SETTING THE AGENDA FOR FUTURE RESEARCH AND ANALYSIS

Supplement: Additional measures from the reviewed studies

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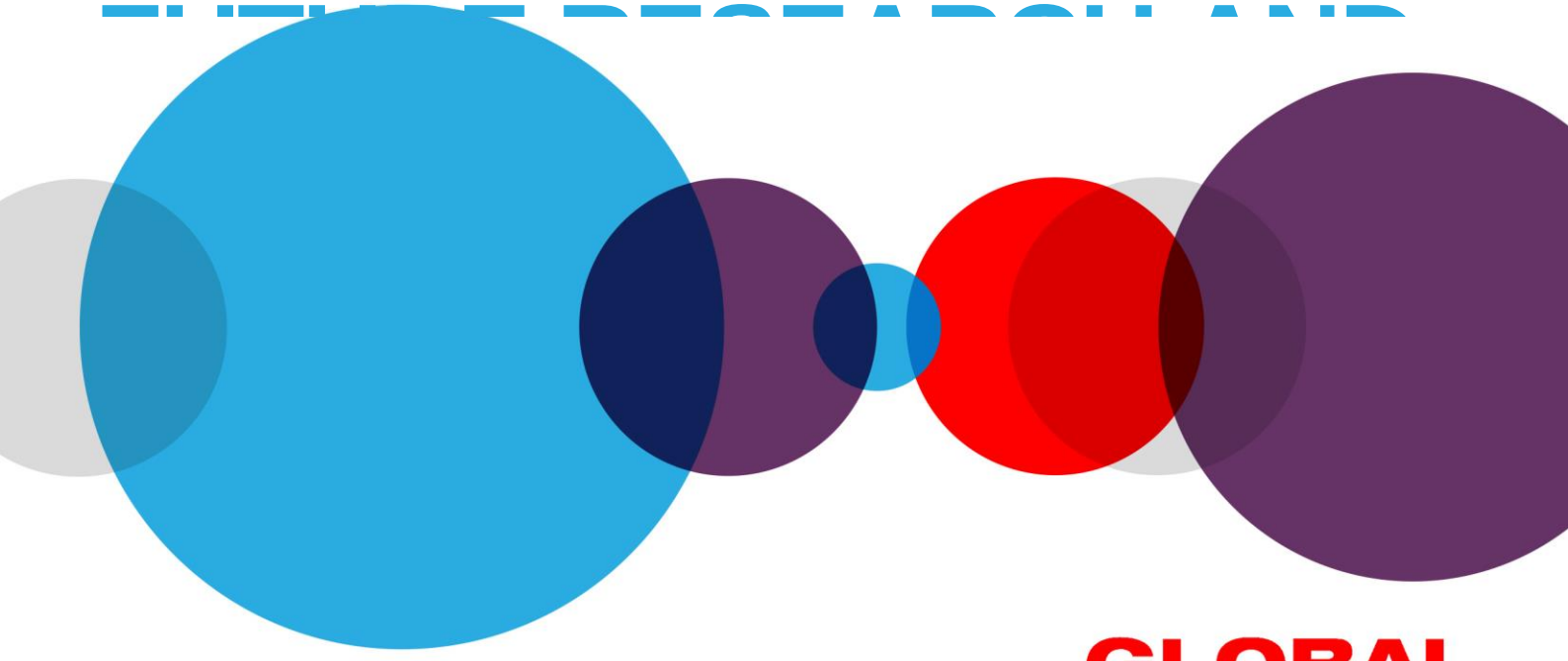

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GLOBAL KIDS ONLINE

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AIM OF THIS REPORT SUPPLEMENT

This report supplement collates measures found in other studies from the rapid evidence review. These could be used to generate ideas for further research. Before using any of the measures below, please, ensure that you have obtained all necessary permissions, where relevant.

