

STUDY TITLE:

WISE INTERVENTIONS FOR ADOLESCENTS AND YOUNG PEOPLE IN THE DIGITAL
SOCIETY

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BACKGROUND

From an evolutionary perspective, adolescence is a period that involves important transitions and learning opportunities. That is why it is probably at this stage that immersion in digital society takes place more prominently. Adolescents and young people learn and develop new competencies and facets in the digital society. Hence, a large part of their social relationships takes place through social media.

Digital society is full of positive opportunities for the emotional and social development of adolescents and young people. They can develop positive interactions through prosocial behaviors, empathy, and social support towards others (Wright & Li, 2011). Recent studies have found that adolescents' prosocial behavior – both online and offline – is predominantly relational and directed towards others (van Rijsewijk et al., 2016). In this way, both modes of prosocial behavior share a similar pattern (Wright & Li, 2011). Although knowledge about the digital facet of prosocial behavior is currently scarce, some studies have highlighted the relevant implications that the development of online prosocial behaviors could entail at the individual, interpersonal, and social levels. Thus, it has been suggested that online prosocial behavior could increase relationships and improve their quality, fostering adolescent self-esteem and well-being (Valkenburg & Peter, 2011).

Although digital society offers great opportunities, at the same time it is not without potential risks, especially in adolescence, a stage of psychological vulnerability for risky behaviors. Thus, some of the problems that occur in offline social relations, such as bullying and dating abuse, extend to the digital society. Like traditional bullying, online forms of bullying negatively affect the health and quality of life of the victims (Kowalski et al., 2014). Although the forms of offline and online psychological abuse coexist in relationships, there are a few factors that suggest that they are different problems. For example, online abuse may manifest permanently on the Internet, and abusive messages and images may be forwarded by third parties, implying some revictimization (Stonard et al., 2014). Once an image, video, or information is disseminated on the Internet by the perpetrator, it can remain in cyberspace indefinitely (Gámez-Guadix et al., 2015). In fact, it is almost impossible to remove some contents that have been disseminated over the Internet, as many people can store them. This public nature of cyber abuse, which implies that the aggression can spread and reach many people, can make the humiliation especially harmful for the victim (Peskin et al., 2017). Finally, victimization and online bullying are mainly indirect, rather than face-to-face (Smith, 2012). The aggressor does not see the victim's reaction immediately, which can facilitate insensitivity and lack of empathy towards the victim.

In addition, specific risks such as *grooming* and *sexting*, which can have very negative consequences for the adolescents and young people involved, have been created in the context of digital society. *Grooming* is a serious social problem, which is considered a criminal offense in Spain. It involves a process by which an adult, using

digital means, tricks a minor to obtain sexual material (images, videos) from them or to sexually abuse them directly. Studies with adolescents aged 10 to 17 years indicate a prevalence of the problem between 5 and 9% (Bergen et al., 2014). *Sexting* refers to the act of sending photographs and videos with some level of sexual content, taken or recorded by the protagonist, through digital means. Often, this exchange occurs without the people, especially the younger ones, being truly aware of the consequences of this action or what might happen if the image reaches third parties or is made public. In Spain, a sexting prevalence rate of 13.5% has been found (Gámez-Guadix, de Santisteban, & Resett, 2017).

A common characteristic of several online risks is the high reciprocity between victimization and behavior performance. Thus, the association between cyberbullying and dating violence victimization and perpetration is usually high (Royuela-Colomer et al. 2018). In the case of grooming, there is usually a high association between experiencing sexual solicitation, in which the adolescent is contacted by an adult who asks them to send materials such as photos or videos of a sexual nature, and the behaviors of establishing risky interactions with the requesting adult (Gámez-Guadix et al., 2018). In recent years, a number of preventive interventions have been developed to reduce risky behaviors in the digital society. Most have focused on cyberbullying (e.g., Garaigordobil & Martínez-Valderrey, 2015; Gradinger et al., 2016), with fewer measures aimed at other risks such as *grooming* (Gámez-Guadix et al., 2018). These interventions present some areas for improvement that are challenges for scientific psychology. The area of improvement is not specific to these interventions, but to all preventive interventions aimed at adolescents in general. Thus, according to important and rigorous meta-analytical studies, the effectiveness of these interventions is extremely limited. For example, in a review of 22 studies that examined the effects of interventions on bullying, only 11 studies (50%) showed significant effects on its reduction (Evans et al., 2014).

