrian Journey" received criticism for transforming "the human suffering of literally millions into a children's game" (Sales & Paynes, 2015). The BBC responded that the newsgame was simply another source for those who wanted to understand the real dilemmas the refugees face (Gander, 2015). The way in which this knowledge is acquired is a transgression of the limits of the current news construction, but it has the ability to be truthful and perhaps more profound if the player is enabled to interact, which could lead to greater resistance to being influenced by hate speech.

Further research will be needed to specify the influence and reception process of newsgames, as well as the development of interventions with different types of players and speeches to assess whether there can be genuine changes in attitudes. It would also be beneficial to study if the greater use of newsgames as a journalistic format drives a more audacious narrative and interactive approaches and, therefore, a greater transfer in the control of information by the media.

References

Alberdi, C. (2019). Anti-immigration discourse on twitter: discourse on others and hate speech. *Caietele Echinox, 36*, 133-150. https://doi.org/10.24193/cechinox.2019.36.11
Alencar, A. (2020). Mobile communication and refugees: An analytical review of academic literature. *Sociology Compass, 14*(8), 1-13. https://doi.org/10.1111/soc4.12802

Arafat, R.K. (2020). Rethinking framing and news values in gamified journalistic contexts: A comparative case study of Al Jazeera"s interactive games. *Convergence*, *26*(3), 550-571. https://doi.org/10.1177/1354856520918085

ARTE (Ed.) (2017). *"Bury Me, My Love"*. https://bit.ly/3373qIN

BBC (Ed.) (2015). *Syrian Journey: Choose your own adventure*. https://bbc.in/3nlhgZL

Bogost, I. (2007). *Persuasive Games: The expressive power of videogames*. MIT Press. https://doi.org/10.7551/mitpress/5334.001.0001

Canavilhas, J. (2007). *Webnoticia, propuesta de modelo periodístico para la WWW*. Universidade da Beira Interior. https://bit.ly/3ciGKsb

Channel 4 (Ed.) (2015). *"Two Billion Miles"*. https://bit.ly/2UOLbmW

Cisneros, J., & Nakayama, T. (2015). New media, old racisms: Twitter, Miss America, and cultural logics of race. *Journal of International and Intercultural Communication*, *8*(2), 108-127. https://doi.org/10.1080/17513057.2015.1025328

Cuadrado, A., & Planells, A.J. (2020). *Ficción y videojuegos. Teoría y práctica de la ludonarración*. UOC. https://bit.ly/3qy1dQq

De-Aguilera, M., & Casero-Ripollés, A. (2018). ¿Tecnologías para la transformación? Los medios sociales ante el cambio político y social. *Icono14, 16*(1), 1-21. https://doi.org/10.7195/ri14.v16i1.1162

De-la-Hera, T. (2019). *Digital gaming and the advertising landscape*. Amsterdam University Press. https://doi.org/10.5117/9789462987159

Ekman, M. (2019). Anti-immigration and racist discourse in social media. *European Journal of Communication*, *34*(6), 606-618. https://doi.org/10.1177/0267323119886151

Fernández-Vara, C. (2015). *Introduction to game analysis*. Routledge. https://doi.org/10.4324/9780203794777

Ferrer-Conill, R., Foxman, M., Jones, J., Sihvonen, T., & Siitonen, M. (2020). Playful approaches to news engagement. *Convergence*, *26*(3), 457-469. https://doi.org/10.1177/1354856520923964

Ferrer-Conill, R., & Karlsson, M. (2016). The gamification of journalism. In H. Gangadharbatla, & D. Davis (Eds.), *Emerging research and trends in gamification*. AMIT. https://doi.org/10.4018/978-1-4666-8651-9.ch015

Gander, K. (2015). *BBC defends ""Syrian Journey"" game where player confront problems refugees fase*. Independent. https://bit.ly/3hYllk9

García-Ortega, A., & García-Avilés, J. (2020). When journalism and games intersect: Examining news quality, design and mechanics of political newsgames. *Convergence: The International Journal of Research into New Media Technologies*, *26*(3), 517-536. https://doi.org/10.1177/1354856520918081

George, C. (2014). Journalism and the politics of hate: Charting ethical responses to religious intolerance. *Journal of Mass Media Ethics*, *29*(2), 74-90. https://doi.org/10.1080/08900523.2014.893771

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory. Strategies for qualitative research*. Aldine. https://doi.org/10.1097/00006199-196807000-00014

Gómez-Quintero, J., Aguerri, J., & Gimeno-Monterde, C. (2021). Media representation of minors who migrate on their own: The 'MENA' in the Spanish press. [Representaciones mediáticas de los menores que migran solos: Los MENA en la prensa española]. *Comunicar*, *66*, 95-105. https://doi.org/10.3916/C66-2021-08

Gotsbachner, E. (2001). Xenophobic normality: The discriminatory impact of habitualized discourse dynamics. *Discourse & Society*, *12*(6), 729-759. https://doi.org/10.1177/0957926501012006002