MEASURES FROM THE REVIEWED STUDIES

Child identity and well-being

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Psychological well-being** (Ryff, 1989), amended from 10-scale to match other Global Kids Online scales:

How true is this for you?
Answer for each option
Not true for me (1), A bit true for me (2), Mostly true for me (3), Very true for me (4)
I like being the way I am
I am good at managing my daily responsibilities
People are generally friendly towards me
I have enough choice about how I spend my time
I feel that I am learning a lot at the moment
I feel positive about my future

- **Depression scale** (Kilburn et al, 2018), UNICEF has translated into 40 languages (http://www.isciweb.org/), modified answer options based on feedback from UNICEF suggesting the response scale is too complex and also unbalanced in not having 'never':

Now I want to ask you some questions about your emotions and wellbeing. In the past 7 days, how often:

Answer for each option

Never (1), 1-2 days (2), 3-4 days (3), 5-6 days (4), Every day (5)

a. Did you sleep well
b. Were you happy
c. Did you have trouble concentrating?
d. Did you feel hopeful about the future
e. Did you feel that everything you did was an effort
f. Did you feel lonely?
g. Did you feel depressed?
h. Did you feel that you could not motivate yourself to do the things you had to do?
i. Were you bothered by things that don't usually bother you?
j. Did you feel fearful?

- **Self-harm** (Millennium Cohort Study Sweep 6: Young Person Questionnaire, 2016 [https://cls.ucl.ac.uk/wp-content/uploads/2017/12/MCS6-Young-Person-Questionnaire.pdf])

In the past year have you hurt yourself on purpose in any way?

1. Yes
2. No

- **Self-esteem scale** (Understanding Society, http://doi.org/10.5255/UKDA-SN-6614-12)

Please say whether you strongly agree, agree, disagree or strongly disagree, that the following statements apply to yourself (scale 1-4).

I feel I have a number of good qualities
I feel that I do not have much to be proud of
I certainly feel useless at times
I am able to do things as well as most other people
I am a likeable person
I can usually solve my own problems
All in all, I am inclined to feel i am a failure
At times I feel I am no good at all

- Most researchers use scales for depressive and anxiety symptoms and/or suicidal ideation and attempt to measure children's mental wellbeing. One of the most commonly used depression measures is the **Center for Epidemiologic Studies Depression Scale (CES-D)** for children, which is a 20-item self-report scale designed to measure depressive symptoms during the previous week on a 5-point scale ranging from 1 (none of the time) to 5 (most of the time).

Table 1. Center for CES-D Scale

Circle the number for each statement which best describes how often you felt or behaved this way—DURING THE PAST WEEK

DURING THE PAST WEEK	Rarely or None of the Time (Less than 1 Day)	Some or a Little of the Time (1–2 Days)	Occasionally or a Moderate Amount of Time (3–4 Days)	Most or All of the Time (3–7 Days)
	Item Weights			
1. I was bothered by things that usually don't bother me	0	1	2	3
2. I did not feel like eating; my appetite was poor	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends	0	1	2	3
4. I felt that I was just as good as other people	3	2	1	0
5. I had trouble keeping my mind on what I was doing	0	1	2	3
6. I felt depressed	0	1	2	3
7. I felt that everything I did was an effort	0	1	2	3
8. I felt hopeful about the future	3	2	1	0
9. I thought my life had been a failure	0	1	2	3
10. I felt fearful	0	1	2	3
11. My sleep was restless	0	1	2	3
12. I was happy	3	2	1	0
13. I talked less than usual	0	1	2	3
14. I felt lonely	0	1	2	3
15. People were unfriendly	0	1	2	3
16. I enjoyed life	3	2	1	0
17. I had crying spells	0	1	2	3
18. I felt sad	0	1	2	3
19. I felt that people disliked me	0	1	2	3
20. I could not get "going"	0	1	2	3

- To measure anxiety, some studies use the **Multidimensional Anxiety Scale for Children (MASC)**, a 39-item scale that tests the severity of anxiety symptoms across four major factors, namely (1) physical symptoms (tense/restless and somatic/autonomic), (2) social anxiety (humiliation/rejection and public performance fears), (3) harm avoidance (perfectionism and anxious coping), and (4) separation anxiety.

