



**STUDY  
REPORT**

**SOCIAL MEDIA  
AND MENTAL  
HEALTH OF  
ADOLESCENTS IN  
LATIN AMERICA**



**Dalberg**



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INTRODUCTION  
& **CONTEXT**

## 1.1. Background of Study

Social media has the potential to influence opinion, emotions, or behaviour - intentionally or unintentionally. It is expected that discussions on the effects of social media on core aspects of humanity will increase as these new modes of communication continue to entrench themselves into society. Thus far, such discussions have been based on questions related to the correlation between social media and mental well-being – partly focusing on the effects on identity, individuality, empathy, and public consciousness, amongst other behavioural attributes. The debates are filled with divergent perspectives on the extent to which social media have negative or positive effects on mental health. Some studies show that sustained online connections with small interest groups can be beneficial to adolescents and young people while other studies suggest a rise in symptoms of anxiety, depression, and eating disorders.

There are significant evidence gaps on the extent to which (heavy<sup>1</sup>) social media use relates to mental health, including depression, anxiety, feelings of loneliness and isolation, lower self-esteem, and even suicidal thoughts/tendencies. Such inadequacy of conclusive data on the effects of social media to mental health must be understood within the context of a rapidly changing social media architecture, and with the consideration that there isn't any citable long-term study on the downsides or upsides of social media – to dissuade the educated guesses made by numerous short-term (mostly online) studies and which may not eliminate the respondents' exposure to other catalysts of mental illness. It also needs to be understood that social media and mental health is a developing area of study and consistent evidence patterns are yet to emerge.

This debate on **the association between social media and mental health continues to raise fundamental questions that largely remain unsettled and which are potential subjects of research across a wide range of disciplines**, like media and communications, sociology, philosophy, and neuroscience (amongst others). Subsequently, development agencies and organizations, universities, government and private sector organizations are making efforts to better understand—as well as respond to—the effects of social media on segments of the population. The design of any responses that address such effects should thus be grounded in strong empirical evidence.

## 1.2. Purpose of Study

Previous studies have clarified the subject of social media and mental health and have been helpful in pointing at evidence gaps on which further research can occur. One such gap is the geographic bias of previous investigations considering most of existing research have so far targeted North American or in European settings. The other bias relates to the focus on the various age cohorts with numerous studies targeting the youth (whose very definition is quite ambivalent - varies sharply across different studies). Other topical gaps have been discussed in the literature review section.

In line with the established need to enrich the body of evidence around the subject of social media and mental health, **Unicef (through this study) aims to contribute to the knowledge on the effects of social media on adolescent mental health specifically in the Latin American**

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<sup>1</sup>For the purpose of this study – Heavy users are those that spend more than 4 hours a day on any of the social media platforms

**context.** Considering the growing social media use, **additional evidence would be useful in influencing policy, shaping public discourse, and in the design of programs aimed at reducing the possible negative mental health effects of social media, and strengthening the positive effects**

This report summarizes UNICEF's exploratory engagement with adolescents across three countries—Chile, El Salvador and Jamaica—in which both quantitative and qualitative research was undertaken. Through the quantitative phase over 1,000 adolescents were surveyed in Chile and El Salvador, and in the qualitative phase 30 adolescents were interviewed in the three countries.

Specifically, the research had the following objectives:

- i. Explore the role of social media as a mediating factor, providing skills and tools that reinforce or hinder mental health resilience (positive and negative) as well as its impact on gender relations among adolescents.
- ii. Study the relations between digital behavior and mental health proxy indicators (self-perception, acceptance, sense of integration, social support, etc.) including differences by gender and age (younger and older adolescents), by digital platforms, as well as the translational and cross-over effects of digital and physical realities.
- iii. To further understand gender differences in knowledge, attitudes and practices in adolescent use of social media and its differential impact on mental health in Latin America and the Caribbean (LAC).

The main research question of this study was; **what impact does the use of social media have on the mental health of Latin American adolescents?** A review of existing literature on this subject makes clear that the relationship between adolescence, mental health and social media use is complex, with realities related to personal wellbeing, schooling, geographical location and socioeconomic status—among other factors—potentially mediating each of these relationships to varying degrees.

## **1.3. The global evidence on Social Media and Adolescent Mental Health [Review of Literature]**

### **1.3.1. The Adolescent factor**

Social media has become a platform for self-expression, self-identity and self-disclosure according to some studies (*Bazarova et al, 2014; Orben et al, 2017*). For adolescents, social media plays a fundamental role in discovering new interests, exploring aspects of their identity, and expressing who they are (*RSPH & YHM, 2017*). Also, social media allows adolescents to communicate their personal experiences, what they feel and think - becoming relevant means for self-disclosure.

In Latin America, social media penetration has increased considerably over the last five years, as illustrated in a variety of studies (*eMarketer, 2018; Corporación Latinobarómetro, 2015; We Are Social, 2017*). **Social media penetration in Latin America increased from 67.1% of total internet users to 76.8% between 2013 and 2018, which represents growth from 31.5% of the total population using social media in 2013 to 46% in 2018** (*eMarketer 2018*). The Latino barometro in 2015 found that Facebook use in the region more than doubled from 19% in 2010 to 42% in 2015. It is also noteworthy that although Latin American countries account for 9% of the world's total population, they are the source of approximately 13% of total global social media use. Based on these figures, Latin America is often seen as the home to a social media revolution (*Chao, 2013*).

Regarding the penetration of social media amongst adolescents in Latin America, conservative estimates suggest that adolescents account for between 8% to 15% of social media use as a portion of the region's total population (*We Are Social, 2017*). Facebook data, presented in 2017 *We Are Social* analyses, shows that 8% of Facebook users in Argentina are between the ages of 13-17, which amounts to 2.3 million adolescents. Of these, there is essentially an even split between male and female users (1.1 million and 1.2 million respectively). Similarly, 8% of Facebook users in Brazil fall between the ages of 13-17, in this case translating to approximately 10 million adolescents in total. In Mexico, 10% of social media users are between the ages of 13-17, which amounts to 7.5 million individuals. Use is distributed relatively evenly between male and female adolescents, with the latter holding a slight lead (3.5 million and 4 million respectively). Unfortunately, *We Are Social* does not publish social media use information based on age for all Latin American countries.

**Adolescents are increasingly seen as a key voice in bringing about global social, economic and political change, as well as helping achieve the Sustainable Development Goals.** With more than 1.2 billion adolescents on the planet, investment in this demographic can serve as a strategy for helping bring about progress on individual and systemic levels, particularly in low- and middle-income countries (*Sheehan et al. 2017*). **As one facet of the dialogue on research into adolescence, mental health is gaining traction in the public eye as a major concern facing this population** (*Turkle, 2011; Kapungu & Petroni 2017; Feixa, 2011*). Specifically, **poor mental health is perceived as a barrier to overall health and development, and is associated with outcomes such as premature mortality, increased consumption of alcohol, tobacco, and illicit substances, as well as with increased adolescent pregnancies, suicidal behaviour, school dropout, and violence** (*Ohrnberger et al., 2017; Morgans et al., 2007*) – and in a global space interconnected by internet and social networks, access to unfiltered information and pressure to conform to the 'cool factor' are easier accelerated.

It is clear through a variety of academic studies that Latin America as a region has among the highest social media penetration rates in the world, as well as significant year-to-year percentage growth in social media users (*sadaba et al, 2016*). However, a considerable portion of the data, and this is particularly true of information pertaining to adolescents, is found in non-academic/grey literature.

The existing lack of rigour in statistical analyses on studies pertaining to adolescent social media use, as well as nuance in the presentation of findings, diminishes the quality of information available to the public. As such, **researchers must do their best in their review of the Latin American social media landscape, selecting carefully amongst the available public**

**statistics. More research on adolescent social media use in Latin America through public and non-profit sources would significantly enhance the dialogue in this subject area.**

Further, within the conversation on adolescents and mental health, the dimension of social media usage has gathered considerable public interest in recent years and has since become the source of intense and persistent debate. As such, **it is not surprising that some view social media use among adolescents as a contributor to positive mental health - providing users with life opportunities which previously did not exist in a pre-internet age, whereas others see this mainly as a contributor to anxiety, depression and diminishment in the quality of relationships.**

### **1.3.2. Social Media Usage and Mental Health**

The growing body of research pertaining to the association between mental health and social media highlights its complexities. In investigating the complexity of this relationship, there is need to address three core domains; First, the *definitions* of mental health - contemporary definitions usually focusing too narrowly on positivity. Second, the nature and overlaps between offline and online forms of identity formation involving social media. And third, the conflicting evidence on whether social media use improves mental health or whether it exacerbates pre-existing issues related to anxiety, depression and self-esteem. **It remains unclear as to whether social media contributes to depression, anxiety and other psychosocial problems amongst adolescents, or whether it exacerbates these issues for adolescents already predisposed to them.**

In the paper “Toward a new dimension of mental health”, the authors propose a definition of mental health that incorporates both positive and negative functionings. The authors begin with the World Health Organization’s **definition of mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”** (Galderisi et al., 2015). However, according to the authors, this definition lends itself to potential misunderstandings – which is, too much identification with “positive feelings and positive functionings”. Thus, they attempt to develop a more “inclusive” definition, one that allows for “imperfect functioning”. Their new definition of mental health emphasizes “internal equilibrium.” That is, the reality that mentally healthy people will sometimes experience fear, sadness, and so forth. Paramount in the authors’ definition is that mental health should allow for mild impairment as well as time and space for recovery. Given the modern focus on positivity as an indicator of mental health, this paper suggests that it is in fact possible to experience ups and downs and simultaneously retain one’s mental health.

**A key implication in this research is that pre-existing mental health states may affect individuals’ use of social media, as well as the consequences of this use.** Adolescents with low self-esteem may post on social media with a higher proportion of negative content, this content then affecting perceived homophily between individuals and in turn impacting interpretations of self-disclosure and subsequently self esteem. **Adolescents that demonstrate low-esteem and exhibit symptoms of anxiety and depression in their offline lives may have difficulty finding support in their online lives. Conversely, adolescents with higher self-esteem in their offline lives may benefit from the embraces they receive in self-disclosure**

**activities in their online lives** (Orben et al, 2017). This seems to align with the finding that that “While more research is necessary to confirm and better understand these associations, it may not be too soon to suggest that individuals with depressive and/or anxiety symptoms, and who use a high number of different social media platforms may wish to decrease the number of platforms used, especially given the strength of the associations we found” (Primack et al, 2017).

This is not to say that increased social media is not without its benefits; social media use may in fact contribute to the development of social capital and acquisition of social support (Ellison et al., 2007, Keitzmann et al., 2011). Indeed, an earlier study into this topic found that **“Most adolescents (78%) always or predominantly received positive feedback on their profiles. For these adolescents, the use of friend networking sites may be an effective vehicle for enhancing their self-esteem”** (Valkenburg et al, 2006). The adolescents whose profiles receive primarily negative feedback experienced decreases in self-esteem. Social media usage in this case is believed to mediate between adolescent self-esteem and well-being.

Indeed, much of the existing literature on **the relationship between social media usage and mental health amongst adolescents suggests that the direction of influence between variables is unclear, but that the pre-existing mental health of the adolescent and the level of use should be taken into consideration as a potential mediator between variables.** In a review of existing literature pertaining to adolescent usage of social media and its effects on mental health, Richards et al. conclude that “the key determinant of its [social media’s] effect is the nature of the young person” (Richards et al. 2015). They suggest that adolescents with sophisticated online personas, and who spend considerable amounts of time online, face greater risks to their mental health. The rationale provided is that **“For some, their digital or online self is an extension of the actual self, and not surprisingly, positive or negative feedback on the young person’s social networking site affects their self-esteem”** (Ibid, 1155).

Moreover, in a comprehensive review of research pertaining to social media usage and psychosocial development amongst transitional youth, Primack notes that “People with different personality characteristics might have substantially different experiences with SM [social media] as it relates to mental disorders. For example, personality characteristics, such as extraversion, neuroticism, and openness, have been associated with increased online communication and SM use” (Primack and Escobar-Viera 2017). **The psychosocial transitions which adolescents experience may influence the consequences of online activities, and so there remains a need for future research which “examine[s] directionality of these associations and the role of contextual factors, such as style of Social Media use, personality, and the use of multiple platforms”**

### 1.3.3. Cyberbullying and Sexting

Cyberbullying is defined as **“an aggressive, intentional, and repeated act, that is produced by an individual of the same age group that exerts his/her power over a victim that cannot easily defend her/himself through an electronic medium featuring social technology tools such as instant messaging, email, texting, and social network sites”** (Weber et al, 2014). With the increasing use of digital technologies and social media by adolescents, cyberbullying is an online risk considered common (O’Keeffe et al 2011; McBride, 2011). Cyberbullying has

been related by some authors with depression, anxiety, isolation and other negative psychosocial outcomes (Bottino et al, 2015).

Regarding gender differences linked to cyberbullying, **the evidence on the engagement in cyberbullying is varied, showing that both boys and girls can be equally victims or perpetrators** (Weber et al, 2014). In their study, these authors find an interesting contradiction between the quantitative and qualitative results. While the surveys show that boys are “more likely to engage in cyberbullying activity as both perpetrators and victims”, the qualitative results point in a different direction “with students indicating that the focus of cyberbullying was most often about females, except in the case of males who had their sexual identity questioned”

In a different study, the investigation into the gender differences in cyberbullying indicated that girls are using cyberbullying above other forms of bullying and, are especially vulnerable to this type of experience. According to the author there are some relevant factors to be considered when studying cruelty among girl. Such factors include; a) girls show less empathy and are more disinhibited in online contexts, b) since comments, photos, videos or information are made public girls feel that they have been humiliated to a greater extent, and c) girls feel that the identity that they have built and expressed through social media is at risk to be destroyed (Sokal, 2012).

The term sexting embraces the exchange of images or text messages that include any sort of nude or sexually suggestive content through mobile devices or the internet in general (Ringrose et al, 2012). Some of the key evidence that exist on sexting indicate that; **First, in the case of sexting and image-based abuse the threat comes from peers and people they trust, rather than strangers. Second, sexting and image-based abuse are coercive practices closely linked to cyberbullying and harassment. And finally, that girls are most negatively affected by this issue and are more prone to be judged and labelled, while boys can brag about their sexual experiences.** There is considerable evidence of the double standard, by which sexually active boys are to be admired and ‘rated’, while sexually active girls are denigrated and despised” (Ringrose et al, 2012).

#### 1.3.4. The Gender Dimension

A significant and growing body of research focuses on the relationship between social media usage and mental health; however, gender-related dimensions in this relationship are, surprisingly, only a relatively recent area of investigation. As such, this review highlights notable studies in this area in order to provide a sense of the key findings, research trajectories and potential impacts on public policy.

In trying to understand the gender dimensions, it is important to consider the socio-cultural context that influences the gender socialization process, because it is through such processes that adolescents internalize gender norms and roles - by constantly interacting with their peers, family and their social networks in general (John eta al, 2017). Global media such as the internet has acquired a fundamental role in the delivery of information on the normative and alternative gender roles, behaviors, and stereotypes, that adolescents receive. Gender differences in adolescents’ interaction with the social media environment are explored below.

## Gender and the Benefits of Social Media

**Current evidence in adolescents' digital technology usage suggests that a moderate amount of time spent online could have positive implications on mental health, while a very low or very high usage could represent negative impacts** (Kardefelt-Winther, 2017). Relevant social relationships and support can be strengthened and enhanced by the usage of digital technology (Livingstone et al, 2017). Not only those who already have established a network benefit from this, but also “those who have less social capital at the outset may use it to compensate for this and build positive relationships” No gender differences are highlighted in the previous studies, with both boys and girls accessing social support online when needed.

However, other studies found that girls tend to give in more easily to the pressure of socializing online, accepting strangers' friend requests and checking social media updates more frequently than boys (Martin et al, 2018). In relation to this, girls equally feel more pressure to develop and maintain a social media presence than boys. Social media presence requires constant updating and having friends share or like their content. If their perceived popularity decreases over time, there may also be an increase in social and emotional difficulties” (Booker, 2018).

Some studies show that there are gender differences in the way in which adolescents present themselves in social media platforms (Döring et al, 2016; Zheng et al, 2016; Oberst, 2016). For example, selfies shared in Instagram denote traditional gender stereotypes and could be more stereotypical than magazine adverts. Thus, gender stereotypes such as seduction/sexualisation (through expressions like the *kissing pout*) are more common in young women, while stereotypes such as showing strength (through *muscle presentation*) are more common in young men (Döring et al, 2016). In line with this, a study also found out that women share photos with the motivation of “sharing a special moment”, while men share photos with the motivation of “showing themselves having fun” (Zheng et al, 2016). However, other studies have identified a trend in adolescents towards a less stereotypical way to present themselves in social media. This could be influenced by the change in society's gender stereotypes and a possible trend toward self-identification with androgynous styles (Oberst et al, 2016).

## Gender Differences in the Negative Impacts of Social Media on Mental Health

Although both female and male adolescents can experience mental health conditions such as depression and anxiety, gender differences have been identified as an important lens for analysis. **Depression and anxiety are more common among girls, with girls as young as 13 exhibiting more depression symptoms than boys** (Sherr, 2018). At age 14, “24% of girls and 9% of boys were suffering from high symptoms of depression” (Patalay, 2014). Also, female adolescents tend to experience to a greater extent mood symptom, self-injurious habits and eating disorders. On the other hand, male adolescents tend to experience more behavioural disorders that include aggressive behaviours and alcohol misuse. In the analysis of these mental health conditions it is important to consider a wide and complex variety of factors corresponding to the social, cultural and economic context, as well as family and peer relationships (Sherr, 2018).

Nesi & Prinstein (2015) find that female adolescents show a stronger association between Social Comparison and Feedback Seeking (SCFS) and depressive symptoms. The authors suggest that this could be linked to the importance that girls give to physical attractiveness, and higher

tendency to share photos and compare themselves with others online, which increases interpersonal stressors (Nesi et al, 2015). Other findings suggest that boys are giving increasing importance to sexual appeal, appearance and body surveillance based on their Facebook usage. However, in this same study **girls show a stronger relation between Facebook usage and self-objectification**. The authors mention that this could be **due to the way in which girls are subjected to greater expectations in terms of their appearance in society and in offline interactions, as well as to a greater exposure to idealized appearance norms in social media** (Trekels et al, 2018).

In one study, authors Marengo et al. (2018) investigate “Highly-visual social media” (HVSM) in adolescents and find that frequency of usage is related to body image issues. Of note, “Being female showed a positive correlation with the amount of time participants spent on HVSM, and reported body image concerns, and internalizing symptoms.” Moreover, the authors believe the “The study has practical implications for the development of interventions aimed at preventing or reducing the negative impact of social media on adolescent health... [which should] aim at promoting... potential impact that exposure to these kinds of images can have on adolescents’ body image, and consequently on their psychological well-being” (Marengo, et al, 2018).

Furthermore, in the study “NetGirls: The Internet, Facebook, and body image concern in adolescent girls”, Tiggermann and Slater survey 1,087 girls across 18 South Australian high schools and find that that gender plays a role in the portrayal of online selves. In this study, the authors find that “As predicted, Internet exposure was associated with internalization of the thin ideal, body surveillance, and drive for thinness in this sample of adolescent girls” (Tiggermann et al, 2013). In particular, the authors highlight Facebook for the “speed and ease with which girls can connect with their peers... provid[ing] the opportunity for ready and multiple social comparisons...” (Ibid, p. 632). In a different study, Tiggermann and Slater explore the role of self-objectification in young female adolescents, finding that social media platforms increase the constant monitoring of physical appearance in girls. Self-objectification is associated with body shame, dieting and depressive symptoms (Tiggermann et al, 2015).