Why do interventions for adolescents and young people fail?

Based on the results of some meta-analyses, a student's degree of development can act as an important variable that moderates the impact of intervention programs (e.g., Kärnä et al., 2011; Lee et al., 2015; Yeager et al., 2015). However, there is some debate about how this moderation takes place. Some authors conclude that anti-bullying programs and programs to reduce other risky behaviors are more effective among adolescents than among children (e.g., da Silva et al., 2017; Lee et al., 2015; Ttofi & Farrington, 2011). In contrast, other reviews and meta-analyses have concluded that the effects of the interventions are low for adolescents and older youth. For example, through hierarchical meta-analysis, Yeager et al. (2015) found that traditional anti-bullying interventions were effective from childhood to early adolescence. They also found that there was a decrease in their effectiveness with age until reaching a null

effect in the case of adolescents (second grade of Compulsory Secondary Education [CSE] and higher courses). They therefore concluded that the effectiveness of traditional anti-bullying programs is limited as of adolescence, just at a time when these programs are extremely necessary.

Many universal preventive interventions are based on decision-making theories and generating change through thoughtful knowledge. They draw on the premise that if adolescents are provided with aspects such as risk information, as well as skills training and education in appropriate values, behavioral change will be facilitated. However, some features of adolescence can cause these approaches to fail. Compared to children, adolescents are more sensitive to feeling respected and to the acknowledgment of their status and autonomy (Yeager et al., 2018). Therefore, if adolescents perceive that adults are trying to manipulate them or introduce patterns of behavior that threaten their autonomy, they will often resist. In contrast, younger children voluntarily accept adult authority and curricular activities (Andreou et al., 2007). In support of this conclusion, a national probabilistic survey of youth in the United States found no reduction in the perpetration of bullying in older children and adolescents, even though they were the target of most of the interventions (Finkelhor et al., 2014). The authors interpreted the lack of effect of the interventions for older participants as a reflection of their mistrust and lower motivation for participating in these interventions. This would explain the paradoxical effects of some universal interventions aimed at adolescents in other areas. For example, some programs aimed at preventing obesity and promoting sports have shown the opposite effect, such that the recipients of these interventions increased their weight and reduced their sports practice (Stice et al., 2006).

Wise interventions to improve relationships in the digital society

Very recently, interest in scientific social psychology has grown due to a new approach to interventions, which have been called "*wise interventions*". This approach involves a set of rigorous techniques, based on theory and research, that address specific psychological processes to help people thrive in various life environments (for a review, see Walton & Wilson, 2018).

Wise interventions emphasize the subjective creation of meanings, how people interpret themselves and social situations, and, in doing so, can effectively change behavior in recursively over time (Walton, 2014). These types of interventions have been applied to problems that can have a significant cost at the personal, social, and economic levels. Indeed, in recent years, a proliferation of wise interventions has addressed countless social and personal problems. Many of these interventions have outstanding results because they tend to be very short in time and produce lasting changes in people's behavior. Thus, some wise interventions have been shown to improve academic performance (Brisson et al., 2017), social integration of young people from ethnic minorities (Brannon & Walton, 2013), and reduce depression (Miu & Yeager, 2015) and aggressive behavior (Calvete et al., 2018; Fernández-González et al., 2018).