- **The Screen for Childhood Anxiety Related Disorders** (SCARED; Birmaher et al. 1999) (Vannucci and McCauley Ohannessian, 2019): assessed adolescents' facets of anxiety disorder symptoms. Adolescents were asked to rate how true 41 statements were for them over the past three months (sample item: "I am nervous"), with responses ranging from 0=not true or hardly ever true to 2=very true or often true. The five SCARED subscales were utilized, which assessed symptoms of a generalized anxiety disorder (9 items), panic disorder (13 items), separation anxiety disorder (8 items), significant school avoidance (4 items), and social anxiety disorder (7 items).

- There is also the combined **Depression Anxiety Stress Scale (DASS-42)**, which measures 42 negative emotional symptoms related to (1) depression (dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest or involvement, anhedonia, and inertia), (2) anxiety (autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect), and (3) stress or tension (difficulty relaxing, nervous arousal, and being easily upset or agitated, irritable or over-reactive, and impatient).

The Warwick–Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.
Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Warwick–Edinburgh Mental Well-being Scale (WEMWBS)

- Taking a different approach, the **Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)** includes fourteen positively worded statements that capture a broad range of positive mental well-being including psychological functioning, cognitive-evaluative dimensions and affective-emotional aspects.
- **Paykel suicide scale** (Lucas-Molina et al., 2018) (PSS; Paykel et al., 1974) This 5-item (yes/no) questionnaire assesses suicidal thoughts and behaviours during the past week, month, year, or a lifetime. Two items address suicidal ideation, two others ask about serious suicidal plans, and one asks about suicidal attempts:

(1) “Have you ever felt that life was not worth living?”

(2) “Have you ever wished you were dead?—for instance, that you could go to sleep and not wake up?”

(3) “Have you ever thought of taking your life, even if you would not really do it?”

(4) “Have you ever reached the point where you seriously considered taking your life or perhaps made plans how you would go about doing it?”

(5) “Have you ever made an attempt to take your life?”

Ratings are scored hierarchically according greatest magnitude of suicidal ideation endorsed.

- **Belongingness to family and friend groups** (Minkkinen et al., 2016)- measured by questions on 5-point scales, namely, “How close do you feel to family/ friends? Please indicate on a scale of 1–5 where 1 = not at all important and 5 = very important.”

- **Social Skills Inventory for Adolescents (IHSA-Del-Prette)** (de Mello et al., 2019). This is a self-report scale with 38 items for adolescents between 12 to 17 years old. It evaluates the adolescents’ social skills repertoire using two indicators (frequency and difficulty) in which they react to social interactions. Covers empathy, self-control, civility, assertiveness, affective approach social adroitness.

- **Multidimensional Life Satisfaction Scale for Adolescents (MLSSA)** (de Mello et al., 2019) by Joice Segabinazi, Claudia Giacomini, Ana Cris-tina Dias, Marco Teixeira, e Denis Moraes (2010), the MLSSA has 52 items, distributed in seven subscales: Family, Self, School, Com-pared Self, Non-Violence, Self-Efficacy, and Friendship. It is a five-point Likert scale and had satisfactory levels of reliability in this study (α = .93). Each subscale has a maximum and minimum score (see Segabinazi et al., 2010), and in each one, the level of satisfaction is correlated to the number of scores obtained.

- **Adolescent Online Reactive Aggressive Behaviour Scale** (Xie and Xie, 2019): this scale, which is based on Zhao and Gao’s (2012) Adolescent Cyber Aggression Scale, is used to assess the degree to which individuals engage in online reactive aggression. Participants are asked to indicate how often they engaged in reactive aggression during the past month when they felt provoked to anger by others on the Internet. The scale comprises five items that are rated from 1 (never) to 5 (all the time). A sample item is “Exclude someone from our network of friends.”

- **Online Anger Scale** (Xie and Xie, 2019): this scale (Dillard & Shen, 2005) involves instructing participants to imagine a scenario where a “netizen” declines to comment on a participant’s status updates on the Internet as much as the participant would have liked, after which they are asked to rate each of four emotions (irritated, angry, annoyed, and aggravated) using a 7-point scale ranging from 1 = I did not feel this emotion to 7 = I strongly felt this emotion. This scale has been used widely in ethnically diverse populations and has been shown to have high reliability and validity (Dillard & Shen, 2005).