The last ten years have brought a significant increase in mental health issues amongst girls, this coinciding with major strides in access to social media. The few studies focused on early adolescence in these topic areas suggest that girls experience comparatively greater decreases in wellbeing measures than boys, as they spend more time on social media. Moreover, it is possible that girls that spend greater amounts of time on social media in their early adolescence will experience comparatively more profound mental health issues in their later adolescence. Among the specific areas of wellbeing most carefully studied thus far is that of body image—and it is apparent across several studies that the internalization of thinness as a desired body image can lead to negative usage of social media as far as mental health is concerned.

### 1.3.5. Availability and Veracity of Data on Social Media and Mental Health in Adolescents

Adolescents tend to be at the margins of global data collection systems (Azzopardi *et al.*, 2017). Of the surveys and other data collection tools distributed to adolescents, these tend to reach adolescents currently *in school* - which ignores out of school adolescents. A related challenge is that adolescents do not usually serve as important stakeholders in research related to their mental health. **The relative absence of comprehensive data collection systems and research means that in most countries there is insufficient understanding of adolescent health and well-being, and inadequate local research to fully inform programme and policy responses...** (Reavley 2017). There is thus the need for a broader range of *settings* for adolescent research, research taking place not only in schools but also in community and education settings, as necessary. Given a shift from “high birth and death rates to lower fertility, lower mortality and longer life expectance,” societies and their governments must grapple with the reality of the “survival into adolescence of the largest cohort of adolescents and young adults that the world has ever seen” (*Ibid*). This only heightens the significance of engaging adolescents in research pertaining to them.

Taking into consideration the multiple challenges which adolescents face, researchers argue that this cohort should be given higher priority in national and international policy. Specifically, the failure to acquire vital capabilities during adolescence often leads to significant adverse effects for adolescents over the life-course (Sheehan *et al.* 2017). Focusing in particular on low-income and middle-income countries, they find that large economic and social benefits occur through intervention in “physical, mental, and sexual health; secondary schooling; child marriage; violence against women; and road traffic injury” (*Ibid*). However, **adolescent-related interventions receive less emphasis in public policy than interventions focused on early childhood**. The authors find that “The discounted total cost to 2030 of all the [adolescence] interventions studied, except those for education and child marriage, would be \$414.8 billion (\$27.7 billion per year)” (*Ibid*). Interventions would be especially beneficial for adolescent girls, who are disproportionately affected by the five factors outlined above.



**APPROACH &  
METHODOLOGY**

## 2.1. The Approach

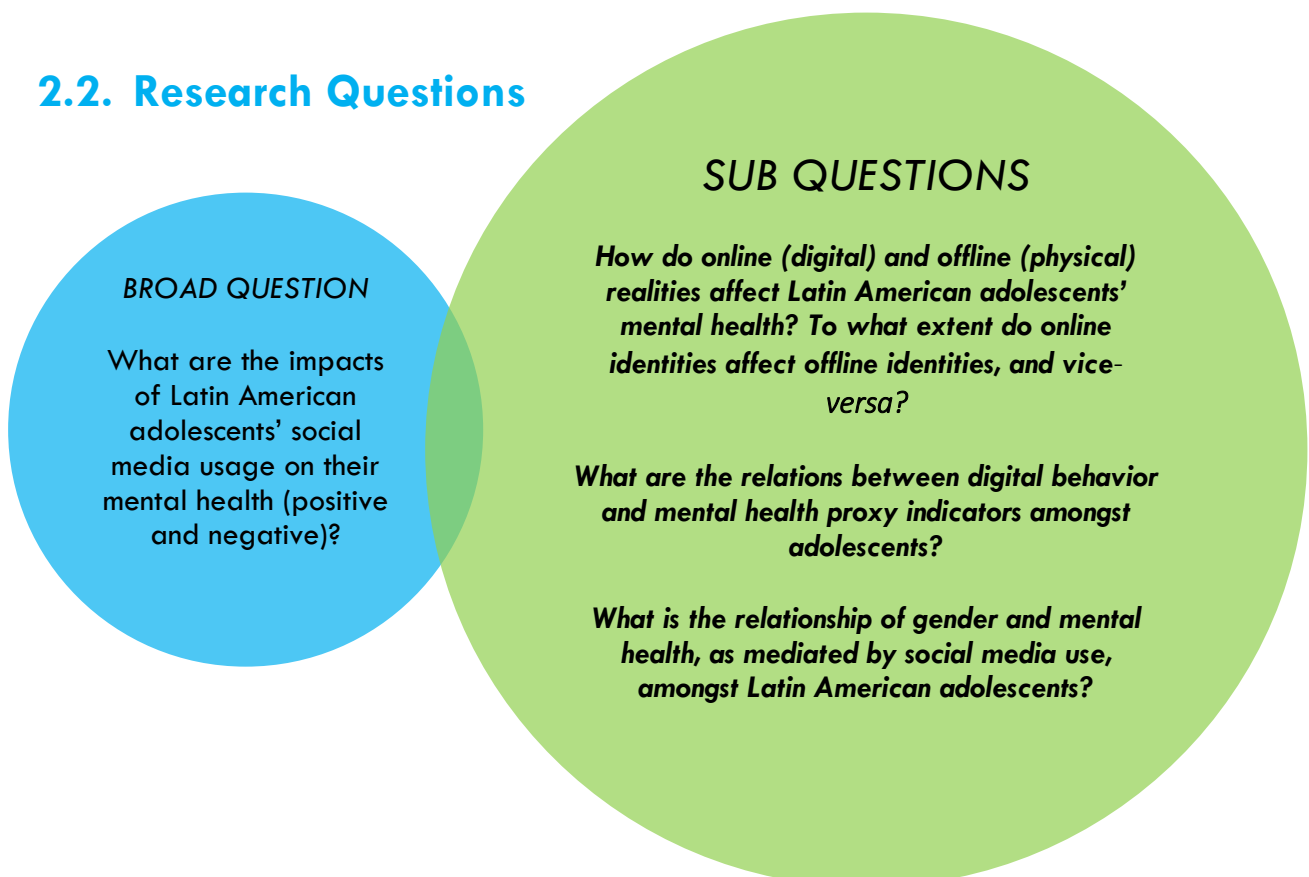
**The main purpose of this study was to achieve a better understanding of the impacts of social media use on the mental health of adolescents in Latin America.** In order to meet this purpose, a mixed methods approach was used. An online survey and semi-structured online interviews were conducted with adolescents from Chile, Jamaica and El Salvador during the months of June, July and August, 2018. The main objective of this methodology was to explore and describe the interactions between social media and mental health, and identify differences between gender, age and region.

The research objectives were:

- i. Explore the role of social media as a mediating factor, providing skills and tools that reinforce or hinder mental health resilience (positive and negative) as well as its impact on gender relations among adolescents.
- ii. Study the relations between digital behavior and mental health proxy indicators (self-perception, acceptance, sense of integration, social support, etc.) including differences by gender and age (younger and older adolescents), by digital platforms, as well as the translational and cross-over effects of digital and physical realities.
- iii. To further understand gender differences in knowledge, attitudes and practices in adolescent use of social media and its differential impact on mental health in Latin America and the Caribbean (LAC).

UNICEF has undertaken several large and significant research studies, the methodologies and findings of which were taken into account in the design of the study. The Global Kids Online projects cumulatively served as a starting point for this research. **The GKO qualitative and quantitative tools and method guides were useful frameworks for the study.**

## 2.2. Research Questions



## 2.3. Hypotheses

- Adolescents with comparatively worse pre-existing mental health, lower sense of well-being and less life satisfaction (as per Cantril Ladder measurements) will experience more negative subjective mental health outcomes as mediated through their social media use.
- Adolescents with comparatively fewer cultural, socioeconomic and familial supports (as per demographic measurements and *school, friends, family and context* questions) will experience worse negative subjective mental health outcomes as mediated through their social media use.
- The mental health outcomes as mediated through social media will be more negative amongst female adolescents than male adolescents in the Latin American countries studied.

## 2.4. Countries selected for this study

The **countries were selected based on the availability of comparable, pre-existing research; diversity considerations, and interest from existing ground resources.** In the end, Chile, Jamaica and El Salvador were selected as subject countries for the study. Chile, Jamaica and El Salvador's UNICEF country offices showed interest in this study and stated their willingness to participate.

Several studies on social media use amongst Latin American adolescents (or young adults) involve Chile, among which UNICEF's Global Kids Online research stands out. This international research project had a final sample size in Chile of approximately 1000 adolescents ages 9 to 17, and some of its qualitative and quantitative tools served as a base for the present study.

Regarding the issue of mental health, in past years, Jamaica has made important strides in providing mental health services for adolescents. Also, in El Salvador, a growing body of research exists around its adolescent mental health. However, in these three countries, the body of research around mental health and social media usage in adolescents is not strong.

## 2.5. The Survey

An online survey about social media use and mental health was conducted using the SurveyGizmo platform (please refer to the Survey questionnaires in Spanish and English in the Appendices section). This survey collected non-identifiable data from 844 adolescents between the ages of 11 and 19, living in El Salvador, and Chile.

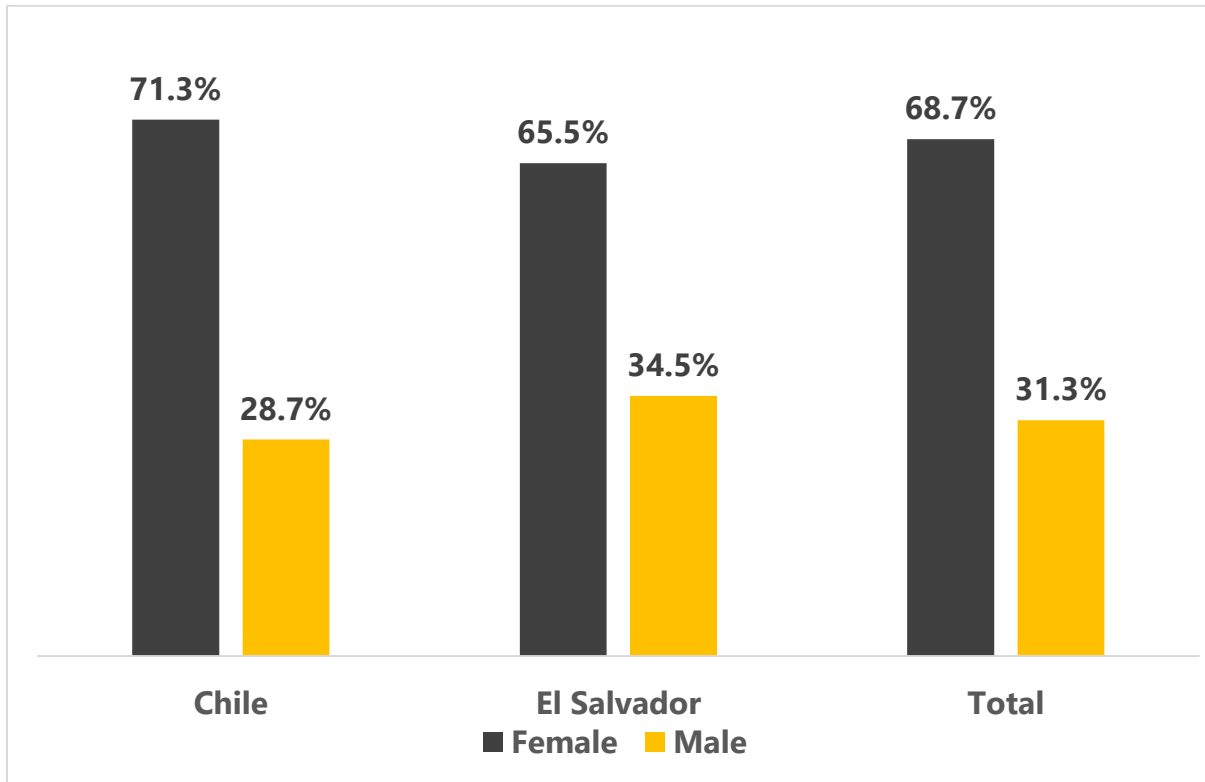
### 2.5.1. Sampling Procedure

The highly stratified sample relied on Facebook advertisement outreach. The article "Quota Sampling Using Facebook Advertisements Can Generate Nationally Representative Opinion Estimates" provided useful advice on Facebook sampling. Facebook's marketing tools were employed to specify a few hundred strata that were set according to the demographic

characteristics of each target country (e.g. gender, age, race, education, region, etc.) as outlined by Zhang et. al (2017). Facebook adverts were run targeting each strata until each strata had generated its quota of responses proportional to the sample size and its share of the population.

The **final sample size was N=844 across Chile and El Salvador** with the distribution of respondents across gender being as indicated in the graph below;

**Graph 1: Gender by Country**



Regarding the age bands, the respondents were distributed across the target age groups as indicated in the table below;

*Table: Age of Respondents;*

Country	11-16 years		17-19 years		Total	
	Count	Row %	Count	Row %	Count	Row %
Chile	392	59.1%	271	40.9%	663	100.0%
El Salvador	218	40.9%	315	59.1%	533	100.0%
Total	610	51.0%	586	49.0%	1196	100.0%

## 2.6. Interviews

In addition to the quantitative survey Thirty (30 semi-structured interviews were conducted with adolescents between 11 and 19 years of age in Chile (10 interviews), El Salvador (10 interviews), and Jamaica (10 interviews). The Global Kids Online Individual interview topic guide and other GKO qualitative tools (UNICEF, LSE & EU Kids Online, 2016) served as important inputs into the interview preparation.

The interviews took place over Zoom, Skype, Google Hangouts, WhatsApp or similar platforms and lasted between 30 and 60 minutes. These were conducted by trained interviewers (with academic backgrounds in adolescent research) in English or Spanish, depending on the given interviewee's native language.

## 2.7. Analysis

**Quantitative analysis** of the survey compared the behavioral questions with the mental health and well being questions using ordered logistic regression and crosstabulation. Baseline characteristics of the sample population related to social media use and mental health were also established. All quantitative analysis were completed using the R programming language for statistical computing.

Specifically, descriptive and inferential statistics were used in the analysis. Most of the variables were summarized using proportions (in percentages) and then presented in plots and tables. Comparison of categorical variables were done using Chi-square for 2x2 tables and Kruskal Wallis for other tables.

Mixed effect logistic regression models (MELRMs) were used to determine the relationship between outcome variables and various explanatory variables. MELRMs was used because the data was collected from two different countries, and therefore, the assumption is that the respondents in one country are more homogeneous, compared to the respondents from another country. Consequently, these models used the country variable as the random effect variable. The results from the analyses were presented in tables that contains odds ratio, confidence intervals and p-values (indicates the significance of the predictors).

**Qualitative interviews** were fully transcribed, with analyses taking place focusing on the project's guiding research questions. Interviewers compiled notes throughout the interview process, with these notes sitting alongside the formal analyses. The formal analyses made note of key themes emerging from the interviews, and were refined through discussion between the researchers. In the analyses, the researchers did not subscribe to any particular framework that considers social media use to be either positive or negative for adolescent mental health; in the analyses researchers aimed instead to uncover the advantages and disadvantages in social media use.

## 2.8. Limitations

Sampling taking place primarily through social media required wide distribution in order to address the likelihood of a low response rate. Stratified sampling through Facebook particularly narrowed the sample of adolescents in this study, for we only studied adolescents that use Facebook. Thus, a key limitation is that our sampling is representative of the population of adolescent *Facebook* users in each of the two countries in which the survey was conducted.

Qualitative interviews also intended to help overcome the challenges in interpreting the direction of influence between variables in this study (indicators of mental health and of positive and negative instances of social media use). The sample size of  $N=844$ , even if reflective of sample sizes in academic studies so far undertaken on similar topic areas in Latin America, limit generalizability across the Latin American region. Self-reporting could lead to some participants' responses being affected by social desirability.

A close-up photograph of a person's hands holding a white smartphone. The person is wearing several rings on their fingers. The image has a dark, blue-tinted background. A large teal circle is overlaid on the lower half of the image, containing the text 'THE FINDINGS' in white, bold, uppercase letters.

**THE  
FINDINGS**

This section discusses the findings from quantitative and qualitative data gathered but equally makes references to insights from literature review to emphasize the interpretations of evidence;

## 3.1. General Perceptions on the Social Media Platforms

### 3.1.1. The Platforms

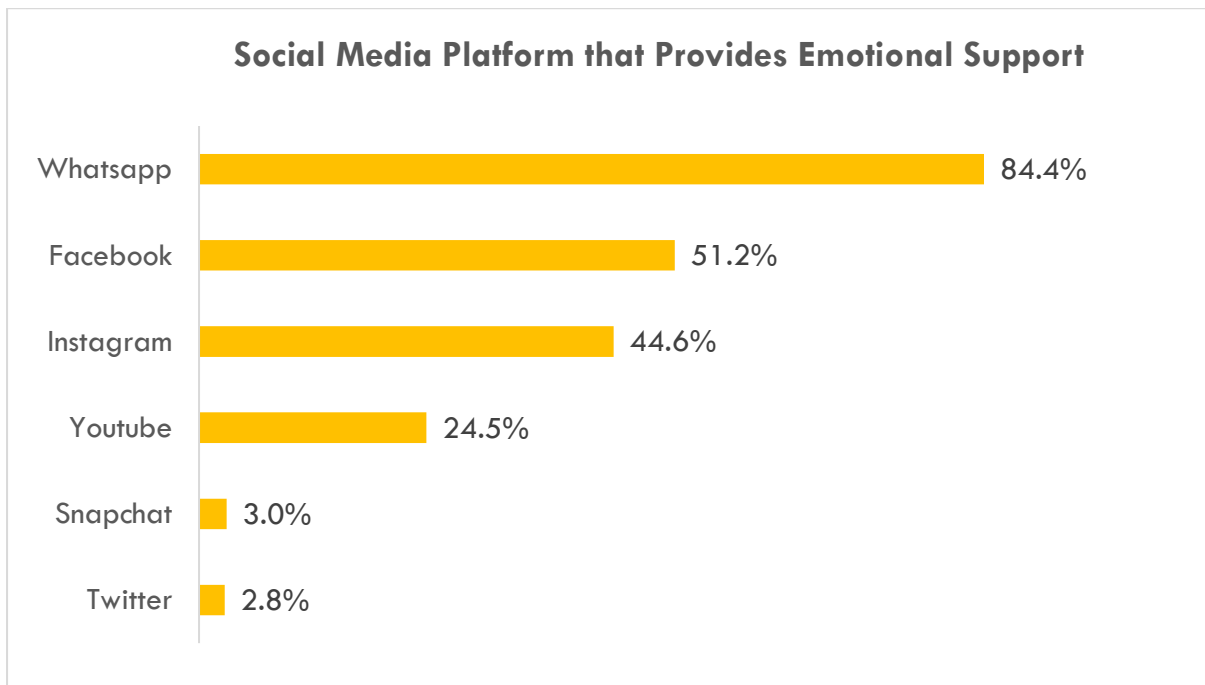
The study found that up to 42.6% of the respondents spend more than 4 hours daily on social media (heavy usage), while 26.1.% spent between 2 and 4 hours daily. Of the heavy users, girls accounted for 46.3% while boys accounted for 34.7%. Adolescents are increasingly using social media within their daily routines. The habit of using their phones rather than interacting directly with others is perceived as common. However, some still highly value other activities that are part of their real lives such as studying, hobbies and spending time with family and friends. For example, the majority of respondents (about 33%) spent 1-2 hours of the day doing homework, 23.8% spent between 2 and 4 hours, and 19.8% spent more than 4 hours.