Wise interventions do not address a lack of capacity or risky behaviors directly. Instead, they assume that, for most people and situations, there is a significant margin for improvement, that people can modify their behavior and that situations offer opportunities, which are often not exploited by people. This type of intervention is of great interest in adolescence, as they can be designed so they are perceived as respectful towards the students' autonomy and status, so that the students will realize that they make their own decisions (Yeager et al., 2018). In fact, the results obtained with these types of interventions in adolescent behaviors are hugely promising. For example, Yeager and collaborators (Miu & Yeager, 2015; Yeager, Trzesniewski et al., 2013) designed a universal brief intervention aimed at changing implicit beliefs about adolescent personality. Specifically, the intervention focused on teaching that personality can change. The key elements of the intervention were as follows: (a) the students' active role, which facilitates deeper processing of the message; (b) the intervention is not presented to the students to change their behavior; in this way, the students do not feel that they are being manipulated, which reduces their resistance to the intervention; (c) the intervention has long-term effects due to recursive processes that influence the effects that accumulate over time. Students generally forget the message and details of the intervention, but this recursive nature triggers other social, psychological, and cognitive mechanisms over time.

These types of interventions have been shown to reduce symptoms of anxiety and depression in young people (e.g. Miu & Yeager, 2015; Schleider & Weisz, 2018; Yeager et al., 2014) and peer-to-peer bullying behavior (Yeager, Miu et al., 2013).

GOALS AND HYPOTHESES OF THE STUDY

Previous findings suggest that wise interventions could be used to improve the behavior of adolescents and young people in the digital society, such that prosocial behaviors of empathy and support are increased and improved, and risky behaviors on the internet are reduced. The main objective of this project is to design and evaluate the effectiveness of a wise intervention aimed at online behaviors in adolescents and young people. Secondary objectives are (1) to assess the moderating role of gender and the degree of evolutionary development of adolescents and young people, and (2) to evaluate potential mediating mechanisms for the effectiveness of the interventions.

The main hypothesis is that a wise intervention will reduce the frequency of negative social behaviors (bullying, grooming, sexting) in the digital society. Given the high reciprocity between victimization and perpetration of risky behaviors, it is also expected that the intervention will reduce this reciprocity. That is, the young people who receive the intervention will react to a lesser extent with risky behaviors when they are victimized.

Regarding the role of the developmental degree, the results of previous studies are inconsistent, with some pointing to greater effectiveness in adolescents than in

children (e.g., Lee et al., 2015) and others pointing in the opposite direction (e.g., Yeager et al., 2018). To provide new empirical evidence to help clarify the findings of previous studies is of great importance for the proper planning of when to implement preventive interventions in the digital society, as previous studies with wise interventions have been conducted mostly in offline contexts. In addition, gender is expected to moderate the effectiveness of the interventions, such that they will be more effective for behaviors that are more prominent in each gender, as meta-analytical studies indicate that, for some psychological problems, preventive interventions are more effective in the most vulnerable groups (Stice et al., 2009).

As for potential mediators, attitudes (e.g., justification of violence, empathy towards the victim, etc.) and intentions towards online risky behaviors are expected to act as mechanisms for change.

METHODOLOGY

Design

A randomized double-blind clinical trial with parallel groups will be conducted. Individual randomization will be performed, so that, at random, half of the participants will be assigned to the wise intervention (Condition 1) and the remaining half to Condition 2 (control anti-stress–educational intervention). Both modalities of intervention will be carried out online through Qualtrics. Participants will be students from 1st grade to 2nd grade of CSE, aged between 11 and 19 years. The final sample will be around 1000 adolescents and young people. Participants will complete an online evaluation protocol through Qualtrics including different questionnaires at three measurement times: (1) pretest (one week before the intervention), (2) posttest (immediately after the intervention), (3) at the 3-month follow-up, and (4) the 6-month follow-up. All studies will be conducted with the approval of the Ethics Committee of the University of Deusto and confidentiality will be guaranteed by anonymity. Informed consent from the parents and adolescents will be required.

Participants

Recruitment will be carried out through schools (including levels from secondary education, high school, vocational training, and university studies). We will invite approximately 1000 adolescents and young people from schools in Spain. The proportion of participants will be balanced according to gender and educational level, as the role of both variables will be examined as potential moderators of the effectiveness of treatment.