- **Digital Self-Harm** (Patchin and Hinduja, 2017): Two items were used to assess youth involvement in digital self-harm: (1) “In my lifetime, I have anonymously posted something online about myself that was mean” and (2) “In my lifetime, I have anonymously cyberbullied myself online.” The response set for these questions was “never,” “once”, “a few times,” and “many times,” where “never” = 0 and “many times” = 4. Responses were dichotomized with no involvement coded as 0, while

any involvement was coded as 1. Respondents were also asked to describe why they engaged in the behaviour(s) via a single open-ended question.

- **Attention-Deficit Hyperactivity Disorder** (George et al., 2018): symptoms measured once daily in the after school diary as the presence (yes/no) of four ADHD symptoms (e.g., "I had a hard time concentrating/focusing," "I felt restless or like I was always on the go"). Daily ADHD symptom measures were created by summing the total number of symptoms across the day.

- **Online Social Support Seeking Scale** (Xie and Xie, 2019). This scale investigates the difference between the number of social support participants provide and the amount they seek online using a 7-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree (Carpenter, 2012). The scale is composed of two subscales: a four-item subscale that measures the number of social support individuals provided and a four-item subscale that measures the amount of social support they sought. The score for seeking social support online was calculated by subtracting the amount they sought from the amount they provided.

- **The Family Conflict Scale** (Vannucci and McCauley Ohannessian, 2019): assess the degree of conflict within adolescents' families. Adolescents were asked to rate the frequency with which family members typically argue, are critical of each other, and yell at each other, with responses ranging from 0=almost never to 4=almost always. A mean total score was generated, with higher scores indicating greater family conflict (range=0–4).

- **Academic performance** (Camerini et al., 2018): children's academic performance is measured with a mean score calculation of end-term school grades obtained for eight subjects 3 months after the student surveys were conducted. Subjects include Italian, French, Maths, Environmental Education, Physical Education, Painting, Creative Arts, and Music. School grades ranged from 1 (very poor) to 6 (very good). Another measure used (Kim et al., 2017) where the participants are asked about their study performance at school in the last 12 months. Self-reported school performance is classified into 5 groups: A (highest); B (middle, high); C (middle); D (middle, low); and E (lowest).

Access

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Telecommunications and social media use** (Harpin et al., 2016): items in this domain were borrowed from the Fostering Healthy Futures survey (Taussig, Culhane, & Hettelman, 2007) which were pilot-tested for face validity with 30 transition-aged former foster care youth. Dichotomous (yes/no) items included: "Do you own a cell phone?"; "If yes, is it a smart phone with Internet?"; "Does your phone get shut-off by the provider?"; "Do you have and unlimited minutes plan?"; "Do you have an unlimited text message plan?"; "Do you access social media sites?", and "Have you ever been threatened or bullied over e-mail or social media sites?" Skip pattern items asked for greater detail about the frequency of mobile phone disconnections, who pays for mobile phone bills, type of mobile service plan, WiFi access sites, reasons for mobile phone use, and type of social media sites.

- **Youths' Persuasive Strategies**. Based on consumer research (Palan & Wilkes, 1997), youths' persuasive strategies to influence their parents' adoption of new technologies were measured with the following question in the parents' survey (Correa, 2016): "When your children want you to buy new technology, what kind of strategies do they use to influence you in favor of the adoption of the new technology?" In the youths' survey, the question and the item's wording were changed accordingly (i.e., When you want your parents or guardians to buy new technology. . .). This question was measured on a scale from 1 (never) to 5 (always). The options were: offer deals (e.g., If you buy this, I will do that; If you buy this, I will pay for part of it); give reasons for why this would be beneficial for the parents, family, or themselves; say everyone else has it; ask for it directly; beg for it; and demand it.

Activities and opportunities

Activities and opportunities

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Online communication frequency** (Cingel et al., 2019): participants are asked how often they communicate with friends and family (1) living in the same country and (2) living in other countries via email, messaging, social networking, video chat, blog, microblog, and photo sharing (e.g., Instagram). Responses are measured on a Likert-type scale anchored by 1 (never) and 5 (very often). A total online communication frequency is calculated by summing all the online communication practices for communicating with individuals in the country and transnationally.