That said, the respondents mentioned Facebook, Instagram and WhatsApp as the most popular social media platforms – yet others mentioned youtube and Twitter.

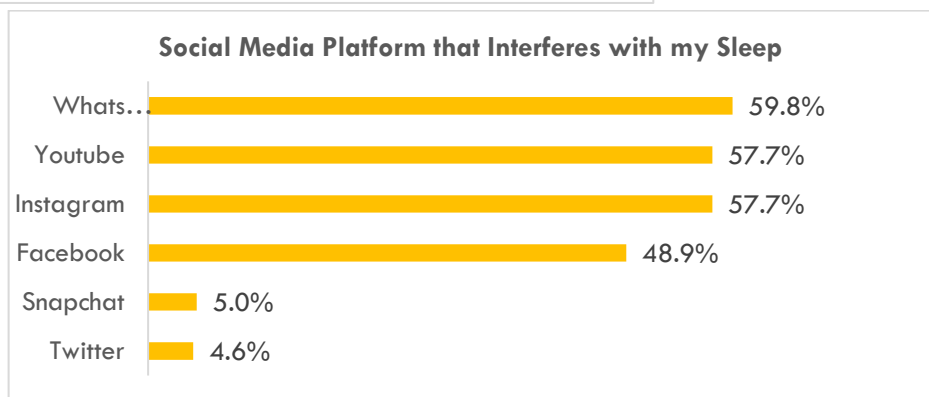
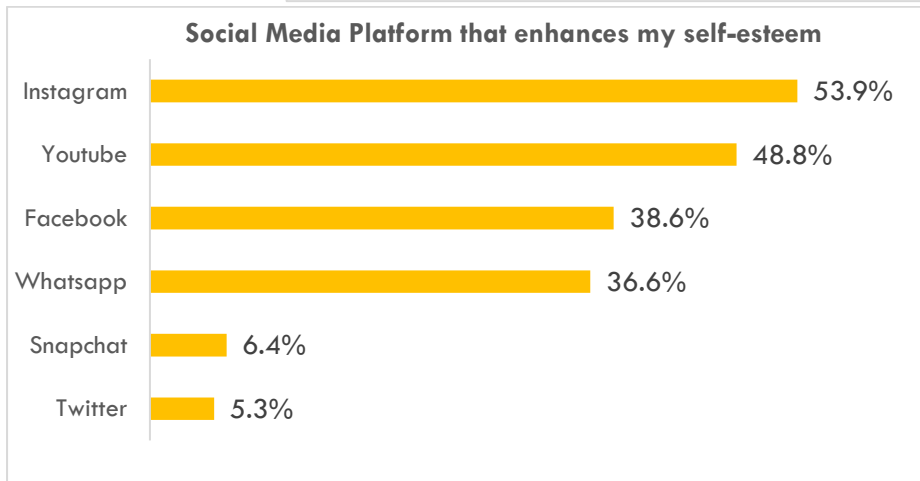
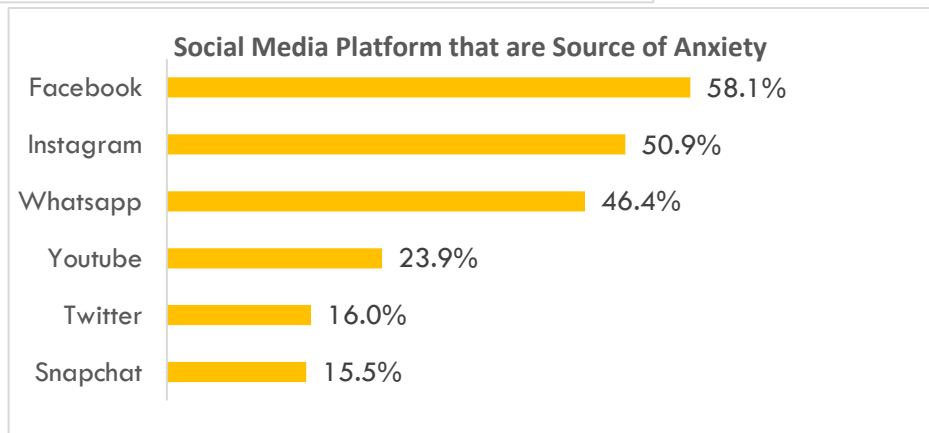
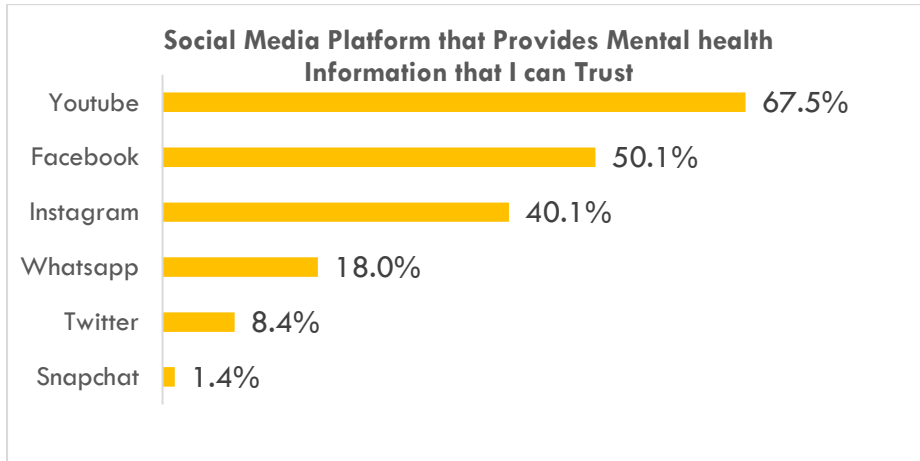
- **Facebook:** Is recognized as the most known social media platform, and almost all participants have an active Facebook account. It offers more content possibilities vs. Instagram. In Facebook, it is easier to follow and post news and other contents; however, some adolescents find it boring and dense. *"I also use Facebook but just because all my friends have it, and it's what most people use to be connected with others"; "Too much content"; "My parents allow me to have a Facebook profile but I found it so boring that I abandoned it. It was the same as Instagram but I found it more serious."*
- **Instagram:** Is the most attractive and trendy social network for participants. Contents are predominantly photos, short videos, and selfies. Instagram stories have gained importance as a way of expressing current states, activities and feelings. Since these stories go away in 24 hours, these have become one of the drivers to stay connected. *"People from 14 to 20 use more Instagram because, I don't know, it's where the boom is going on since everyone likes stories."*
- **WhatsApp:** It is one of the social media platforms used with most frequency to stay in contact and interact with friends and family. It is used to organize events and meetings with friends, comment on school related topics and homework, chat, share memes, jokes, videos, photos, and other contents. *"Almost all of us use WhatsApp to talk about homework, classes or any subject that we talked about at school."*
- **YouTube:** Some participants use it to get informed and learn more about specific topics of interest (i.e. animals, science, cooking, crafts, etc.). Interviewees consider that this social media platform could have high credibility depending on the channel or person who posted the contents.

- **Twitter:** One of the less used. Adolescents who mentioned it used it to follow celebrities, bands, and news. *“I have a profile in Twitter but I only use it to follow a band that I like a lot. The band I’m following is a Korean band called BTS.”*
- **Other platforms:**
  - *Musical.ly: a social media platform to create and share short music videos.*
  - *Amino: social media platform to find like-minded people and join groups based on common interests.*
  - *Pinterest: Used especially by girls, it provides inspiration for fashion, cooking and crafts.*

When asked for their perspectives on the social media platform that provides emotional support, **up to 84.4.% of the respondents reported that Whatsapp provides them with emotional support.** The responses on the other platforms are as distributed in the graph below;



It is probable that Whatsapp scores higher based on the fact that users have better control of those they interact with. It is also possible that this is representative of the popularity of this social media platform for chatting and sharing personal information. Twitter, for example, is known to be least popular amongst adolescents, which in part explains the trend depicted in the analysis. Further, the study established that different social media platforms are used for varied reasons and the graphs below summarise the experience of the respondents on the various platforms;



The graphs above are useful in establishing an understanding of the various media platforms and would be important to keep such understanding in mind in the discussions that will follow on mental health, on/offline experiences and gender differences.

### 3.1.2. The Content

- **Memes and funny videos:** During the qualitative interviews, Memes and fun videos were recognized as the most popular content shared and followed by the adolescents. The drivers are mainly related to: keeping up with the latest trending topic, causing positive reactions in their friends, being considered a fun person, and gaining recognition through likes and shares. As one respondent indicated, *"I share memes. These are constantly updating depending on what is happening in the world... the memes I share are usually funny and my friends laugh a lot."* However, **there were significant differences in the proportion of adolescents who posted videos and those that just used the platforms to watch what has been uploaded by others.** 32.6% of the female adolescents watched videos compared to 11.3% who actually posted videos. In the same manner, 27.9% of the boys watched videos and photos compared to only 4.7% who posted/uploaded content.

Some respondents share videos or memes about the jokes they make to their peers. Even though they consider these harmless, sometimes they don't have permission from the person in the video before they share. *"Every time I see something funny or we make a joke to a classmate, we record it and share it. We don't do it to be cruel or mean, just to get attention, just for that."*

- **Stories about their daily activities and states:** 38.1% of females and 32% of males interviewed reported to use social media very often to chat with friends and share updates on daily social occurrences. *Stories* option in Instagram and Facebook has become a common way of expressing thoughts, activities and feelings. This alternative has allowed them to share common activities of their daily lives. *"On Instagram you share your daily activities and what you are doing with the Stories."*
- **Photos:** Most participants mentioned that they share photos of themselves whether it is selfies or in a group. However, some state that instead of sharing photos of themselves, they prefer to share photos of pets, natural landscapes, places of interest, or food. Some of them mention the reason for limiting the photos they share of themselves being the fear of losing their privacy or not being satisfied with their body image. *"I share photos of my face, or photos to show the clothes I wear and the way I look, or photos with animals because I love animals."* About 32.6% of the female respondents reported using social media for sharing photos very often compared to 27.9% reported by the male adolescents.
- **Music:** Some of the interviewees use specific songs to express ideas and emotional states, as well as to catch the attention of the person they like. For many, music has

proven to be an effective way to get the feedback they expect. *“I share songs hoping that people like them. It’s a way of sharing my opinion.”*

- **Videos about topics of interest:** Participants also share their interests and the causes they care about through videos. Various topics are mentioned in the interviews: food and cooking, animals, science, environmental issues, among others. *“I’m a person who thinks that we should take care of the environment, so I always share videos of recycling... I am also a vegetarian so I like to upload many videos that inspire others to protect animals.”*

## 3.2. Role of Social Media in Reinforcing Mental Health [Study Objective 1]

**KEY FINDING: A large majority (76.7%) of adolescents in both countries use social media as a source of emotional support and to find out more about mental health.**

The study sought to investigate the role of social media as a facilitating factor, providing skills and tools that hinder or reinforce mental health resilience (positive and negative).

During interviews, **respondents felt that social media has always been present in their lives and plays a fundamental role in the communication established with peers and family - and serves as their major source of information.** The study reaffirmed that social media has since become an integral part of the lives of an adolescent living in Latin America (as do most of the world). Most interviewees had profiles in social media platforms since they were 10 or 11 years old, while others had created social media profiles from as early as 5 or 6 years old. As one of the respondents mentioned; - *“I have had Facebook since I was 5 years old or so. I was an “illegal”; since I was a kid I started using the computer. There is not a strong or strict restriction. They just ask you to be over 13 but most people lie”.*

Besides the early entry into social media use, **the study also indicated that nearly half of adolescents are heavy users. 42.6% of the respondents spent more than 4 hours daily on social media (heavy usage), 26.1% spent between 2 and 4 hours daily (moderate usage), and 29.8% spent less than 2 hours daily (low usage).** Interestingly, 1.5% of adolescents who have social media profiles did not spend anytime using any of the platforms – possibly because they did not (temporarily) have access to mobile phones or computers.

Out of the heavy users, female respondents accounted for 57% while the male respondents accounted for 43%. It would be interesting to observe this trend of usage in relation to any gender differences in the manifestations of the proxy mental health indicators.

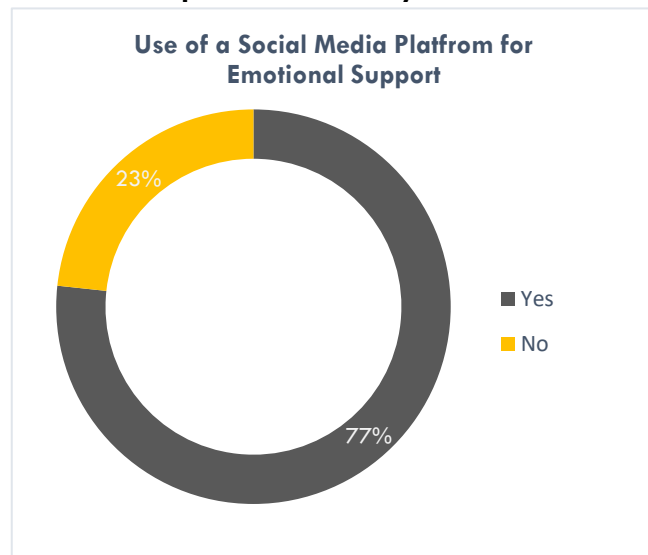
Amongst the participating adolescents, social media is the preferred way for communicating with others, opening endless options of expression and dissemination of information, facilitating relations, influencing the way in which they see themselves, providing spaces for relaxation and entertainment, and helping stay in touch with the people they consider important. - *“I feel that*

*[social media] is something for young people... where young people can be free and share their opinions... It is where they can find people with similar opinions and where they can relax from everyday life."*

In direct relation to the study, the respondents reported using social media as a source of mental health information.

When asked which social media platform provides them with the mental health information they can trust, YouTube was the most prominent with 67.5%, then Facebook at 50.1%, and Instagram at 40.1%. **Notably, while WhatsApp was the platform that they considered to provide them with most emotional support (at 84.4%), it only accounted for 18% of mentions as a source of mental health information. A possible explanation to this scenario lies in the functionality of these individual social media platforms, and on the certainty that the respondents did not construe a correlation between emotional support and mental health information.** WhatsApp is predominantly a chat application through which the respondents engage with their friends, family and other (potential) emotional support networks. On the other hand, YouTube contains videos (mostly music and educational) on diverse topics. Twitter and snapchat registered 8.4% and 1.4% respectively.

In general terms, **the respondents considered social media to be a place where they can always find emotional support, regardless of the distance of the people in their network or the time of day. 76.7% of the adolescents interviewed reported using social media platforms for emotional support.** In many cases, whether participants want to share an achievement, celebrate an important event in their lives or simply share an emotional state, they find in social media the support they expect. *"People congratulate you through social media when you have an achievement or it's your birthday, and that makes you feel good. It's nice to feel that there are many people who think of you... even though they are not in that moment physically with you"; "I think [social media] do have a role in the emotional support I get because, for example, I'm having a bad day and there's no one home when I get there, but I'll always have my phone so I can talk to someone who can cheer me up."*



Emerging from the literature review, the level of emotional support drawn from average social media usage may depend on other salient factors as school, home or peer experience. Correlations from the quantitative data gathered indicate well established relationships between emotional support and such contextual experiences – as indicated in the frequency tables below;

The tables show the relationship between offline social experience and various social media platform experience<sup>2</sup>.

<sup>2</sup> Was created through a variable transformation in which 13 variables were created for social media platform experience. For instance, in order to know whether the respondent use social media platforms for emotional support without necessarily mentioning the exact platforms, we

**Table 1: School experience and Social media platforms provides me with emotional support**

Country	School experience	Yes		No		P-value
		Count	Row %	Count	Row %	
Chile	Negative experience	140	72.5%	53	27.5%	0.101
	Positive experience	368	78.5%	101	21.5%	
	Total	508	76.7%	154	23.3%	
El Salvador	Negative experience	134	74.4%	46	25.6%	0.004
	Positive experience	299	84.7%	54	15.3%	
	Total	433	81.2%	100	18.8%	

A keen observation of the data in the table above indicates that there is a trivial difference in between those who reported either positive or negative school experience in relation to the use of social media platforms to provide emotional such. In Chile, 72.5% of adolescents with negative school experience reported using social media platforms for emotional support, against 78.5% reported by those with positive school experience. In El savador, it was 74.4% for negative school experience and 84.7% reported by those with positive school experience. However, it is critical to note that **in both countries those with negative school experience reported lower reliance on social media platforms for emotional support compared to those with positive school experience.**

Further, the table above (based on the p-values) indicates that, in Chile, **using social media platforms for emotional support does not depend on whether the respondent had negative or positive experience in school.** However, El Salvador, using social media platforms for emotional support depends on the experience that the respondent had in school - this difference can be associated to cultural and other contextual diversities between the two countries, such as the availability of teachers who are appropriately trained to provide psychosocial support.

This brings to fore the fact that most adolescents spend a significant amount of time in school, further to which it would be reasonable to insinuate a relationship between the school experience and mental health - without forgetting equal significance of peer and home experience. Schools do have a major role in providing emotional and mental health support to the adolescents, but before schools can appropriately tackle poor mental health, it is essential that they understand the causes behind mental ill health and the transition from emotional pain to mental health problems. Emotional pain for adolescents which may be caused, for example, by their parents separating, an illness or a death in the family, multiple house moves or bullying at school, and the impact this can have, needs to be understood and normalised by schools. Before discussing mental health conditions, **schools should focus on providing adolescents with a space to talk**

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created a binary variable with "Yes" and "No" answer options. "Yes" for those who mentioned at least one social media platform as a source of emotional support and "No" otherwise.

**about painful life experiences and offer appropriate support.** The wealth of scientific research on 'social buffering' (having someone at the time of the painful life experience, to listen, empathise and understand) shows that this can prevent students' emotional pain transitioning into a mental health issue.

Unlike school experience, the study established a significant relationship between peer experience and the use of social media platforms for emotional support in Chile. While in El Salvador there was an inconsequential correlation between the two – as shown in the table below;

**Table 2: Peer experience and Social media platforms provides me with emotional support**

Country	Peer experience	Yes		No		P-value
		Count	Row %	Count	Row %	
Chile	Negative experience	55	59.8%	37	40.2%	0.000
	Positive experience	452	79.4%	117	20.6%	
	Total	507	76.7%	154	23.3%	
El Salvador	Negative experience	85	75.2%	28	24.8%	0.065
	Positive experience	348	82.9%	72	17.1%	
	Total	433	81.2%	100	18.8%	

Data in the table above further indicates that more adolescents with positive peer experience reported using social media platforms for emotional support in both Chile and El Salvador, with same trend seen in the relation between Home experience and the use of social media for emotional support. With all factors considered constant the consistence of this evidence indicates that adolescents with positive home experience are more likely to use social media platforms for emotional support.