Grace, L.D. (2020). *Doing things with games. Social impact through play*. CRC Press. https://doi.org/10.1201/9780429429880

Herrero-Curiel, E., & de la Maza, A.J.P. (2020). Nuevas narrativas periodísticas entre la información y la simulación lúdica: Los docuwebs y los newsgames. *Palabra Clave*, *23*(2), 1-26. https://doi.org/10.5294/pacla.2020.23.2.5

Ibrahim, A.M. (2019). Theorizing the journalism model of disinformation and hate speech propagation in a Nigerian democratic context. *International Journal Of E-Politics*, *10*(2), 60-73. https://doi.org/10.4018/IJEP.2019070105

Isbister, K. (2017). *How games move us. Emotion by design*. MIT Press. https://doi.org/10.7551/mitpress/9267.001.0001

Juul, J. (2005). *Half-Real. Video games between real rules and fictional worlds*. MIT Press.

Kreis, R. (2017). #refugeesnotwelcome: Anti-refugee discourse on Twitter. *Discourse & Communication*, *11*, 498-514. https://doi.org/10.1177/1750481317714121

Kuna, M. (2020). A critique of Brown´s concept of hate speech. *Filozofia*, *75*(2), 77-90. https://doi.org/10.31577/filozofia.2020.75.2.1

Kwong, R. (2019). *Why emotional storytelling is the future of the journalism*. Robin Kwong. https://bit.ly/2UNnV8C

Mañas-Viniegra, L., Veloso, A., & Sierra-Sánchez, J. (2020). Contenidos inmersivos violentos: Investigación con eye tracking en jóvenes universitarios en España y Portugal. *El Profesional de la Información*, *29*, 1-10. https://doi.org/10.3145/epi.2020.ene.08

Martínez, L. (2018). *Diez formas de evitar el discurso xenófobo en los medios de comunicación*. Eldiario.es. https://bit.ly/2M1jG7X

McNamee, L., Peterson, B., & Peña, J. (2010). A call to educate, participate, invoke and indict: Understanding the communication of online hate groups. *Communication Monographs*, *77*(2), 257-280. https://doi.org/10.1080/03637751003758227

Meddaugh, P., & Kay, J. (2009). Hate speech or reasonable racism. *Journal of Mass Media Ethics*, *24*(4), 251-268. https://doi.org/10.1080/08900520903320936

Murray, J. (1999). *Hamlet en la holocubierta: el futuro de la narrativa en el ciberespacio*. Paidós.

Navarro-Remesal, V., & Perez-Zapata, B. (2019). First-person refugee games: Ludonarrative strategies for playing the stories of refugees and asylum seekers. In N. Zagalo (Ed.), *Videogames sciences and art* (pp. 3-17). Springer. https://doi.org/10.1007/978-3-030-37983-4_1

Niñoles-Galva, A., & Ortega-Giménez, C. (2020). Discurso del odio en radio: análisis de los editoriales de las cadenas COPE y SER tras la llegada del Aquarius a España. *Miguel Hernández Communication Journal*, *11*(1), 117-138. https://doi.org/10.21134/mhcj.v11i0.317

Nortio, E., Niska, M., Renvik, T.A., & Jasinskaja-Lahti, I. (2020). 'The nightmare of multiculturalism': Interpreting and deploying anti-immigration rhetoric in social media. *New Media & Society*. https://doi.org/10.1177/1461444819899624

O'Donnell, H. (1994). Mapping the mythical - a geopolitics of national sporting stereotypes. *Discourse & Society*, *5*(3), 345-380. https://doi.org/10.1177/0957926594005003005

Paíno, A., & Rodríguez, M.I. (2019). *Proposal for a new communicative model in immersive journalism*. Journalism. https://doi.org/10.1177/1464884919869710

Park, J. (2015). *Europe´s migration crisis*. Council on Foreign Relations. https://bit.ly/2EiOGNA

Paz, M., Montero, J., & Moreno, A. (2020). Hate speech: A systematized review. *SAGE Open*, *10*(4). https://doi.org/10.1177/2158244020973022

Pérez-Latorre, O., Oliva, M., & Besalú, R. (2017). Videogame analysis: A social-semiotic approach. *Social Semiotics*, *27*(5), 586-603. https://doi.org/10.1080/10350330.2016.1191146

Plewe, C., & Fürsich, E. (2018). Are newsgames better journalism? Empathy, information and representation in games on refugees and migrants. *Journalism Studies*, *19*(16), 2470-2487. https://doi.org/10.1080/1461670X.2017.1351884

ProPublica (Ed.) (2017). *"The Waiting Game"*. https://bit.ly/2IYkwRE

Romero-Rodríguez, L., & Torres-Toukoumidis, A. (2018). Con la información sí se juega: Los newsgames como narrativas inmersivas transmedias. In *Gamificación en Iberoamérica*. *Experiencias desde la comunicación y la educación*. Abya-Yala. https://bit.ly/2TLCK8O