- **Online communication topics** (Cingel et al., 2019): participants report how frequently they talk about the following topics when communicating online with friends or family that live (1) in the United States and (2) in other countries: (a) news about each other, (b) school work, (c) school events, (d) family life, (e) interests or hobbies, (f) jobs or career, (g) news or current events, (h) celebrity news or pop culture, (i) political or social issues (issues important to society like poverty, violence, health and safety, civil rights), and (j) religion. Each item is measured on a 5-point Likert-type scale anchored by “never” and “very often.”

- **Online social connectedness** (Cingel et al., 2019): to assess online social connectedness, students are asked to indicate how much they agree or disagree with nine statements about how socially connected they feel as a result of online experiences.

Measure of Online Social Connectedness

1. I feel I’ve been able to connect with friends and family members in other countries because of my online activities.
2. I feel online activities help me to create different sorts of friendships than I would be able to create otherwise.
3. I feel I’ve gotten to know people from other countries because of my online activities.
4. I’ve had online conversations with people who are very different from the people I spend time with in person.
5. I feel I’ve gotten new perspectives on societal issues because of my online activities.
6. I feel I’ve learned more about events in other countries because of my online activities.
7. I feel I’ve learned more about events in other countries as a result of my family and friends who I see outside of my online activities (reverse coded).
8. I feel that online conversations are not as effective at developing or maintaining relationships as offline conversations (reverse coded).
9. I feel like the Internet lets me explore interests and parts of my identity that I can’t explore with the people I spend time with in person.
10. I feel I’ve been able to express myself (artistically, politically, etc.) with new media and the Internet in ways that I could not otherwise.

- **Information-seeking** (Curry et al., 2016): what did you do the last time you were online, multiple responses (i.e., “choose all that apply”). Response options include: looked for jobs, looked for housing, looked for health care services (doctor, emergency room, hospital), looked for HIV testing services, and looked for STD testing services.

- **Seeking sexual information** (Nikkelen et al., 2019): ‘general online sexual information seeking’ is measured by asking respondents to indicate, in addition to other sources, whether they look for information online (i.e., on websites, social media or apps) when they want to know something about sex (0 = no, 1 = yes). A second outcome variable, ‘consulting interactive user-generated content’ (UGC) measures whether the respondents, in addition to other sources, would consult people online (e.g., via a chat, forum, blog, or vlog) in case they had a problem concerning sex (0 = no, 1 = yes). The third outcome variable measures whether or not respondents had ever visited one of eight Dutch professional websites about sex. Per website, respondents checked whether they had ever visited it or not. A dichotomous score was then created indicating whether or not at least one of the listed websites had been visited (0 = no, 1 = yes).

- **Adolescent Online Reactive Aggressive Behavior Scale** (Xie and Xie, 2019): is used to assess the degree to which individuals engage in online reactive aggression. Participants are asked to indicate how often they engaged in reactive aggression during the past month when they felt provoked to anger by others on the Internet. A sample item is “Exclude someone from our network of friends.”

- **Online Anger Scale (Xie and Xie, 2019)**: This scale (Dillard & Shen, 2005) involves instructing participants to imagine a scenario where a “netizen” declines to comment on a participant’s status updates on the Internet as much as the participant would have liked, after which they are asked to rate each of four emotions (irritated, angry, annoyed, and aggravated)

- **Online Social Support Seeking Scale** (Xie and Xie, 2019): This scale investigates the difference between the number of social support participants provide and the amount they seek online using a 7-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree (Carpenter, 2012). The scale is composed of two subscales: a four-item subscale that measures the number of social support individuals provided and a four-item subscale that measures the amount of social support they sought. The score for seeking social support online was calculated by subtracting the amount they sought from the amount they provided.