**Table 3: Home experience and Social media platforms provides me with emotional support**

Country	Home experience	Yes		No		P-value
		Count	Row %	Count	Row %	
Chile	Negative experience	52	71.2%	21	28.8%	0.238
	Positive experience	456	77.4%	133	22.6%	
	Total	508	76.7%	154	23.3%	
El Salvador	Negative experience	66	70.2%	28	29.8%	0.003
	Positive experience	367	83.6%	72	16.4%	
	Total	433	81.2%	100	18.8%	

The El Salvador data shows that using social media platforms for emotional support depends on the home experience as shown by the Chi-square test with p-value = 0.003.

### 3.2.1. The Positive Emotional Effects of social media

For most respondents, social media represents a space outside their real lives full of opportunities and possibilities, in which they can learn, expand their interests and knowledge,

express themselves, and find support. Some of the motivators mentioned by adolescents for the active use of social media include;

- i. **A way to escape, relax and have fun:** One of the main drivers for social media use mentioned by adolescents is the possibility of disconnecting from their real lives for a while, have fun and show *how fun* they are. Social media thus offers an infinite variety of fun contents that can be accessed anytime of the day or night, allowing them to take their minds off their daily responsibilities. *"It allows you to disconnect from the world for a while... I think it's quite good because I feel that, to some extent, we all need a moment to relax to recharge our batteries, and then go back to the real world."*
- ii. **Attractive and constantly renewing:** Social media are perceived as a colorful world full of varied and attractive information and images. It is the place where they can always find new and endless stimuli, and can rarely if ever get bored. Given that social media has become one of the main sources adolescents consult to get information about their direct and indirect contexts, it is also the place where they can stay updated with the latest news, the latest posts of the people they care about, as well as the latest trends on their topics of interest. *"[Social media planet] looks colorful with a lot of people... Very populated... I feel interesting because I'm always exploring something new."* And then, *"I think that, in addition to being a means of communication, [it] is a very important means of information since it keeps you very informed."*
- iii. **Young and futuristic:** Social media is considered a place for the young, where there is no room for anything outdated. It is also a place where adolescents can be in touch with the latest trends in technology, giving it a futuristic feeling and increasing the interest on it. It is like a window to the future for many of the interviewees: *"[Social media planet] It's modern, it has robots... futuristic things, it has many people talking... especially young people, they're all having fun."*
- iv. **A place where like-minded people can easily find each other:** Based on the variety of available content, social networks facilitate meeting people with similar interests. This promotes the creation of new relationships in which adolescents can find support, express themselves within a group of like-minded people, and become "experts" in a specific topic. *"I find people who have interests like mine, we have things in common, or friends in common... and so I make a bigger circle, a bigger network of friends and it feels good."*
- v. **Happy... or at least that is what it seems to be:** Most adolescents access social media to seek or post for positive content. The photos, posts or information from the people that interviewees have in social media usually denote happiness, success, and desirable attributes in general. The possibility of *choosing* what to show is one of the main differences with reality: in social media adolescents tend to post the "best version" of themselves, in order to become admired and desired by others. *"It's only happy people... or people pretending to be happy."*

In addition, the use of social media is linked to other positive connotations given that these allow adolescents to achieve the following:

- Share thoughts, feelings and experiences in the exact moment that these happen, and to get immediate feedback from people in their networks. *“A website where you can share images, feelings, or thoughts with other people.”*
- Stay in contact with those who live far away and don't lose the bond with them. *“Long-distance communication... Because I have family in Canada and I can contact them through social media.”*
- Start or continue a conversation with close friends and organize social gatherings and meetings in the “real world.” *“For example, you can organize something with friends when you are together but then you separate and can continue to organize it through social media.”*
- Study with others, discuss school-related topics, and do homework. *“On Tuesday we had a math exam, then on Monday we made a video call with a friend to study and we did well in the exam; that's also what social media are for.”*
- Expand their knowledge and learn about topics of interest in a “fun” audiovisual way. *“There used to be things that I didn't know or didn't understand, and thanks to social media I could understand them and learn a little more. I like nature a lot, so in social media I could find images of landscapes and nature in other countries”.*
- Learn about other cultures given that adolescents can interact with people around the world and find contents about different places. *“I am very interested in Korean culture and I have learned a lot about it in social media.” “I have met one person from each country of the American continent.”*
- Become who they want to be, by facilitating communication with others, finding and expressing interests. *“Thanks to social media, I changed a lot because when I was little... I was super shy and I was very reserved, and when I started with social media I got to know more people, started socializing, and that helped me a lot.”*

### 3.2.2. The Negative Emotional Effects of social media

Despite identifying the positive aspects and the opportunities in the use of social media, other respondents had knowledge of the immediate risks of prolonged exposure to social media, particularly based on the perception of social media as a less safe and risky place. *“I really feel that the bad part is much bigger than the good part of social media.” “Out of 100% I think that 60% are bad things... there are people who hide their true selves in order to meet more people and that's why I think there are more bad things than good things.”*

Respondents in the study showed a stronger emotional response when speaking about the negative. *“[Social media] are also a bit dangerous. You can sometimes give information about your daily life, your name... you trust, but there are bad people who take your information, take your image. Sometimes they can also harass you.”*

Among the negative aspects of social media, the respondents highlighted;

- i. **Individualistic/narcissistic:** Even though social media implies a constant interaction, most adolescents focus on how to show themselves to others, how to get their approval, and

how to improve themselves in order to get more followers. By focusing on themselves, adolescents consider that sometimes they can forget about being in real contact with others. *“But sometimes people become dumb on social media... like individualistic. On the social media planet I would feel kind of weird because everyone is stuck in their social media and they do not listen their reality.”*

- ii. **Lonely, strange and cold:** Despite a continuous interaction, adolescents perceived social media users as disconnected, isolated and limited to a device and a screen for establishing contact with others. Hence, social media can be perceived as frivolous, and cold, as it limits relationships and interactions to text messages and audios. Everything is filtered and edited before it is sent. This generates the feeling of transforming human relationships into “robotic relationships.” The loss of “real contact” generates fear in some of them, making them value real-life relationships and experiences. *“It would be weird anyway because for me [on the social media planet] there would be no socialization. It would be simply writing and sending audios from my phone... I would miss making real friends, playing and studying or telling my problems to other people.”*
- iii. **Disturbing contents:** Within the variety of contents available in social media, interviewees had found some that they consider disturbing, sad, or unpleasant such as violence, sex, animal abuse, among others. *“Recently I came across with a video that I didn’t like because it was something they were doing to an animal, and honestly I don’t like that. I think that’s horrible and disturbing... There are things that you mistakenly find and that aren’t nice.”*
- iv. **Lack of control:** Social media provides an uncontrolled space to share fake and malicious information that could harm the integrity of adolescents. For interviewees, there was no filter for the information, contents or people who use social media.
  - **Fake Profiles:** It is possible to create various accounts or fake profiles in order to harm others, and this is not controlled by social media platforms. Some participants mention having been contacted by people with fake identities/profiles through social media. Although some are just other teenagers that just want to assume a different identity for fun or for protecting themselves, others are adults with bad intentions who ask for intimate photos or information: *“[Social media platforms] don’t have a strict control over the information that you provide... Thus, I could create 10 Facebook accounts with different emails”; “It has happened to me that the person is not who he said he was. It’s been like two or three people who told me to be boys about my age, but then they told me the truth, they were 16-17 and they were actually girls.”*
  - **Dissemination of Contents:** Contents shared can disseminate and become viral without the permission of the person involved. Also, despite the filters that social media platforms have and the report tools, many disturbing contents can be disseminated and reach young people. *“I believe that the negative side is that it is a place with little filter, is not completely reviewed or analyzed... is not controlled at all times to identify what is bad or what shouldn’t be seen by some people.”*

- v. **Manipulation of the information/lack of trustable sources:** The information available is not always true and does not always come from a trustworthy source. However, interviewees were prone to believe what they see in social media, especially if it is presented in an attractive way. *"I recently read a study that talked about how humans are extremely docile and impressionable. Social media are a very powerful weapon to implant an idea"; "Also fake news are a problem... these are rumors spread easily because anyone believes what is on the internet."*

### 3.3. Relation between Digital Behaviour and Mental Health Proxy Indicators [Study Objective 2]

**KEY FINDING: Adolescents who have more trouble in school, with their peers, or at home, are a lot more likely to report various mental health issues. In comparison, social media use seems mostly unrelated as a factor that explains mental health issues.**

The second aim of the study was to gather evidence on the relationship between digital behavior and mental health proxy indicators (self-perception, acceptance, sense of integration, social support, etc.), including differences by gender and age (younger and older adolescents), by digital platforms, as well as the translational and cross-over effects of digital and physical realities. **Based on the evidence presented in this section; there are clear indications from the study that the life context of the adolescent is a stronger determinant of mental health. Adolescents who have more trouble in school, with their peers, or at home, are a lot more likely to report various mental health issues. However, the influence of the use of social media to explain mental health issues seemed insignificant as no unidirectional correlations could be established.**

In trying to establish such causal relationships, the study first sought the understanding of the respondents on mental health. During the interviews, most participants showed some degree of knowledge of the mental health term, which was associated with concepts such as a balanced life, emotional stability; an equilibrium between the positive and negative circumstances of life; the way in which emotions are regulated; self-control; positive attitudes and thoughts; being able of taking good decisions and being good to others. For instance, *"Emotional stability, I think it has a lot to do with being stable enough to make decisions in the best way in any situation."*

However, there were instances when some interviewees related the term with aspects such as mental illnesses, and the dichotomy of being insane/sane. *"Mental Health, well, I don't know... I imagine that it's about how your mind is. Are you crazy or you are sane?"*

#### 3.3.1. Social Media and Proxy Mental Health Indicators

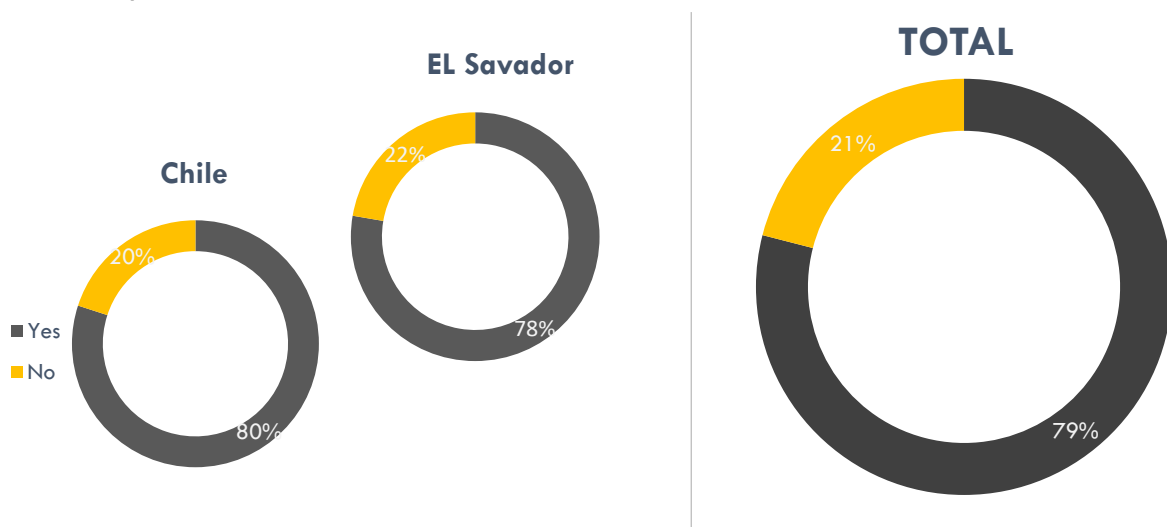
##### i. Anxiety

Although none of the interviewees had been clinically diagnosed with social anxiety disorder, some mentioned having feelings of anxiety linked to something they saw or something they posted on social media, and the reactions or impact that this had generated. Usually some of

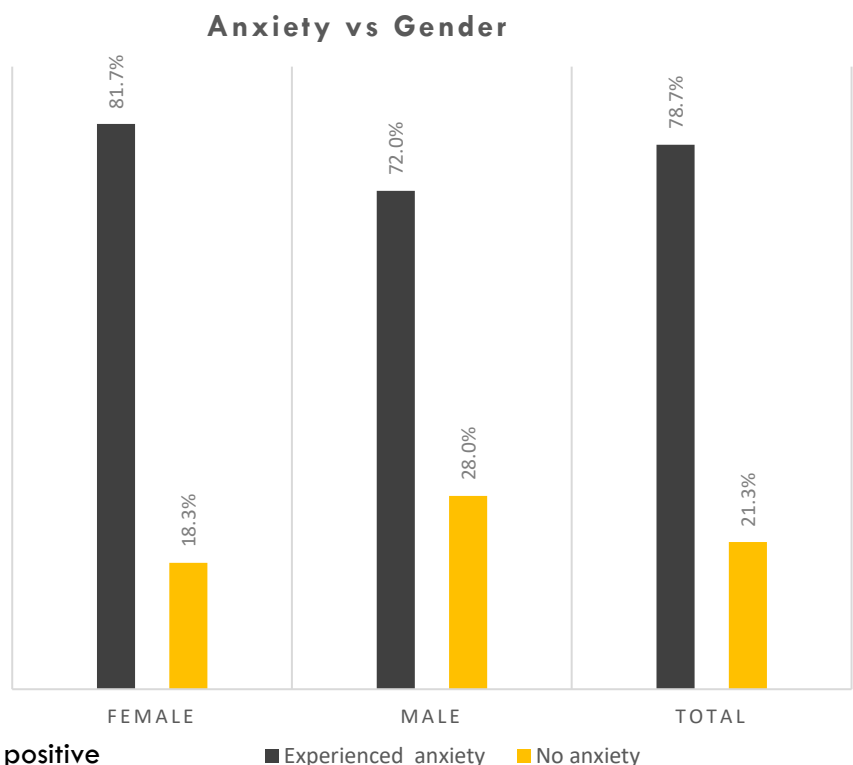
these posts or contents are directed to the person they like. However, other times these contents are images, videos, screenshots, etc., posted by others without permission seeking to make fun of them or harm them. Seeing all of the great things that their (adolescents) Facebook or Instagram friends post may make them feel left out or inadequate. Same thing for seeing how many "likes" or comments others get on their posts - subsequently making them think of all the things they don't have. This creates a compelling argument for the fact that social media use can subsequently exacerbate pre-existing mental health conditions such as depression.

Overall, **81% of adolescents interviewed from Chile indicated they had experienced anxiety associated with social media use, compared to 77.7% from El-Savador** – as further shown in the doughnut charts below;

Charts: Anxiety Associated with Social Media



Notably, **significant gender differences were noted in the experience of anxiety.** Beyond the fact that 81.7% of female adolescents compared to 72% reported by their male counterparts (as shown by the graph to the right), **the study revealed that females were 40.8% more likely to experience anxiety than males if the level of exposure to social media was taken as a constant** – considering an odds ratio (OR) of 0.592 (95%, CI: 0.422 – 0.832). There were equally differences noted between those who had positive



home experience and those who had negative home experience with an OR of 0.500 (95%, CI: 0.279 – 0.895). During the qualitative interviews, the adolescents felt that **negative interactions and social comparisons on social networking sites were related to higher levels of anxiety, while displays of social support and social connectedness on social networking sites were related to lower levels of anxiety.** The other covariates relate to anxiety as shown in the table below.

*Table: Anxiety experienced in the last 6 months*

Covariates	Odds ratio	Confidence Interval		Standard error	P-values
		Lower limit	Upper limit		
Gender	0.592	0.422	0.832	0.173	0.003
Age group	1.002	0.721	1.393	0.168	0.990
Heavy users of social media	1.102	0.788	1.542	0.171	0.570
Home experience	0.500	0.279	0.895	0.297	0.020
Peer experience	0.842	0.521	1.360	0.245	0.482
School experience	0.711	0.486	1.039	0.194	0.078

The data presented in the table above confirms a positive association (correlation) between age and anxiety, and heavy social media usage and anxiety considering Odds ratios of 1.0 and 1.1 respectively. **In principle this infers that heavier usage of social media contributes to higher risk of anxiety.** The extent of effect of heavy social media usage on mental health of adolescents is further discussed in section 3.3.2. below.

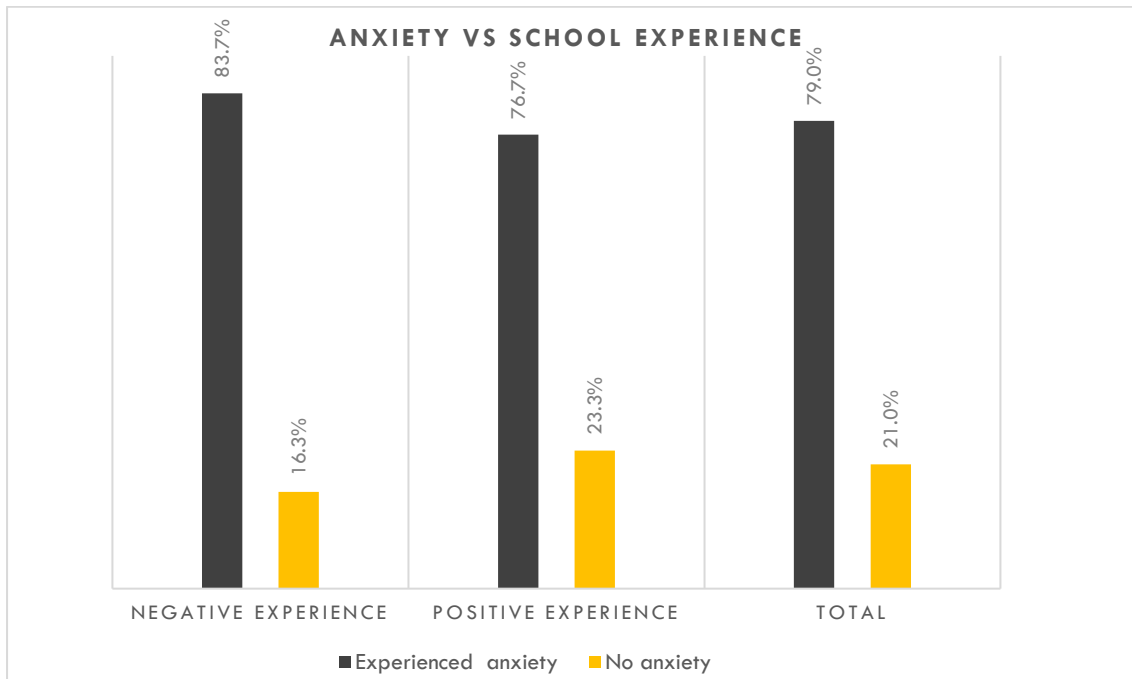
To better understand the relation between anxiety and the various offline determinants, the tables below further demonstrate the notable statistical inferences on the relationships and are useful in supporting the finding that the causal linkage between mental health and social media amongst the surveyed population is notable but insignificant nonetheless.