Interventions

Two intervention models of similar duration (approximately 1 hour) will be used, such that the wise intervention will be compared to a standard prevention intervention.

1. Wise Intervention: The intervention to be designed to promote prosocial behavior and reduce online risks and will be based on four general types of change strategies: (1) scientific knowledge, (2) generation of new meanings, (3) commitment through action, and (4) active reflection. It includes two components: a self-affirmation activity and an ITP intervention. The SA component includes a list of values so that they could choose the two or three most important for them. Next, they are asked to write why those selected values are the most important to them. The ITP component include activities such as reading scientific information about social behavior and its role in people's well-being, the meaning and value of online risk behaviors through stories and videos of the experiences of other young people of their age, and self-persuasion exercises that involve an active commitment to change.
2. Standard preventive intervention: It will consist of an educational intervention that will provide a number of strategies to manage everyday conflicts among adolescents. This intervention will teach them new ways to manage these difficulties through different actions (relaxation, distraction, sports, etc.). Finally, they are asked to plan the strategies they will use in the future in the face of some difficulties and to recommend some guidelines for another adolescent who may be going through a similar situation.

Measures

The perpetration and victimization of cyberbullying will be evaluated by the **Cyberbullying Questionnaire** (CBQ; Calvete et al., 2010; Gámez-Guadix et al., 2014), which measures the frequency with which adolescents have been victims of or have perpetrated different behaviors associated with cyberbullying. The scale includes 18 items. The psychometric properties of the Spanish version of the CBQ have previously been analyzed in adolescents, and the results showed adequate factorial and convergent validity, in addition to acceptable internal consistency (Calvete et al., 2010).

Online Grooming will be evaluated through the Questionnaire for Online Sexual Solicitation and Interaction of Minors with Adults (Gámez-Guadix, De Santisteban, & Alcázar, 2017). This instrument measures two subscales: sexual requests and interactions that are part of the beginning, process and/or outcome of online grooming. Adolescents and youth are asked to indicate how often they have experienced a certain application or sexual interaction on a 4-point Likert scale: 0 (*never*), 1 (*once or twice*), 2 (*3-5 times*), and 3 (*6 or more times*). This instrument consists of 10 items. The psychometric properties of the questionnaire were analyzed in a previous study, and both scales had good psychometric properties in the Spanish sample of adolescents,

including factorial content, concurrent validity, and reliability (Gámez-Guadix, De Santisteban, & Alcázar, 2017).

Sexting behavior will be evaluated by an adaptation of the questionnaire developed by Gámez-Guadix et al. (2015). The modified questionnaire has 3 items ("Have you sent information, photos, or videos with intimate or sexual content about yourself?") referring to the partner, an acquaintance, and someone you've met online but still do not know in person. A scale with 5 response options is used: 0 (*never*), 1 (*1 or 2 times*), 2 (*3 or 4 times*), 3 (*5 or 6 times*), and 4 (*7 or more times*). The reliability obtained for this modified version is adequate (Machimbarrena et al., 2018).

The **online prosocial behavior** will be evaluated by four adapted items from the Online Prosocial Behavior Scale (OPBS; Erreygers, Vandebosch, Vranjes, Baillien y De Witte, 2017). A scale with 5 response options is used ranging from 1 (*never*) to 5 (*every day*). The internal consistency for this scale is adequate (Erreygers et al., 2018).

Cyber dating abuse will be assessed by a reduced version of the Cyber Dating Abuse Questionnaire (CDAQ; Borrajo et al., 2015) made up of four bidireccional items (perpetration/victimization) that evaluate the frequency with which adolescents have been victims or have perpetrated behaviors related to dating violence. Items are rated on a four-point scale ranging from 0 (*never*) to 3 (*almost always*). This questionnaire will be answered only by the adolescents who have or have had a partner. The results of the psychometric properties of the CDAQ are adequate (Borrajo et al., 2015).