- **Appreciation of mobile messaging affordances** (Vanden Abeele et al., 2017):

Estimates manifest indicator variables	β
Affordances	
Anytime–anyplace connectivity	
. . . that I'm accessible everywhere I go*	.82
. . . that I'm accessible at all times*	.82
. . . that I can take my phone everywhere I go*	.80
Private channel	
. . . that I can talk or text to my friends without my parents knowing*	.79
. . . that when I call or text, others can't see what I am doing*	.69
. . . that I can talk or text to a friend without my parents knowing what we're saying*	.76
Controllability	
. . . that I have more time to think about how I phrase something*	.88
. . . that I have more time to think about how I say something	.92
. . . that I have more time to think about what I want to say	.78
Mobile messaging behaviors	
Micro-coordination	
I often text my friends to make practical arrangements	.63
I frequently text my friends to reschedule or change appointments	.62
I often text my friends to let them know when I will arrive	.73
Passing time and chatting	
My friends and I text each other to kill time	.81
I often text my friends when I'm bored	.78
My friends and I often send each other silly texts just for fun	.59
I frequently text my friends, just to share something silly with them	.67
Intimate self-disclosure	
My friends and I send each other texts about our love life	.79
My friends and I talk about our feelings in our text messages	.82
In my texts, I tell my friends about my secrets	.67
In my texts, I tell my friends about my concerns	.71
Friendship maintenance behaviors	
Companionship	
How often do you and your friends go places and do things together?	.74
How often do you spend fun time with your friends?	.59
How frequently do you and your friends play around and have fun?	.57
Emotional support	
How often do you turn to your friends for support with personal problems?	.73
How often do you depend on your friends for help, advice or sympathy?	.75
When upset, how often do you rely on your friends to cheer things up?	.60

Note. All relations between latent constructs and manifest indicators (βs) are significant at $p < .001$.
*Items were self-constructed for this study.

- **Mobile messaging behaviours** (Vanden Abeele et al., 2017): uses 11 items to measure the respondents' mobile messaging behaviour with friends. Each item was measured on a 4-point Likert scale (1=totally disagree; 4=totally agree) including (1) mobile messaging to micro-coordinate activities with friends (3 items e.g., ''I often text with my friends to make practical arrangements''), (2) to chitchat and pass time with friends (4 items; e.g., ''I frequently text my friends to kill time,'' ''I often text my friends just to tell them something silly''), and (3) to self-disclose intimate information (4 items; e.g., ''I often talk about my worries in my texts to friends'').

- **Positive reasons for using online social networking applications** (Badri et al., 2017). Using a scale ranging from 1 (not important) to 5 (extremely important) eight alternatives were given. For example, to make friends, or to keep in touch with family and friends. Using a scale 1 (strongly

disagree) to 5 (strongly agree), students were given eleven different items to address. The items addressed student attitude for using social networking. For example, online social networking keeps me feel connected, I support using social networking technology for learning in school, and online social networking increases my understanding of current issues and news.

- **Adjusted 15-item parasocial interaction scale**: quantifies the strength of one-way emotional connections that audiences experience with their favourite online personae (Bond, 2016). Includes items such as ‘‘I look forward to watching, listening to, or reading about [name of media persona].’’ ‘‘[Name of media persona] would fit in well with my group of friends’’ and ‘‘[Name of media persona] makes me feel comfortable like I am with a friend.’’ Responses to the items were measured on a five-point scale from 1 (strongly disagree) to 5 (strongly agree).

- **Exposure to favourite media personae** (Bond, 2016): participants reported how often they are exposed to their favourite media persona ‘‘on television, in film, in magazines, or on the radio’’ (i.e., traditional screen media) as one item on a scale from 1 (never) to 7 (at least once/day). The same anchor points are then used to measure how often participants check the posts of their favourite media persona on Facebook, Instagram, SnapChat, and Twitter.

- **Emotional health online behaviour assessment (EHOBA)** (De Riggi et al., 2018): an 8-item questionnaire was created by the researchers given the absence of a measure assessing online health behaviour. It comprises two sections, tapping: (a) frequency of Internet use (i.e. how often participants used nine websites [e.g. Facebook, Instagram, Tumblr, YouTube, Wikipedia] rated on a five-point Likert from never to very often) for emotional health reasons, and (b) nature of online activities regarding emotional health (i.e. when you go online for emotional health reasons, what topics are you interested in [e.g. stress, coping, self-injury, anxiety, depression, anger, eating disorders, sadness, other]?) and motivations for engaging in these activities (i.e. Why do you go online for emotional health reasons [e.g. to share my experience/story with others; to get help from a mental health profession, other]?). For the latter section, participants are instructed to check off the items that are applicable to them.