**Table: School experience versus anxiety**

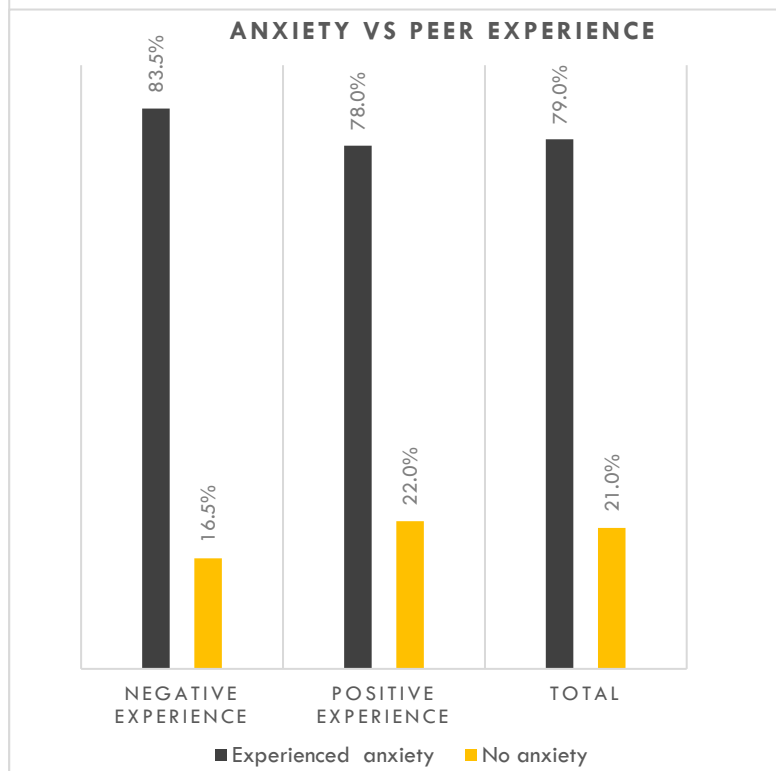
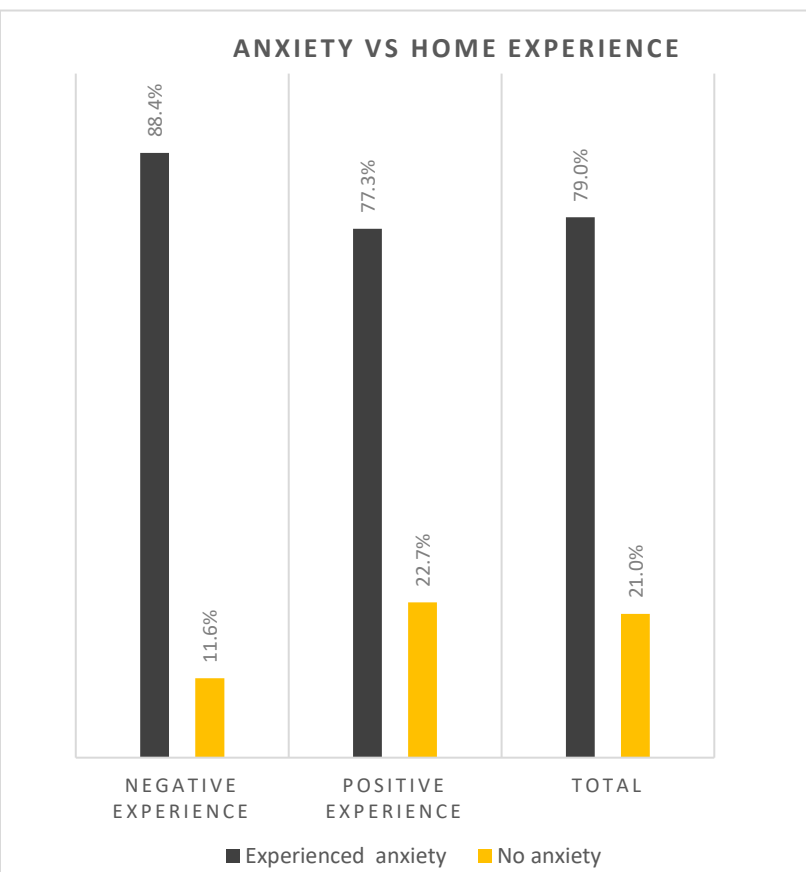
Country	School Experience	Experienced anxiety		No anxiety		P-value
		Count	Row %	Count	Row %	
Chile	Negative experience	142	86.1%	23	13.9%	0.018
	Positive experience	281	77.2%	83	22.8%	
	Total	423	80.0%	106	20.0%	
El Salvador	Negative experience	114	80.9%	27	19.1%	0.260
	Positive experience	189	75.9%	60	24.1%	
	Total	303	77.7%	87	22.3%	

The table above shows the frequency distribution between experiencing anxiety and the experience the respondents had at school. Chi-square test shows that experiencing anxiety depends on the experience respondents had at school in Chile but does not seem to be the case for El Salvador. In the graph below it is evident that respondents with negative school experience

reported higher cases of anxiety. 83.7% of respondents with a negative school experience experienced anxiety compared to 76.7% reported by those with positive school experience. While this difference is notable and consistent with other studies, it is barely significant in deducing a causal relationship.



A similar pattern is observed for the influence of peer experience and home experience, as indicated in the graphs below;

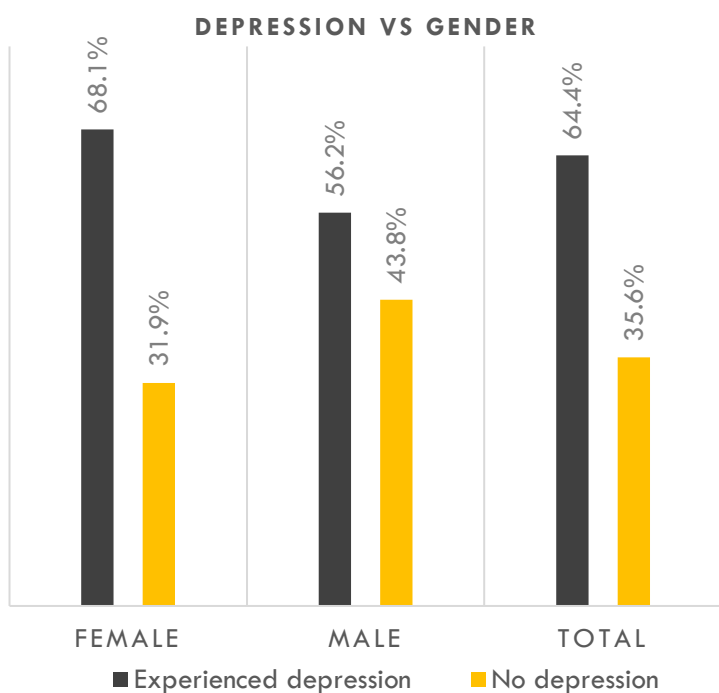


Further to the graphs above, the results from Chi-square show that experiencing anxiety does not depend on the experience had with peers/friends in Chile,  $P = 0.059$ , and El Salvador  $P = 0.591$ , while a cross referencing of experience of anxiety and home experience showed mixed correlation with respondents in El Salvador reporting a correlation (considering a P-value of 0.005), and the respondents in Chile reporting a lack of correlation with a P-value of 0.149.

## ii. Depression

Depression is a mood disorder characterized by low mood, a feeling of sadness, and a general loss of interest in things (WHO, 2008). The persistent feeling of sadness or loss of interest that characterises major depression can lead to a range of behavioural and physical symptoms. These may include changes in sleep, appetite, energy level, concentration, daily behaviour or self-esteem. Depression can also be associated with thoughts of suicide.

**A total of 64.4% of respondents reported having experienced depression within a six month period** – with variable differences across the various covariates, such as gender, heavy users and non-heavy users, and positive and negative home experience, peer experience and school experience.



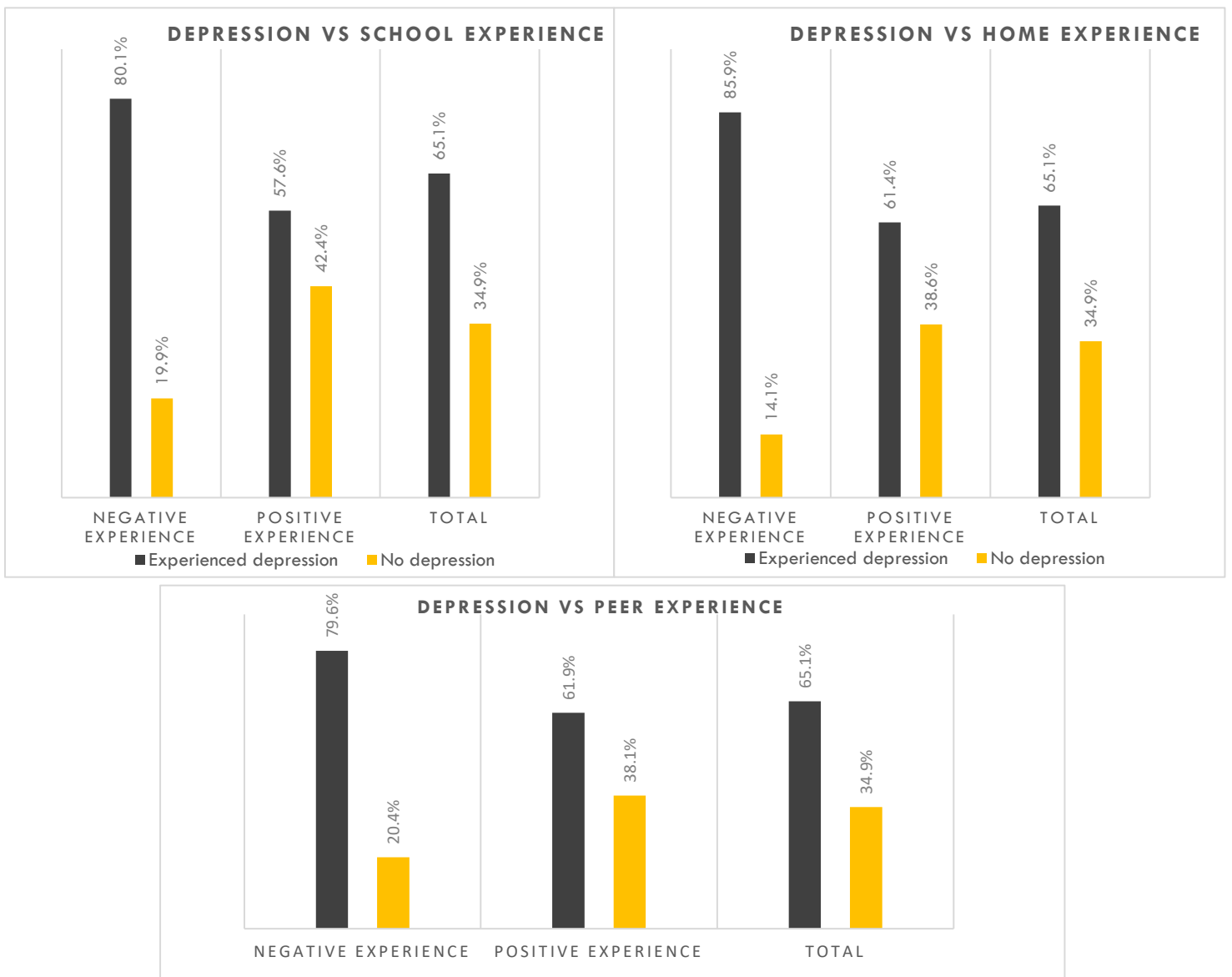
For example, the graph indicates that **68.1% of the girls experienced social media related depression compared to 56.2% of the boys.** This could be linked to numerous factors including the vulnerability of girls to comments, or lack of comments to their posts on social media (especially of their images). However, from the qualitative transcriptions, only a single case of clinical depression linked to social media use was reported in this study - by a girl who was bullied through Facebook based on her appearance.

As she put it; *“Almost all the bullying was through social media... they uploaded photos of me comparing me with things or animals and make jokes about it... I was depressed for more than 6 months... I cried all the time.”*

Other than that, some episodes of sadness were mentioned, mostly based on the rejection by the person they like or a negative body image. Although the use of social media usually facilitates the approach with the person they like, it can also generate insecurity when comparing themselves with others, and sadness when a rejection is made public. Additionally, the possibility of constantly comparing physical characteristics with idealized or edited images, increased in some the feelings of insecurity and self rejection. *“When I was in seventh grade there was a boy who liked to check a girl’s profile because he liked her. Then when he realized that she had other*

friends or a boyfriend he felt bad and he was all weird that day, he did not talk”; “It’s not exactly depression but more like an emotional downturn, in which you turn off for a while and have to relax and disconnect from social media.”

In relation to the experience of depression and offline experience, **the data points to a consistent (causal) pattern in the relationship between positive and negative school, peer and home experiences and the experience of depression.** As shown in the graphs below; **80.1% of adolescents with negative school experience reported experiencing depression compared to 57.6% reported by those with positive school experience.** Similarly, 85.9% of respondents with negative home experience reported having experienced depression compared to 61.4% of those with positive home experience. Based on the significant difference between positive and negative offline experiences, it would be reasonable to conclude that **social media certainly precipitates depression but is in no way a major driver for depression amongst adolescents, and that home, school and peer experiences play a much more major role –** with home experience seemingly having a stronger influence. More controlled studies should be conducted to advance this finding.

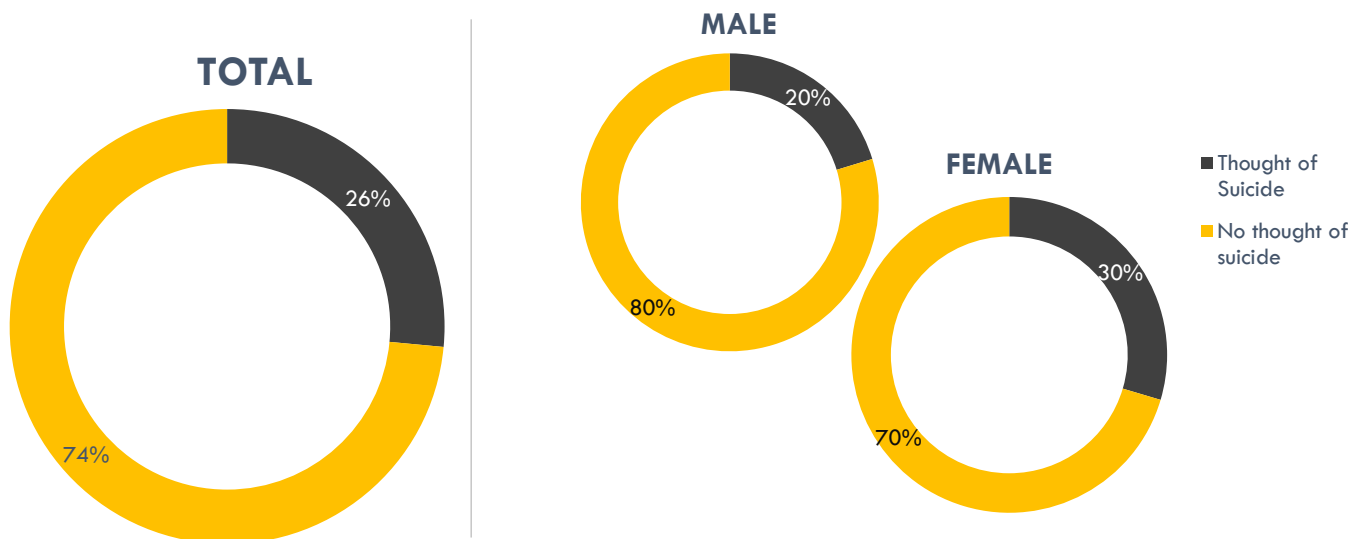


### iii. Thought of Suicide

Previous studies have linked depression to suicide. While not every depressed person attempts or commits suicide, most people who end their own lives are dealing with depression. About 90% of people who commit suicide have a mental disorder before the time of their death (Paula Clayton, 2016) out of which about 65% have major depression. The link between depression and suicide is very well established across all age groups.

Women are twice as likely to experience depression than men, but men are four times more likely to commit suicide. In general, men experiencing depression make up one of the highest risk groups for suicide, regardless of age. Adolescents are also at risk, as suicide is the third leading cause of death for teens.

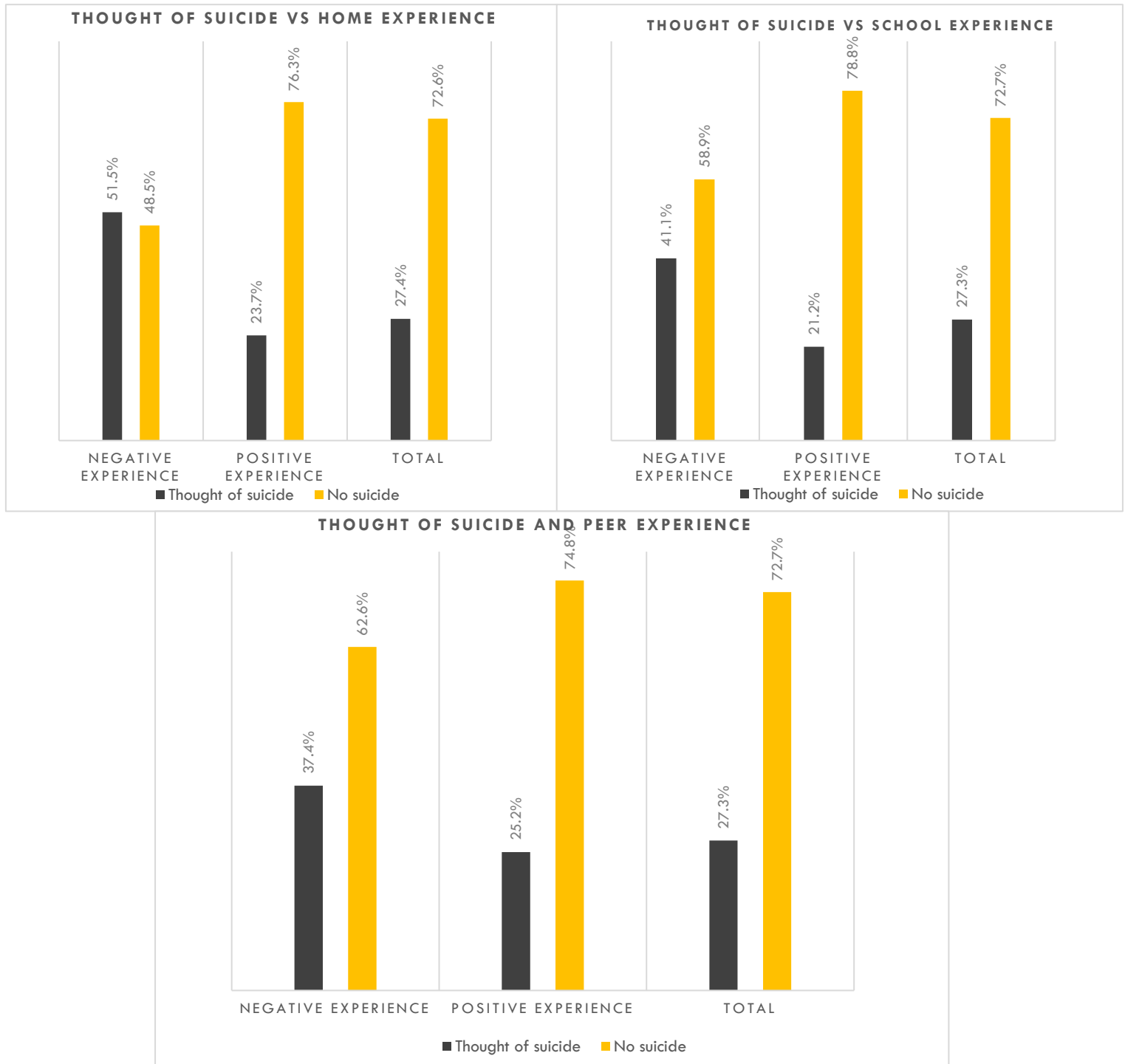
This study established that an average of **26.4% of adolescents have thought of ending their lives over the last 6 months** – with variances due to factors as gender (OR of 0.655), and home, peer and school experience (with an average OR of 0.448).