Entity and incremental theories will be evaluated using eight items (Levy, Stroessner, & Dweck, 1998) adapted to the situations of bullying in schools (eg: "bullies and victims are types of people who cannot really change"). Items are rated on a six-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The reliability obtained for this scale in Spanish adolescents is adequate (Cronbach $\alpha = .83$).

Depression will be assessed using the reduced version of the Center for Epidemiological Studies Depression (CES-D; Rueda-Jaimes et al., 2009). This instrument evaluates symptoms of depression through 10 items, with a four-point response scale ranging from 0 (*practically never*) to 3 (*almost all the time*). The items that were validated in a Spanish sample were used (Losada et al., 2012).

Ad hoc measures developed by the research team will be added for the assessment of attitudes towards cyberbullying, attitudes towards different courses of action, and the anticipation of reactions and behaviors when the adolescent is a witness of cyberbullying. This type of scales has been used previously with adolescent samples (DeSmet et al., 2016; Heirman & Walrave, 2012). For the assessment of the **attitude towards cyberbullying**, the participants will classify the following situation of cyberbullying through adjectives using the semantic differential technique with a response range of 7 points: "*I think that sending humiliating messages or photos about someone my age via the internet or mobile is...*". To assess attitudes **towards different courses of action** when the adolescent witnesses cyberbullying, participants will rate four different ways to react to cyberbullying through semantic differential items. Some

examples of situations and items: “*Show support or give some advice to the person they are bullying*”; “*Forward those photos and messages to others*”; Item 1: *Good – Bad*; Item 2: *Easy – Difficult*. The **anticipation of reactions and behaviors** when the adolescent is a witness will be evaluated through seven items on a five-point response scale ranging from 0 (*totally disagree*) to 3 (*totally agree*). Some examples of items are: “*I'd think they must have done something to deserve it*,” “*I'd tell some adult what's going on*”.

Ethical considerations

This study aims to develop and implement interventions that will be beneficial for the participating adolescents and other people in the future, by helping to increase their psychological well-being. Through randomization, the principle of justice will be respected, allowing all participants to have similar opportunities to receive the intervention. Gender will be considered and a similar number of male and female participants will be included in each condition.

The risks are minimal and limited to answering psychological tests on stressors, psychological symptoms, and cognitive styles. Previous experience with the same questionnaires indicates that the risk is minimal. Adolescents can also decide to end their participation at any moment. Researchers collecting data will be trained to attend to any difficulty that could emerge while participants are responding to the questionnaires. The researchers will give an alternative task (e.g., educational readings) to those participants who decide to end their participation.

Informed consent forms will be sent to parents or legal guardians and adolescents will also receive information.

After completing measures, adolescents will be provided with information on services for adolescents (e.g., phone number of attention to adolescents). From an ethical perspective, the most important care aspect is the protection of information. We will follow the Directive 95/46/EC of the European Parliament, *Organic Law 15/99 of 13 December of Personal Data Protection*, and of the Council of 24 October 1995 on the protection of individuals concerning the processing of personal data and the free movement of such data. No identification data, such as names or surnames, will be used; instead, we will use a numeric code to match measures across times and sources. Thus, each adolescent, and only they, will know their code. We will also follow the procedure for data protection that the University of Deusto has registered in the National Data Protection Agency. The project has been approved by the Ethics in Research Committee of the University of Deusto.

Statistical analysis

We will use several statistical analysis strategies, including the Hierarchical Linear Modeling with HLM 7.03 (Raudenbush et al., 2011), using the Full Information Maximum

Likelihood (FIML) estimation method. Level 1 will include repeated measures of dependent variables (cyberbullying, cyber dating abuse, grooming, sexting). Level 2 will include the experimental condition, using dummy variables, together with gender and educational level, as well as the terms of interaction between experimental conditions and those variables. The third level will include the average level of risky behaviors in the participant's classroom. Analyses will also be conducted to determine whether the intervention reduces reciprocity between victimization and perpetration of risky behaviors. The mediation analysis will assess whether the change in the mediators explains some of the effects of the intervention on risky behaviors.

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