- **Multidimensional Life Satisfaction Scale for Adolescents (MLSSA) (de Mello et al., 2019):** the MLSSA has 52 items, distributed in seven subscales: Family, Self, School, Com-pared Self, Non-Violence, Self-Efficacy, and Friendship. It is a five-point Likert scale and had satisfactory levels of reliability in this study (α = .93). Each subscale has a maximum and minimum score (see Segabinazi et al., 2010), and in each one, the level of satisfaction is correlated to the number of scores obtained.

- **Offline and online friendship quality** (Gluer and Lohaus, 2016): to assess the respondents’ friendship quality perceptions using the McGill Friendship Questionnaire – Respondent’s Affection (MFQ–RA) (Mendelson & Aboud, 1999, 2012). The MFQ–RA is a 15 item context-independent questionnaire to assess feelings and satisfaction with a specific friend (e.g., “I am happy with my friendship with ...”). Friendship quality is rated by a nine-point rating scale ranging from (1) very much disagree to (9) very much agree. Overall friendship Quality (Strength of tie): participants also have to indicate the strength of their friendship ties by a 10-point scale ranging from (1) very strong friendship to (10) very weak friendship.

- **Friendship topics of conversation** (Gluer and Lohaus, 2016): participants are asked about topics they had talked about with their friend during the last few months. The following topics are provided: (a) school (e.g., teachers, grades, peers), (b) school-related contents (e.g., homework, mathematical solutions), (c) Internet (e.g., great websites, funny YouTube videos), (d) parents or siblings, (e) hobbies, (f) personal problems and secrets, and (g) girls or boys whom you like. A five-point response scale was used, ranging from (1) never to (5) very often.

- **Time spent on online social interaction** (Khan et

al., 2016): self-reported measures about their online and offline social networks. Online social networks, or social lives, are operationalised as self-reported time invested in online social interactions and include the following activities: on-line chatting, posting, texting, emailing, and playing online games. A summative score is created.

- **The Adolescent Measure of Empathy and Sympathy (AMES)** This measure consists of 12 statements that measure affective empathy (4 items), cognitive empathy (4 items), and sympathy (4 items). For each statement, respondents indicate how often the behavior occurred on a five-point scale: (1) never, (2) almost never, (3) sometimes, (4) often, and (5) always. Example items are "When a friend is scared, I feel afraid" (affective empathy), "I can tell when someone acts happy, when they actually are not" (cognitive empathy) and "I feel sorry for someone who is treated unfairly" (Sympathy).

E-health

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

- Additional measures from the reviewed studies:

- **Online help-seeking** (Best et al., 2016): This section of the questionnaire included questions on informal and formal online help-seeking (e.g.Have you ever shared personal problems with online friends? or Have you ever used online mental health services ...?). Questions were asked on the participant's knowledge of existing online services and the likelihood of using them. The latter involved a five-point Likert scale (1= Very Unlikely to 5 = Very likely). Scores ranged from 6 to 30, with higher scores denoting more active online searching.

- **Adolescent Media, Health Literacy and Internet Health Information Utilization Scale (AMHIHS)** (Shabi and Oyewusi, 2018): consists of three sections. Section A elicits information on the socio-demographic profile of the respondents, while section B elicits information on the self-reported health literacy competencies (adapted from Britt and Hatten's 2013 e-HEALS scale), which was originally developed by Norman and Skinner (2006). The e-HEALS is an eight-item measure of health literacy which measures consumer knowledge and perceived skill at finding, evaluating, and applying Internet health information to health problems. Section C elicited information on the frequency and purpose of using an Internet health information literacy screening tool.

- Types of health information

Table 4. Purpose of use of Internet health information among in-school adolescents in Osun State.