During the qualitative interviews it became clear that **there are two major links between social media and thoughts of suicide amongst the adolescents - There is a positive link, which is mainly about suicide prevention; and a negative link, which focuses on how social media may be used as a tool to encourage and pressure adolescents towards suicide.**

The positive links reported between social media and the thought of suicide include; the ability to detect adolescent at risk of suicide with their social media posts; and the platforms can be used for mental health education and suicide awareness campaigns. On the other hand, negative links relate to how social media is used to encourage and pressure adolescents toward suicide through cyberbullying, sexting, and disseminating information about self-harm techniques and even pro-suicide content.

As in the case of anxiety and depression, a Chi-square test indicated that the thought of suicide depends on the experience the respondents had at home, school and with peers – considering p-values of 0.000, 0.037, and 0.011 respectively. The graphs below visualize the relationship of offline experiences and thoughts of suicide.



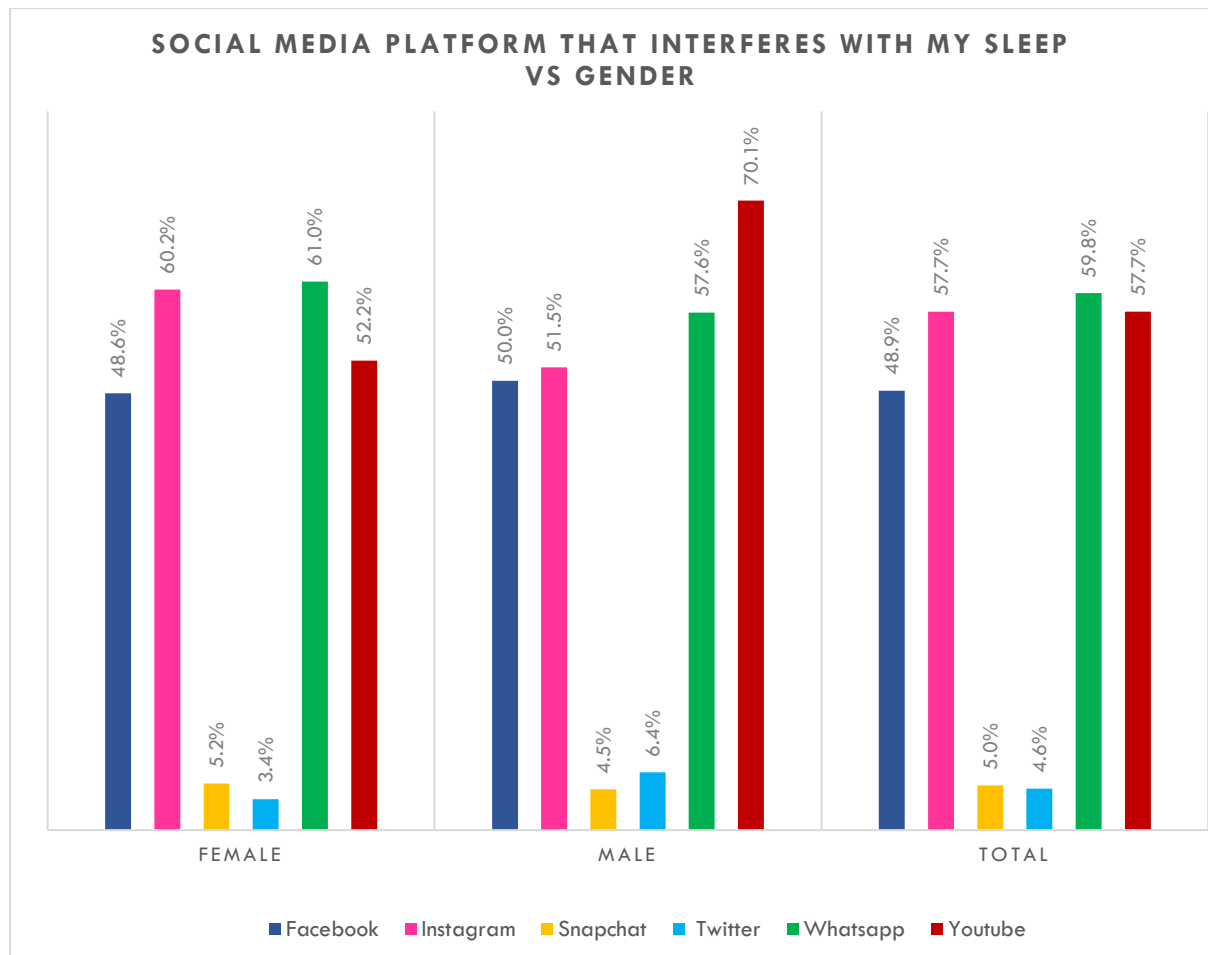
**Only a total of 28.8% of the respondents had sought some form of counselling support from teacher or other member of community – which raises the question as to whether there are adequate capacities with their social support structures (home, school, peers) to provide them with counselling or if they are even aware such support exists. In a school environment, such capacity would involve the availability of teachers who are appropriately trained.**

Presence of counselling services will support social buffering and cushion their emotional challenges/pain from transitioning to mental illnesses and thoughts of suicide.

### i. Irregular Sleep Pattern

Insufficient sleep has serious health impacts, both in the short and long term. The short-term effects include anxiety, Drowsiness, forgetfulness, distractibility, decreased performance and alertness, memory and cognitive impairment, occupational injury and long-term effects may include depression/mood disorders, high blood pressure, heart attack, stroke, obesity (Sutter Health, 2015).

The females in the study pointed to WhatsApp as the platform that interferes most with their sleep (at 61%) while the males pointed to YouTube (at 70.1%).



Most adolescents reported that they have gone to bed late or have seen their number of hours of sleep per night reduced due to the use of social media. Interviewees mention that they sometimes tend to lose track of time when using social media in the night hours, and state that some of their friends usually access social media during their sleep hours (especially at the beginning of the night). The most common reasons for this are continuation with a conversation in a group chat; exploration of new contents or keeping updated with their friends' activities.

The study established that adolescents who spend a lot of time on social media are more likely to suffer sleep disturbances. In some cases, this has had negative repercussions in their performance at school, given that sometimes they are too tired to pay attention in class. *“Yes, it has happened to me. Maybe because you lose track of time and suddenly you watch the clock and it’s 3am in the morning and you’re still there, and you think there’s always something important to see, but in the end there isn’t”; “I have friends who don’t sleep because they are on social media all night, and then they get very tired to school and some fall asleep in class, and I know it’s because they have been on social media.”*

Other studies have indicated that social media could affect sleep because of the light emitted from the screen, because the content is emotionally engaging or because people just get caught up doing it and go to bed later – or it could be a combination of all three.

### 3.3.2. Mental Health Outcomes and Heavy Social Media Users

For purposes of this study, heavy social media users were defined as those who spent more than four hours on social media. Using a mixed effect logistic regression model to determine the association between mental health outcomes and heavy social media users. The table below shows the outcome of this analysis across different mental health outcomes and establishes a relationship between heavy social media users and various mental health outcomes.

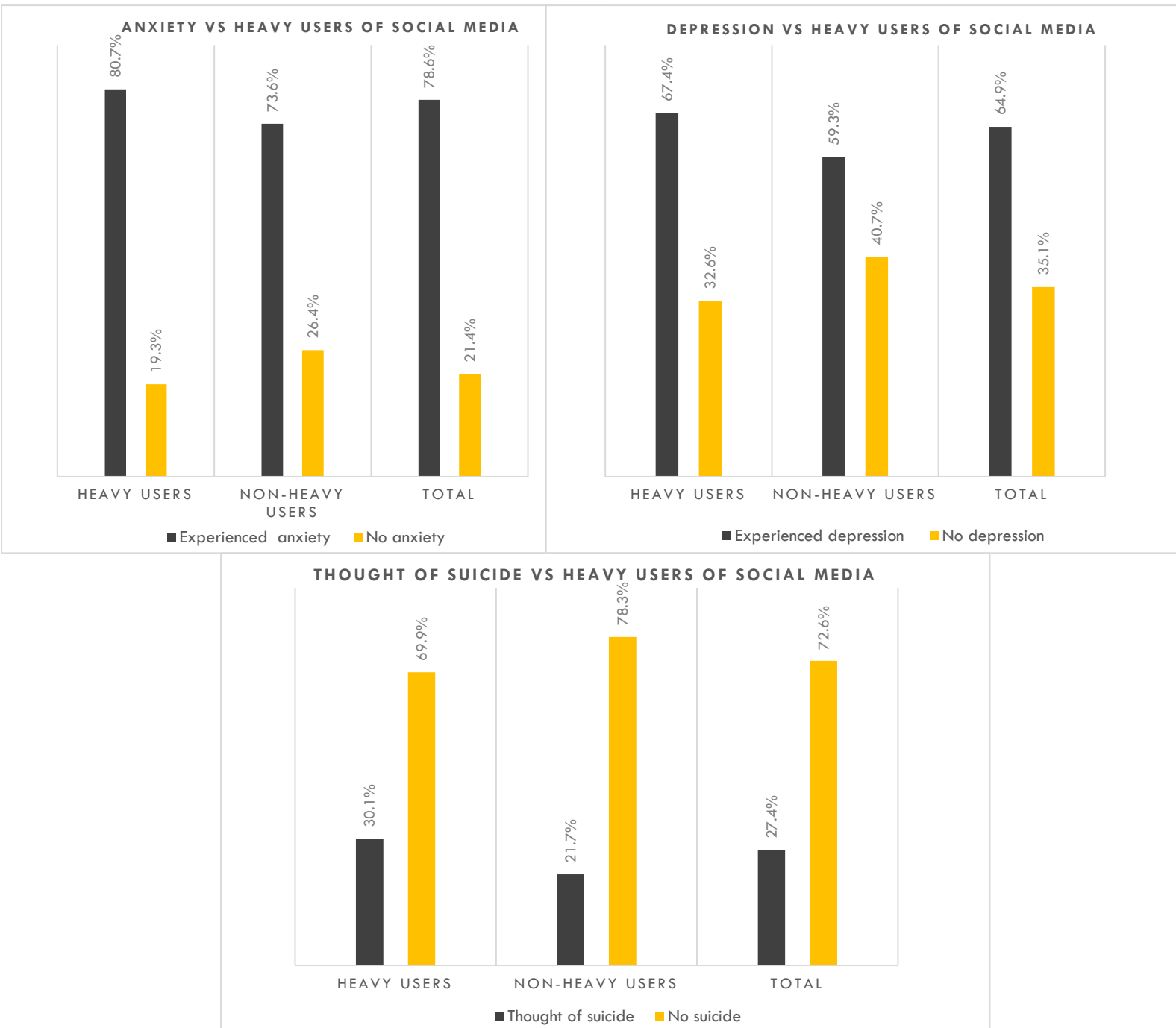
**Table: Relationship between mental health outcomes and heavy social media users**

Mental Health Outcome	Odds ratio	Confidence Interval (95%)		P-value
		Lower limit	Upper limit	
Anxiety experienced in the last 6 months	1.504	1.074	2.106	0.018
Depression experienced in the last 6 months	1.439	1.081	1.914	0.013
Thought about ending own life in the last six months	1.556	1.133	2.137	0.006
Looked for advice, help, counselling or support from an adult outside my family	1.263	0.939	1.699	0.122

Firstly, experiencing anxiety is significantly different between heavy social media users and non-heavy social media users, p-value = 0.018. The odds ratio (OR) indicates that if the anxiety experienced by the non-heavy social media users increase by 1 unit, the anxiety experienced by the heavy social media users increases by a factor of 1.504 (95%, CI: 1.074 - 2.106). A similar result is indicated for depression experienced in the last six months with an OR of 1.439 (95%, CI: 1.081 – 1.914), and thought about suicide in the last six months with an OR of 1.556 (95%, CI: 1.133 - 2.137).

In a two ways analysis, 80.7% of heavy social media users experienced anxiety against 73.6% of non-heavy users, 67.4% of heavy users experienced depression compared to 59.3% of non-heavy users, and 30.1% of heavy users experienced thoughts of suicide compared to 21.7% of non-heavy users. **This consistent pattern between heavy and non-heavy users points to a**

**conclusion that heavy usage may have some effect on mental health indicators.** The graphs below visualize such narrative;



However, based on the interference of contextual experience at school, home or amongst peers, and based on the consistency of observable difference between heavy and non-social media users, it would be reasonable to conclude that **such difference in heavy/non-heavy social media may not be the single most factor that affects mental health proxy indicators, but certainly remains a catalytic/risk factor.** In a three ways analysis of heavy usage, offline experience and mental health indicators, the data indicates that;

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### SCHOOL EXPERIENCE

- 85.4% of heavy users with negative school experience reported experiencing anxiety, compared to 79.6% reported by non-heavy social users with negative school experience
- 83.5% of heavy users with negative school experience reported experiencing depression, compared to 71.3% reported by non-heavy social users with negative school experience.
- 43.2% of heavy users with negative school experience reported experiencing thoughts of suicide, compared to 35.8% reported by non-heavy social users with negative school experience.

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### HOME EXPERIENCE

- 89.4% of heavy users with negative home experience reported experiencing anxiety, compared to 84.6% reported by non-heavy social users with negative school experience.
- 89.8% of heavy users with negative home experience reported experiencing depression, compared to 75.6% reported by non-heavy social users with negative school experience.
- 54.3% of heavy users with negative home experience reported experiencing thoughts of suicide, compared to 43.2% reported by non-heavy social users with negative school experience.

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### PEER EXPERIENCE

- 86.4% of heavy users with negative peer experience reported experiencing anxiety, compared to 76.2% reported by non-heavy social users with negative school experience.
- 83.9% of heavy users with negative peer experience reported experiencing depression, compared to 73.4% reported by non-heavy social users with negative school experience.
- 42.5% of heavy users with negative peer experience reported experiencing thoughts of suicide, compared to 27.9% reported by non-heavy social users with negative school experience.

These patterns confirm that heavy usage and offline experience does influence the mental health of adolescents in Latin America. In which case, **an intervention to improve the mental health/well-being of adolescents in the region need to be modelled around strengthening psychosocial support systems at home, school and amongst peers, and towards the desire to reduce exposure to social media** – or the consciousness of the positive/responsible use of social media.

### 3.3.3. Social Media and the Domains of Self Concept

The self-concept is a collection of beliefs about oneself. Generally, self-concept embodies the answer to "Who am I?". Self-concept is distinguishable from self-awareness, which refers to the extent to which self-knowledge is defined, consistent, and currently applicable to one's attitudes and dispositions. Thus, the state of one's understanding of the self has a direct bearing on behavior and by extension one's mental state. This study inadvertently gathered evidence on the relationship between social media use and aspects of self concept – findings of which are summarised as below;

**Self Image:** The influence of social media on the body-image of participants is evident. Both boys and girls mention that social networks make them—or someone they know—think constantly about their body when they compare themselves with people in their networks or celebrities. Some feel that they do not meet the standards of thinness and recognize that this has affected their self-esteem in a negative way and has led them to avoid sharing images of themselves. *"Compared to some guys who share pictures of them, I feel like I'm a little bit fat because I don't even exercise... but then I just forget about that"; "I used to see in Facebook... a lot of skinny guys and I was around 200 pounds... Then I said: F\*\*\* it I also want to take cool photos of myself, I want to share those photos, I want girls to check me out, I also want to be on the school soccer team... then this was an inspiration for me to lose weight."*

It is possible that this is the aspect of mental health in which the starkest differences arise between men and women in the use of social media. Girls not only find much more information about female beauty stereotypes in social media, but also feel much more pressure from their friends to look a certain way. While boys can give themselves the permission of looking funny in photos, or not looking well, girls always "have" to look perfect. *"They always say: you have to lose weight, but I say: no this is my body... and eating is living"; "Most guys don't care [about body weight]. Instead girls see a photo of a girl that is thinner or prettier, and they tend to get depressed because they want to lose weight and they want to feel prettier, so in that sense there is a difference between boys and girls."*

In the perception of some interviewees, girl's appearance has a higher relevance in their social acceptance than it does for men, for whom the demands on how they look are lower. *"I feel it is more common for girls because girls are always seeking to look good. I think it's important to look good if you want to get accepted."*

**Self-Identity:** Given the wide variety of content present in social media, this is considered to be an important source of identify, establishing and strengthening certain features of the identity of each adolescent. Based on the continuous exploration of those contents, many adolescents feel that they can build their personality, communicate their preferences, and let others know who they are. Also, some adolescents consider that the variety of information and the possibility of having contact with different opinions

simultaneously, could promote critical thinking and curiosity. *“For example.....I follow pages of books, of environmental protection, of animal protection, of music... and I feel that this is something very important because through these I can learn more and it helps me to establish my personality”*; *“When I talk and interact with other people through social media it's like that they have an image of me without knowing me in person... they get an idea of my personality.”*

**Self-esteem:** Respondents considered that social media has the capacity to impact both in a positive and negative way people's self-esteem, depending on the feedback they get, and how they felt about themselves previous to that. Also, it is evident that for most interviewees the self-esteem concept is closely linked to the perception they have about their physical appearance. **53.9% of the adolescents pointed to Instagram as the platform which most enhances their self-esteem, followed by YouTube and Facebook at 48.8% and 38.6% respectively. Twitter had the least influence on self-esteem at 5.3%.**

For some, the acceptance, recognition and validation received in social media is a source to increase their self-esteem. *“In a positive way when you share a photo and everyone says: Oh, you are so cute! You look nice! Or how many likes you get... Actually it sounds kind of superficial, but... if people think that that I look pretty in my photo then I'm pretty.”* For others, criticism, lack of recognition, certain jokes or comparing themselves to others in social media are elements that lower their self-esteem and generate negative feelings towards themselves. *“I sometimes feel that, since I'm ugly and I don't take pictures of myself, I don't have the same support as the guys who are considered handsome.”* In many cases these impacts, whether positive or negative, can be transferred to the way adolescents feel about themselves in the real world.

Regarding gender differences, interviewees consider that girls tend to see their self-esteem negatively affected more easily than boys in social media, especially when they are not satisfied with their appearance or body weight and receive comments about it, or compare themselves with other girls. Also, in general, girls are considered by interviewees to be more insecure about the way they look. *“I feel that sometimes it can affect girls more, because girls tend to be more interested in what people think of their appearance... on how they look. Then [social media] tend to affect girls' self-esteem to a greater extent”*; *“I know that [social media] do affect the self-esteem of several people... a friend of mine always compares her body with other girls bodies because she doesn't like herself... she says she's fat.”*

**Self-expression:** Many consider social media as a tool to express more easily and accurately what they think and feel. In social media, participants find phrases, videos, gifs, songs, images and content in general that support what they want to say. Likewise, social media allows them to tell the world who they are, what they like, their daily activities and opinions regarding a certain topic, building a personal narrative that summarizes their identity and highlights what they choose to show others. Gender differences were noticed regarding this particular aspect, based on the perception that girls are sweeter and more formal in expressing themselves, with boys communicating in a more-blunt and sometimes rude way. *“If I feel or think something and don't know how to express it, I can find something similar in social media that can help me formulate it. So*

*I feel that if you don't have a proper way of expressing yourself, you can gradually adapt the way in which other people express themselves to give your own opinion."*

**Personal Relationships:** Despite the fact that social media was perceived to have created space for interaction in which many have found emotional support and expanded their networks, respondents also distinguished their mental health experiences in social media from their mental health in the offline world. Thus, while some recognize that social media allows for self-expression, gives tools to strengthen their identity and sometimes strengthens their self-esteem, most mention that the published content is not always consistent with the experiences and feelings of their "real-world self." Therefore, it is considered that in social media most try to show the "best version of themselves," sometimes leaving painful experiences and negative feelings aside.