Salaverría, R. (2019). Digital journalism: 25 years of research. *El Profesional de la Información*, *28*(1), 1-26. https://doi.org/10.3145/epi.2019.ene.01

Sales, D., & Payne, W. (2015). *Fury at sick BBC flee Syria refugee game*. The Sun. https://bit.ly/33M5567

Tejedor, S., & Tusa, F.E. (2020). Los newsgames como herramienta periodística: Estudio de caso de experiencias de éxito. *Prisma Social*, *30*, 115-140. https://bit.ly/3gbGCg6

The Guardian (Ed.) (2014). *"The Refugee Challenge"*. https://bit.ly/394Ep4G

Wright, T. (2014). The media and representations of refugees and other forced migrants. In E. Fiddian-Qasmiyeh, G. Loescher, K. Long, & N. Sigona (Eds.), *The Oxford Handbook of Refugee and Forced Migration Studies* (pp. 460-470). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199652433.013.0034

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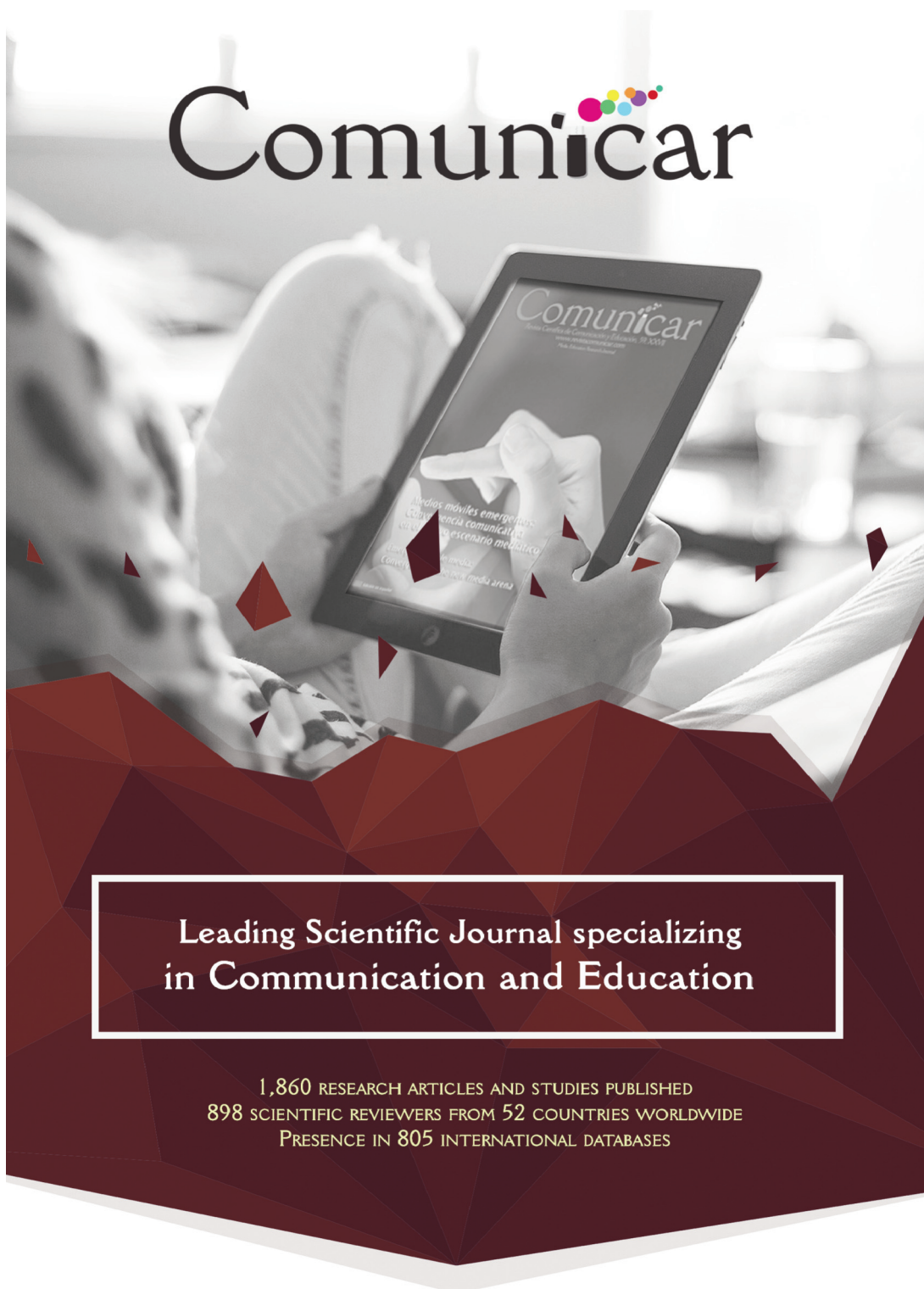
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