In turn, some adolescents feel that they are more exposed to comments and stimuli that could harm them in social media, which are usually processed by them behind a screen. *"In the real world things can affect you and others can see the way they may affect you ... but in social media even if a certain comment or a state affects you, nobody is seeing you, and you can continue sharing information and go unnoticed as if you wouldn't care"; "In social media I always show the best of me, but in real life when I get frustrated or angry that's just for me and I deal with it by myself, I would never show that image of myself in social media."*

For many adolescents, interacting with the person they like face to face is a source of anxiety, and some of them tend to feel insecure in these situations. In this sense, social media provides a space that facilitates the expression of feelings and strengthens relationships. *"Once I did get the number of a person that I liked it was a bit more easy for me to talk to her but in real life I didn't even look at her."*

Adolescents in the interviews felt that the contents and information shared through the profiles in social media make it easier to identify common interests and opinions with the person they like, helping to start an online interaction or facilitate a future conversation in person. Thus, after reviewing this information, many interviewees feel more confident when approaching who they like, and feel that they have more tools to make a good impression. *"For example, I shared a song, and she commented about three days ago: 'I love that song' and that's when we started talking, and she asked me for my WhatsApp number."*

Social media also has an important role in strengthening relationships with the person they like despite the distance of not being together all the time. *"I'm always talking to her, we can share a lot of contents, videos, photos... I was on vacation in the south of Chile and she was in the north and we kept communicating all the time."*

Social media has a relevant role in maintaining and strengthening interviewees' real-life relationships, as these allow them to remain in contact with friends and family despite the distance. In fact, through social media adolescents show interest in the activities and

wellbeing of others, continue with conversations, and organize meetings and events. *“I feel that, since I can communicate often with the people I love, I don’t lose contact with them. So I still have a conversation topic when I see them in person, I know what to talk about because we still have a relationship even we are far away.”*

Further, some interviewees state that social media has allowed them to find common interests with people they did not get along with before, helping to become friends with them. *“For example there is a girl that I don’t like, I can’t get along with her, maybe we even hate each other. But suddenly we start talking to each other on social media, and in real life we can continue with the conversation and forget that we didn’t get along before and start getting along.”*

**Fear of Missing Out:** For some participants not being always in social media is not a concern, and their use of social media is limited to the spare time they have after completing their real life activities. *“I just feel that you can do much more outside of social media than what you can do in these”; “I’m not addicted to social media. I use them mostly when I’m bored.”*

However, for others using actively social media is a priority. Some even mention that they are always online. *“My friends and I don’t miss much because we are always connected.”* This has led to a low (or nonexistent in some cases) restriction of their social media use, being off of social media mostly in academic environments where the use of mobile devices is not allowed. *“At school they take our phones right before classes... and give them back at 3:00 pm.”* The most active users state that they feel they can control their social media use and know when to stop. *“When we are in something important, we know that we shouldn’t use our phones... Then we always know the limit.”*

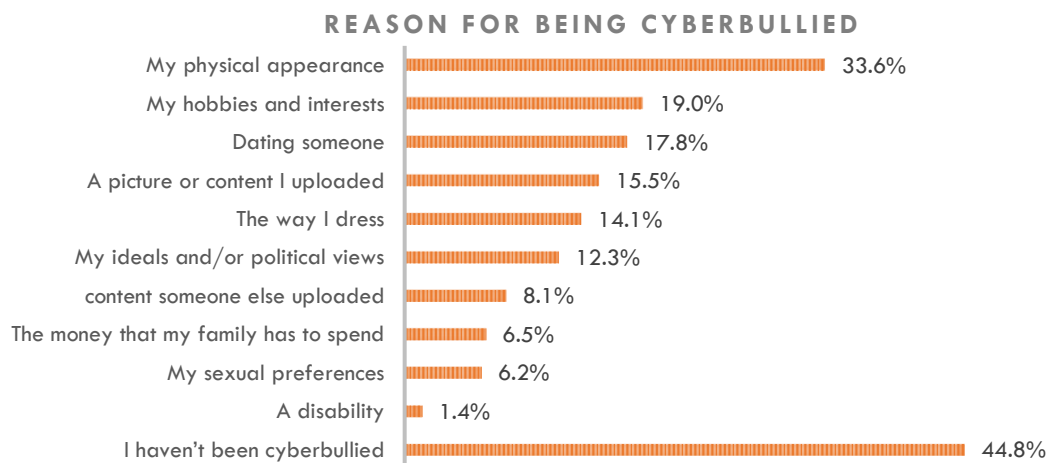
Those who actively limit their use of social media report strategies such as: uninstalling social media apps from their phones, allowing themselves to only use their phones for a certain period of time per day, choosing not to have data in their phones and only connect through their home’s WIFI, or turning off notifications during the night. *“In the settings I disabled all notifications... every night from 9:00 pm to 7:00 am in the morning”; “I sometimes uninstall Apps or hide them because that way I don’t have the temptation of opening the app when I see a notification.”*

Participants mentioned that their FoMO is linked to aspects such as: losing contact with friends; not responding to private messages; not being aware of the latest events or activities of their friend or contacts; missing the latest video of their favorite artists or Youtuber; missing the latest news, not knowing the trending memes, among others. It seems like, by not being constantly updated on these contents, they were at risk of ceasing to exist and of becoming invisible to others. *“Sometimes viral videos about funny things become a trend and everyone is talking about it... So when someone hasn’t used social media for a while, he or she doesn’t understand what people are talking about”; “[If I don’t use social media for a long time] People would stop talking to me. I would lose contact with a lot of people with whom I get along very well ... they would lose interest and eventually wouldn’t talk to me anymore.”*

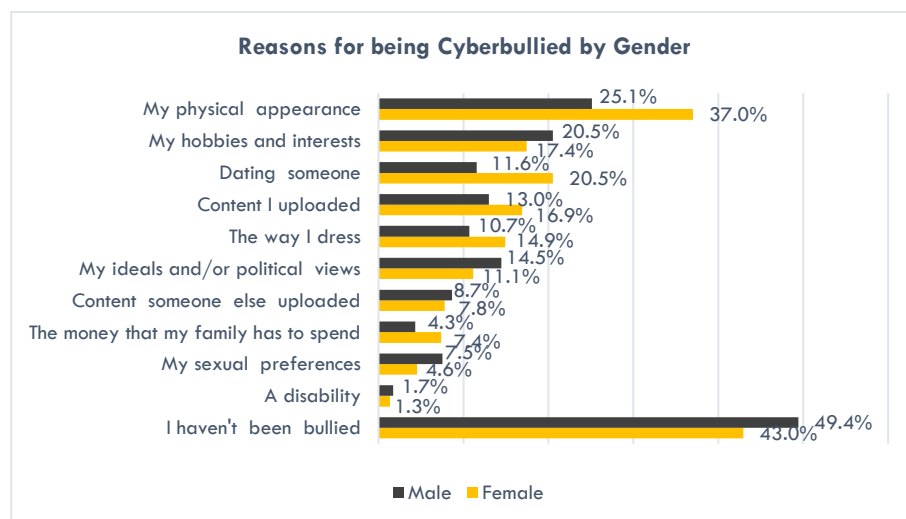
### 3.4. Understanding Gender Differences in the use of Social Media amongst Adolescents and its Impact on Mental Health [Study Objective 3]

**KEY FINDING: Bullying and cyberbullying is experienced differently by girls and boys**

Also referred to as Cyber Bullying Victimization (CBV), cyberbullying refers to using the Internet, cell phones or other devices to send or post text messages or images intended to hurt or embarrass another person. Accordingly, cyber-bullying is different from “traditional” bullying as victims of cyberbullying may not know the identity of their bully and cyber-bullying can happen at any time. Additionally, the bullied person may not even know why he or she is bullied. Some of the reasons cited by the adolescents for cyberbullying included physical appearance, hobbies and interests, choice of girlfriend or boyfriend, and an uploaded picture, in that order. Notably, 44.8% of the respondents had not experienced bullying.



The difference in the reasons for experiencing cyberbullying as expressed by boys and girls is as shown in the graph to the right. It clearly shows distinct differences between the triggers of cyberbullying between boys and girls. **It shows that boys are mostly cyberbullied based on their hobbies, political views and sexual preferences, while girls are mostly cyberbullied based on their physical appearance, dating someone, content uploaded, and dress code.** More girls (49.4%) had experienced cyberbullying than boys (43%).



43.7% of female respondents and 42.1% of the male respondents indicated that they had seen peers join in contributing to cruelty against each other on social media. All respondents knew of at least one case of cyberbullying in their school *“There’s a new kid in my class and my classmates bully him... they call him ugly, and make jokes about him... It started in person and then they made an Instagram account for the class to post only photos of him without his permission”*. Also, some reported having been victims of cyberbullying themselves, either through the creation of fake profiles, offensive comments in photos or posts, groups created with the intention of making fun or denigrating them, or the distribution of private content without permission. *“I changed schools and my new classmates had a Facebook group in which they started sharing memes and stuff like that trying to offend me... and they made me feel really bad.”*

25% of the girls reported that they had been cyberbullied by someone they didn’t know, compared to 13.7% reported by the boys. This evidence means **that girls (than boys) are more likely to be cyberbullied by people unknown to them**. One of the girls reported being the victim of harassment by adult men from other countries who demanded intimate photos of her when she was younger. *“They harassed me and asked me for photos... A super strong circle of sexual harassment was established... They were three people from other countries... I blocked them and many of them made fake profiles to continue harassing me... I had to close my Facebook for 3 months. Then I had to change my [social media] name so they wouldn’t find me.”*

The girls were equally more susceptible to abuse by someone known to them (23.9%), than the boys (11.8%).

Likewise, the respondents recognized that it was not uncommon to find situations like; sharing of intimate photo or video without permission, making fun of a person due to his/her physical characteristics, sharing fake information to defame or denigrate someone, creating memes using photos of a person without permission to make fun or humiliate him/her, among others. *“That makes me think about how a person can be capable of damaging another from his computer, from the comfort of his or her home with a single word or a click. So, that makes me a little sad because it makes you think that we are all vulnerable to that.”* Notably 15.9% of the girls reported that threats carried out through social media are carried out in real life, yet only 11% of the boys had similar opinion.

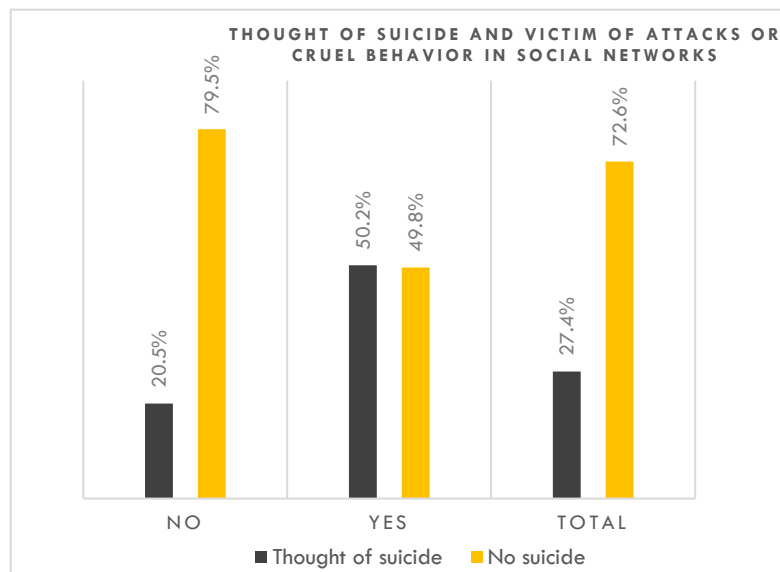
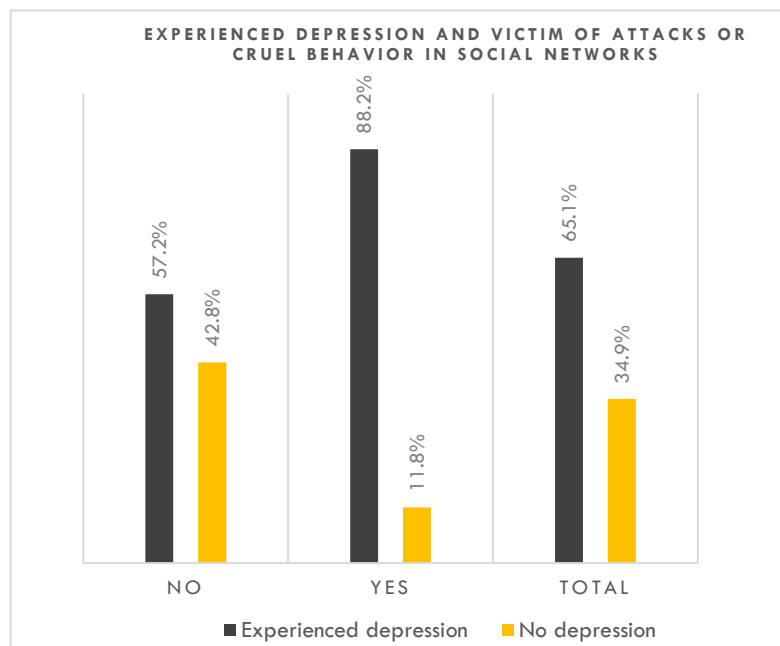
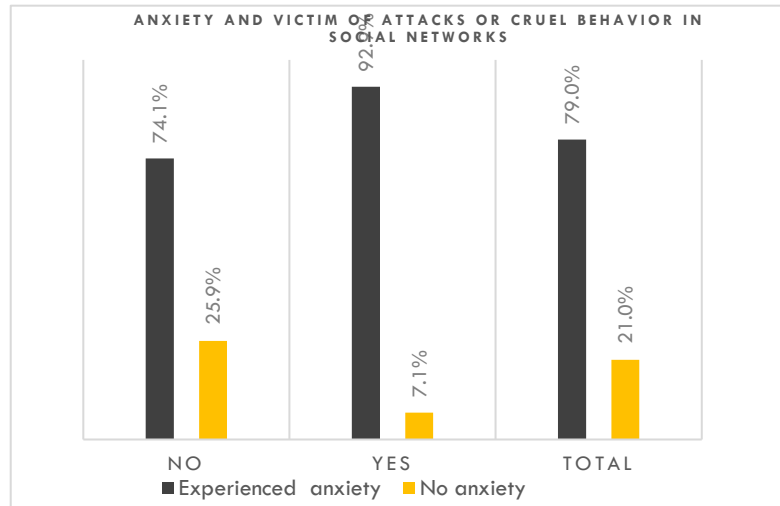
Despite identifying these negative aspects of social media use, it should be noted that the respondents remain active social media users. Even after isolated cases of harassment, some female interviewees reopened their profiles on social media, after taking measures such as changing their name or eliminating unknown people from their network. **It is apparent that staying connected with others (mostly peers) is often more important than all the negative aspects.**

**There were significant gender differences in the experience of cyberbullying. For example, 25.9% of the females reported to have experienced cruelty or mean behaviour online, compared to 18.4% reported by their male counterparts.** Girls were more prone to be victims of harassment than boys, particularly by adult men. In these cases, some female interviewees were contacted through explicit messages, asked for personal information or intimate photos. *“There are men who start telling you: ‘I’d like to see you in my bed’ and explicit things like that.”*

In relation to the mental health indicators, there were significant differences between those who had experienced cyberbullying, and those who hadn't. For example, about 93% of those who had experienced cyberbullying reported incidences of anxiety, compared to only 74% reported by those who had not experienced cyberbullying. Similarly, 88.2% of those who had experienced cyberbullying reported incidences of depression compared to 57.2% reported by those who had not experienced Cyberbullying.

With regards to thoughts of suicide, 50.2% of those who had experienced cyberbullying reported having had thoughts of suicide compared to 20.5% reported by those who had not experienced Cyberbullying. Notably, looking at the spectrum of cyberbullying and thought of suicide, it is evident that an authoritative majority of the respondents (79.5%), of those without prior experience of cyberbullying had not experienced any thoughts of suicide. **These point to a clear relationship between cyberbullying and the thought of suicide amongst adolescents in Latin America, but does not take away the need to further interrogate the role of any underlying psychopathological issues.**

The reported prevalence rates of cyber-victimization experiences varied across countries and age groups. Part of this variation is likely due to cultural diversities or could be due to different definitions of cyber-bullying. However, the impact of cyber-bullying on rates of depression, anxiety and self-esteem are well established scientifically but this study further indicates that a short duration of exposure to cruelty on social media has severe effects on mental symptoms. In other words, **CBV is indeed associated with adverse mental health, but whether CBV causes adverse mental health remains unclear because interpretations rely mainly on cross-sectional evidence from this study - which prevents any causal interpretation.**




62.9% of the adolescents felt they knew how to deal with cyberbullying. This considerably high number, could be due to the fact that they have learnt to anticipate some form of online harassment, and subsequently developed some mental psychological resilience towards cyberbullying.

Building on the evidence, **preventative and treatment strategies are most likely to be beneficial to the adolescents when they address society level issues (such as objectification of girls, racism, etc), and simultaneously adopt individual approaches that tackle risky online behaviours and potential pre-existing vulnerabilities.**

Further investigation is necessary to establish the consequences of cyberbullying on mental health. The quantification of the precise prevalence of cyberbullying amongst adolescents in Latin America remains uncertain. **Just like in this study, evidence on cyberbullying is often limited by its reliance on studies that assess the short-term consequences of cyberbullying – consequently limiting the existing understanding of the effects of cyberbullying at different life stages and over the longer term.**

Further research would also help to **clarify whether cyberbullying is linked to specific mental health outcomes or whether it represents a generic risk factor for psychopathology** in the delivery of mental health care/treatment. Put differently, there is need for additional research using causally informative designs in conjunction with experimental studies on the probable and comparable role of offline and online experiences in contributing to mental illness among adolescents in Latin America.

A man in profile, wearing handcuffs, is looking at a computer monitor. The scene is dimly lit with a blue tint. The monitor is on the left, and the man is on the right. A large, semi-transparent blue circle is overlaid on the bottom right of the image, containing the text.

## DISCUSSIONS & **CONCLUSION**

## 4.1. Adolescence, Social Media and Mental Health

Although the research on the effects of social media usage on mental health among Adolescents in Latin America is embryonic, this study highlights several themes which should further be examined in future studies.

**THE FIRST**, of these relates to **the use of social media for mental health support**: The study established that up to 77% of adolescents in Chile and El-Salvador use social media as a source of emotional support and to find out more about mental health. It would thus be useful to further understand the intricate patterns of social media use amongst the adolescents, and how mental health interventions can be designed to utilize these social media platforms. In deed, the relationship between social media usage and mental health is enormously complex, and even though the study has effectively established that social media is a driver of both positive and negative mental health – on varied degrees, the intersection between social media use, and the social, economic and cultural contexts remain unclear. The measure of their individual dominance as precipitating factors of mental illness equally remain unclear. Emerging from the literature review, the level of emotional support drawn from average social media usage may depend on other salient factors as school, home or peer experience. Correlations from the quantitative data gathered indicate well established relationships between emotional support and such contextual experiences.

**THE SECOND**, is that **an adolescent's life context matters**: It is true that children who have negative experiences in school, with their peers, or at home, are a lot more likely to report various mental health issues. However, the study established that social media use seems mostly unrelated as a factor that explains mental health issues. The study further suggests that individuals with pre-existing psychosocial symptoms, such as anxiety and depression, are likely to use social media in a way that seeks to foster a greater sense of belonging, though often with the unintended consequence of exacerbating pre-existing psychosocial issues. Such is to say that there are clear indications from the study that the life context of the adolescent is a stronger determinant of mental health. However, the influence of the use of social media to explain mental health issues seemed insignificant as no unidirectional correlations could be established.

Based on the realities of contextual experience at school, home or amongst peers, and based on the consistency of observable difference between heavy and non-social media users, this study reasonably concludes that the difference in heavy/non-heavy social media may not be the single most factor that affects mental health proxy indicators, but certainly remains a catalytic/risk factor. Further, the available data confirms that heavy usage and offline experience influences the mental health of adolescents in Latin America. In which case, an intervention to improve the mental health/well-being of adolescents in the region need to be modelled around strengthening psychosocial support systems at home, school and amongst peers, and towards the desire to reduce exposure to social media – or the consciousness of the positive/responsible use of social media.

On the other hand, adolescents who experience greater issues related to their self-esteem will possibly use social media in a manner that is injurious to their mental health. Moreover, the paucity of institutional support for adolescents may also worsen pre-existing mental health

challenges such as anxiety and depression, with adolescents turning to risky usages of social media in order to solve problems that should in fact be dealt with by parents and institutions. Notably, the possibility that adolescents with pre-existing psychosocial challenges can be further harmed through social media usage should be treated seriously, considering social media can equally serve as one of beneficial tools to address the challenges which adolescents encounter.

Lastly, only a total of 28.8% of the respondents had sought some form of counselling support from teacher or other member of community – which raises the question as to whether there are adequate capacities with their social support structures (home, school, peers) to provide them with counselling or if they are even aware such support exists. In a school environment, such capacity would involve the availability of teachers who are appropriately trained. Presence of counselling services will support social buffering and cushion their emotional challenges/pain from transitioning to mental illnesses and thoughts of suicide.

**THE THIRD**, is that **bullying, and cyberbullying is experienced differently by girls and boys**; There were significant gender differences in the experience of cyberbullying. The study established that girls are more prone to be victims of cyberbullying than boys. In relation to the mental health indicators, there were significant differences between those who had experienced cyberbullying, and those who hadn't. For example, about 93% of those who had experienced cyberbullying reported incidences of anxiety, compared to only 74% reported by those who had not experienced cyberbullying. Similarly, 88.2% of those who had experienced cyberbullying reported incidences of depression compared to 57.2% reported by those who had not experienced Cyberbullying. These point to a clear relationship between cyberbullying and the mental health indicators amongst adolescents in Latin America, but does not take away the need to further interrogate the role of any underlying psychopathological issues.

Further investigation is necessary to establish the consequences of cyberbullying on mental health. The quantification of the precise prevalence of cyberbullying amongst adolescents in Latin America remains uncertain. Just like in this study, evidence on cyberbullying is often limited by its reliance on studies that assess the short-term consequences of cyberbullying – consequently limiting the existing understanding of the effects of cyberbullying at different life stages and over the longer term. Further research would also help to clarify whether cyberbullying is linked to specific mental health outcomes or whether it represents a generic risk factor for psychopathology in the delivery of mental health care/treatment.

## 4.2. Gender Disparities

Gender differences in adolescents' social media experiences across the three countries were evident in the interviews, with girls being the most affected by the usage of these platforms, as well as by cyberbullying and sexting. The literature review highlighted the research of Orben and Dunbar (2017) which indicates that social media does not revolutionize interpersonal communication modes. Rather, "passive consumption and offline communication influence relationship development via a similar pathway. This supports the view that there is no fundamental difference in how humans process interactions in those two environments" (Orben and Dunbar, 2017).

In both offline and online environments, self-disclosure is a vital component of the strengthening of interpersonal relationships, self-disclosure more likely to occur with individuals that have higher self-esteem and therefore are more open to dialogue with others. Not all self-disclosure

is beneficial for social media users; however, researchers suggest that self-disclosure is interpreted most positively by others when it is *positive*, and that the amount of self-disclosure in offline and online communications must be carefully reflected on (for oversharing is unlikely to create feelings of intimacy whether in dyadic relationships or in online instances of passive consumption). Thus, the quantity and quality of self-disclosure through social media are likely to impact adolescents' interpersonal relationships, and in turn their mental health. The findings across the three countries can be analyzed through the lens of the above considerations related to self-disclosure and interpersonal relationships.

In their discussion paper, John et al (2017) state that adolescence is a “critical period in the development of gender attitudes and behaviours” as well as in the internalization of gender norms. According to these authors, citing Ryle (2011), gender norms refer to the implicit and explicit rules that dictate what is considered as an appropriate masculine or feminine behavior in a certain culture. Thus, social media could be seen as an environment in which gender values and norms are recreated and transmitted (John, Stoebenau, Ritter, Edmeades, & Balvin, 2017). The findings of this study show that the gender norms from each culture permeate online interactions, which is evident in the expectations regarding female and male behaviors in social media. However, it is important to consider that this is a multidirectional relationship in which social media can in turn be an engine for changing those gender norms and values, by giving adolescents the opportunity to be in contact with global information that could mobilize local gender norms. An example of this is the feminist movement in Chile, which was mentioned as a trend in social media by interviewees, and led them to think critically about gender differences in their society. Also, based on social media interactions, some female interviewees from El Salvador questioned traditional values that were unfair to women such as judging female adolescents for “partying too much” or “showing more than what is considered adequate”.

The findings of this study show sex differences in mental health proxies such as body image. Although it was found that social media use impacts adolescents' body image regardless of gender (Rousseau, Eggermont, & Frison, 2017), body image is the mental health aspect in which more gender differences arise, being girls the most affected (Marengo, Longobardi, Fabris, & Settanni, 2018). Gender norms regarding appearance and body surveillance are more demanding for girls in both offline and online contexts. Interviewees consider that girls have more pressure to fit society's beauty standards (Trekels, Ward, & Eggermont, 2018), in order to be accepted by their peers. In other words, girls should always look “pretty and perfect” (Mascheroni & et al, 2015), while boys have a broader permission to not comply with aesthetic stereotypes, and are less judged by this (Albury, 2015). In particular, body weight is the aspect of self-image with greater relevance for girls, as well as one of the aspects that generates more comparisons in social media (Tiggerman and Slater, 2013). In the interviews it was found that some of the interviewees' female friends and acquaintances had incurred into dieting and eating disorders based on the inconformity with their bodies that emerged from social media comparisons (Tiggermann & Slater, 2015).

According to their online experiences, interviewees perceive that girls show more online cruelty than boys in social media, which supports the findings of Weber and Pelfrey (2014). Girls are considered to be more likely to harm other girls through rumours, the disclosure of secrets, and hurtful comments. In the present study, beauty, style, thinness, and reputation were the main

topics used by girls to criticize or cyberbully other girls, having important effects on their self-esteem (Sokal, 2012).

However, it is important to consider that other quantitative studies (Festl & Quandt, 2016; Weber & Pelfrey, 2014; Gupta & Heilman, 2018) have shown that male adolescents have a higher tendency of incurring in online cruelty.

Additionally, both boys and girls in our interviews consider that girls are more sensitive and mention that they tend to be emotionally affected more easily than boys. Thus, girls give more importance to negative comments regarding how their bodies look, their reputation, or what they share in general. Interviewees also report that girls are judged to a greater extent in social media. This is consistent with the findings of Ohannessian et al. (2017) who reference Kessler et al. and Merikangas et al. in noting that "The developmental course of anxiety symptoms may differ between girls and boys. Adolescent girls consistently have been found to have a higher risk of experiencing anxiety disorders." Indeed, "Adolescence represents a period of substantial vulnerability for internalizing problems, particularly for girls" (Ohannessian et al., 2017).

Sexting, image-based abuse, and cyberbullying can harm girls' reputations easier than boys'. This is clearly represented in the interviews across the three countries, in which girls are disproportionately identified as victims of image-based abuse. Both the interviews and wider literature review unambiguously indicate that girls are harshly judged and labeled as promiscuous when a sexual or intimate content is shared through social media (Albury, 2015; Mascheroni & et al, 2015; Ringrose, Gill, Livingstone, & Harvey, 2012; UNICEF, 2017). Meanwhile, boys who participate in a sexual or intimate content with a girl often receive positive reinforcement that strengthens their manly image (Ringrose, Gill, Livingstone, & Harvey, 2012). Such negative reputations of promiscuity can harm a girl's general wellbeing as well as her interactions in contexts such as school. In a study conducted in Italy, UK and Spain, Mascheroni & et al (2015) find that boys tend to sanction girls for sharing sexy photos and label them as "that kind of girl," while for girls sharing sexy personal images are considered a way to be accepted by others. Also, girls who share this type of content are usually seeking to flirt or please intimate partners who they trust (Albury, 2015).

In these examples, it may be that a desire to achieve interpersonal closeness through self-disclosure is severely compromised through the unique pace of communication and sharing that social media facilitates. As noted in the literature review, individuals with low levels of self-esteem are unlikely to benefit from self-disclosure in their social media usage, particularly in comparison to peers with high levels of self-esteem, whose posts are more likely to be positive. According to Forest and Wood (2012), "... people with low self-esteem perceive Facebook as a safe, appealing place for self-disclosure and that they spend as much (or more) time using Facebook as do people with high self-esteem. The comfort that people with low self-esteem feel in this low-risk environment could make it a great place for them to enrich their relationships by sharing things they otherwise would not. However, people with low self-esteem tend to make updates that are higher in negativity and lower in positivity than those of people with high self-esteem, and they are liked less than people with high self-esteem as a result."

It should not be of much surprise, then, that interviewees mention that girls have more societal restrictions placed on them, and should be more careful with the contents they share in social media. Usually, boys can share photos or videos showing parts of their body (chest, legs, etc) without being attacked or harassed, whereas girls who show more than what is considered appropriate (i.e. photos of them in swimsuits, or with a deep cleavage) are more prone to being labelled and harassed. Based on her study with Australian adolescents, Albury (2015) states that boys are more free to show their bodies without social condemnation, while girls' photos and bodies attract more adult and social attention. The study findings are therefore consistent with existing literature regarding body image and gender-related societal restrictions.

Regarding this last point, interviewees mention that it is common for adolescents and society in general to make comments and share opinions about female adolescents' bodies (Albury, 2015; Mascheroni & et al, 2015). For some, it is outrageous that many others feel entitled to give their opinion and judge girls based on the way their bodies look, the body parts they show and their body weight. This phenomenon has been studied in other contexts, such as in sports. In a study conducted by Sarah Grieses of Cambridge University Press, millions of words are analyzed regarding how men and women are described in the Olympics. This study finds that the language used to describe women is strongly linked to their physical appearance, rather than to their sporting skills (Cambridge University Press, 2016).

Lastly, in the interviews it was found that many of the terms that adolescents use to offend others in social media are linked to feminine attributes used in derogatory ways. Thus, although many of the insults are related to body weight, some insults are based on words that humiliate women, associate feminine characteristics with something derogatory, or treat women as objects. Similarly, the interviews suggest that when boys do not fit in with the masculinity standards set by society and validated by their peers, they are often prone to being cyberbullied by other boys who frequently use feminine attributes to denigrate him. In relation to this, a study conducted in Brazil by Baeré et al. (2015) finds that homosexual men in Brazil consider particularly offensive insults that denote passivity or behaviors associated with feminine traits. However, there is little literature in the Latin American context that explores the use of pejorative terminology linked to feminine attributes in social media. This raises the possibility of studying gender violence in social media reflected in the use of language among adolescents in the region.

**The findings of this study show that gender norms permeate online interactions, which is evident in the expectations regarding female and male behaviors in social media.** However, it is important to consider that this is a multidirectional relationship in which social media can in turn be an engine for changing those gender norms and values. As hypothesized, gender differences in experiences with social media are evident in the results of this study. Social media negative impacts in mental health proxies such as body image are more evident in girls. Girls are generally considered to be more prone to incur in online cruelty, criticizing or cyberbullying other girls based on beauty, thinness, style, romantic partner and/or reputation. However, adolescent interviewees also indicate that girls are more sensitive, and may be emotionally hurt more easily. It is common for adolescents and society in general to make comments, and share opinions, about female adolescents' bodies. Additionally, girls have more restrictions placed on them and are expected to be more careful with the contents they share in social media. When

a sexual or intimate content is shared, girls are harshly judged, labeled as promiscuous and their reputation is severely affected. These findings are consistent with the embryonic and yet growing body of literature in the realm of social media and experimental psychology, particularly in terms of the relationship between the operation of psychological pathways in offline and online interpersonal communications.

Girls face heightened expectations regarding behavior and greater awareness and criticism when they use social media negatively. Girls may also unwittingly use social media in manners that are intended to strengthen interpersonal ties and yet result in negative personal consequences. Lastly, in the interviews it is found that some of the terms that adolescents use to offend others in social media are linked to feminine attributes used in a derogatory manner. Since the information available about the usage of gender-based language in cyberbullying is limited, this opens the possibility of further study related to gender violence and language in social media.

### 4.3. Conclusion

This study explored the impact of social media use on the mental health of adolescents from Chile, El Salvador, and Jamaica, focusing specifically on gender differences in social media experiences and mental health outcomes. **Our findings demonstrate that social media use brings positive and negative effects for both boys and girls; however, girls are more negatively affected by important dynamics currently present in social media.**

Social media offers numerous opportunities for expression, communication and information-gathering, which has high value for adolescents and is fundamental when interacting with peers. Continuous interaction and communication with friends generates a feeling of strengthened bonds, which also translates to real-life relationships in spite of distance. Moreover, social media offers a space in which adolescents can relax, have fun, and remain apprised of the latest news, trends, events and activities of their friends and acquaintances. Through constant updates, adolescents come to feel that they have more tools for communicating with others and are more easily able to gain others' approval (through "likes" on social media platforms).

Facets of mental health, such as emotional support, sense of belonging, self-expression, self-identity, and self-esteem can be positively influenced by social media, as is clear in the interviews. Adolescents highlight that they can receive emotional support from their friends through social media when they need it, regardless of the distance or the time of the day. Also, since it is possible for adolescents to find like-minded people through social media, they are more easily able to form interest-based communities with peers, which enhances the sense of belonging and a sense of appreciation within a group. We have seen this in interviews through stories of social-media based communication related to student advocacy, political organizing and non-profit projects related to female empowerment. Additionally, adolescents are constantly discovering in social media tools contents and information which enable the expression of their feelings and thoughts, and allow them to tell the world who they are. Thus, social media offers necessary elements that can help them define and build their identity, interests and worldviews. From this basis, adolescents may create profiles that selectively portray the aspects they want to highlight about themselves.

Regarding self-esteem, the findings of this study confirm that social media can have both positive and negative effects depending on the feedback that adolescents receive from peers. For some, social media is a source of positive comments and acceptance, which has an important role in their self-esteem enhancement. For others, constant criticism, teasing, lack of recognition, or negative comments in social media use individually and collectively bring about a decrease in their self-esteem. The findings of this study suggest that the influence of social media on adolescents' self-esteem is closely linked to the feedback they receive and the comparisons they make about body image, this being particularly evident in girls. The interviews demonstrate that without support of family, friends or teachers, adolescents risk cultivating a largely comparative sense of self, in which identity becomes grounded in comparison to others usually on questions related to wealth, image and status. Interviewees acknowledge that the norms and values subject to comparison may be superficial, but nevertheless experience difficulty in extricating themselves from such types of comparison.

Indeed, adolescents are aware that social media also represents risks and can have negative effects on their well-being. The proliferation of fake profiles ("Rinsta" and "Finsta"); the presence of disturbing information; the risks to privacy, and the dissemination of unwanted contents, are all mentioned in the interviews. Moreover, cyberbullying, harassment, sexting and image-based abuse are highlighted as some of adolescents' main complaints regarding social media. Most of the adolescents that participated in the interviews report that they are aware of cyberbullying cases at their schools; some have been victims of cyberbullying themselves.

Adolescents mention as the most common ways of cyberbullying the creation of explicit contents; groups or pages to denigrate someone; the disclosure of secrets and private information; the dissemination of rumours and fake information; the creation of hurtful "memes," and the use of offensive comments in public and private chats. The experience of harassment is less common among the adolescents interviewed, but it is clear that harassment disproportionately impacts girls, with negative impacts in their feeling of personal safety. Image-based abuse and sexting are especially mentioned in the older adolescent segment. The findings of this study show that this affects girls' reputations much more than it does with boys, and that it is very difficult to recover (for girls in particular—though boys also suffer) from such trauma.

The findings of this study suggest that social media could have a negative impact on mental health aspects such as: body image, self-esteem, sleep quality, fear of missing out (FoMO) and depression. The use of social media has an important role in shaping how adolescents see their body and appearance, and this is particularly so in the case of girls. Girls not only experience more pressure to adhere to society's beauty standards in order to be accepted by their peers, but are also more prone to receive comments about their bodies and to be negatively affected by these. In the interviews, body weight was the aspect of self-image with greatest relevance for girls—and for all kinds of body types.

In addition, our findings indicate that sleep is generally affected in quality and quantity by social media alerts or messages. Many interviewees spend several hours in bed on social media before going to sleep, hence diminishing the quality of their performance in other parts of life through interrupted sleep patterns. Regarding FoMO, our findings suggest that, when

adolescents cannot be constantly updated on contents considered relevant by their peers, they tend to feel at risk of becoming invisible to others and thus of losing important social bonds. In the interviews, the findings regarding depression are limited, with only several girls reporting episodes of depression onset by cyberbullying or harassment on social media. The experiences of friends, colleagues and acquaintances, however, is often discussed in interviews, in which cyberbullying is reported to lead adolescents to depression or even to consider committing suicide in some cases.

As hypothesized, gender differences in experiences with social media are evident in the results of this study. Girls are generally considered to be more cruel in social media, criticizing or cyberbullying other girls based on beauty, thinness, style, romantic partner and/or reputation. However, adolescent interviewees also indicate that girls are more sensitive, and may be emotionally hurt more easily. It is common for adolescents and society in general to make comments, and share opinions, about female adolescents' bodies. Additionally, girls have more restrictions placed on them and are expected to be more careful with the contents they share in social media. When a sexual or intimate content is shared, girls are harshly judged, labeled as promiscuous and their reputation is severely affected. These findings are consistent with the embryonic and yet growing body of literature in the realm of social media and experimental psychology, particularly in terms of the relationship between the operation of psychological pathways in offline and online interpersonal communications.

The cards therefore appear to be stacked against girls on social media, with heightened expectations regarding behavior and greater awareness and criticism when girls use social media negatively. Girls may also unwittingly use social media in manners that are intended to strengthen interpersonal ties and yet result in horrific personal consequences. Lastly, in the interviews it is found that many of the terms that adolescents use to offend others in social media are linked to feminine attributes used in a derogatory manner. Since the information available about the use of gender-based language in cyberbullying is limited, this opens the possibility of further study related to gender violence and language in social media .

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