	I use Internet health information to address my needs in the following areas …	N	Mean	SD	Rank
1	Sexuality issues among adolescents	1,186	2.70	1.09	6
2	Sexually transmitted infections e.g., Gonorrhea, Chlamydia, HIV etc.	1,186	2.72	1.10	5
3	Issues related to pregnancy	1,186	2.62	1.04	9
4	Adolescent contraceptive use	1,186	2.64	1.03	8
5	Abortion procedures and complications	1,186	2.43	1.09	11
6	Healthy diet and other nutritional issues	1,186	3.08	1.04	2
7	Health issues relating to smoking	1,186	2.39	1.08	13
8	Use and abuse of alcoholic beverages	1,186	2.45	1.10	10
9	Menstrual pain and disorders	1,186	2.66	1.09	7
10	Body size, shape, body image or physique	1,186	2.91	1.05	3
11	I regularly use health information retrieved from the Internet to address personal health issues.	1,186	3.09	0.99	1
12	I frequently come across misleading or conflicting health information on the Internet.	1,186	2.43	1.01	11
13	I often upload and communicate validated and relevant health information on the Internet for the benefit of other Internet users.	1,186	2.84	1.03	4

Digital citizenship

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Youth empowerment** (Besenyi et al., 2018) - captured within the pre- and posttest using the Individual Community - Related Empowerment (ICRE) scale shown to have high content validity (Lawshe's formula, CVR = 0.98) and internal consistency (a = 0.86) (50). The scale consists of five dimensions that measure self-efficacy for making changes in the community (7 items, a = 0.88), intention to get involved in the community (4 items, a = 0.83), motivation to get involved in the community (3 items, a = 0.69), participation in community activities (3 items, a = 0.81), and critical awareness of issues in the community (1 item). This scale was assessed using a 5-point Likert scale (1 = Strongly disagree, 5 = Strongly agree) and included items such as "I have the knowledge and skills to influence my community" and "I am willing to get involved in my community."
- **Youth advocacy** (Besenyi et al., 2018) - captured using items from the evaluation of the Youth Engagement and Action for Health (e-Yeah) Program which is found to have moderate to good internal consistency reliability (61). The four dimensions relate to youth advocacy for obesity prevention and included assertiveness for being a leader in the community (3 items, ICCs = 0.474, 0.524, 0.678), perceived sociopolitical control for making changes in the community (4 items, ICCs = 0.311, 1.0), history of advocacy activity (2 items, ICC = 0.154), and knowledge of resources (1 item). This scale is assessed on a 5-point Likert scale (1 = Strongly disagree, 5 = Strongly agree) and included items such as "I can talk with adults about issues I believe in" and "I enjoy participation because I want to have as much say as possible in my school or community." A score for each youth empowerment or youth advocacy dimension is created by averaging items within each subscale.
- **Using mobile technology for participatory action** (Besenyi et al., 2018)

TABLE 4 | Youth's readiness to use mobile technology for participatory action research.

Characteristic	Total *n* = 124	Control *n* = 36	Paper *n* = 43	eCPAT *n* = 45
Mobile technology readiness	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)
I would use a mobile device to find out what's going on in my community	3.4 (1.0)	3.4 (1.3)	3.5 (0.5)	3.4 (1.0)
I would use an app on a mobile device to communicate with school or community leaders	3.5 (1.1)	3.4 (1.3)	3.6 (0.9)	3.3 (1.2)
I would use an app on a mobile device to voice my opinions about changes that should be made in my community	3.5 (1.1)	3.5 (1.3)	3.6 (0.9)	3.3 (1.0)
I would use an app on a mobile device to convince people to make changes in my school or community	3.6 (1.1)	3.6 (1.2)	3.9 (0.7)	3.4 (1.1)

Scores represent means on a 5-point scale (1 = Strongly disagree, 5 = Strongly agree).

- **Political activism**, measures for the incidental and intentional modes of exposure to were derived from Kim and colleagues (2013) and Valeriani and Vaccari (2016) (Heiss et al., 2019). Incidental mode of exposure (α = .81; M = 3.86; SD = 1.81) is measured as whether participants agree that they (i) stumble across news only by accident, (ii) only see political posts when other people from their network post about politics, and (iii) do not seek political information, but sometimes see political information by accident. Intentional mode of exposure (α = .83; M = 2.89; SD = 1.74) is measured as whether participants (i) actively search for political information on SNS, (ii) follow political information sources, and (iii) take care to see political information on their newsfeed.

- **Political engagement** (Heiss et al., 2019) - measured as how often participants engage in certain activities, reaching from "never" to "very often". Online engagement (α = .69; M = 2.71; SD = 1.54) is measured by asking participants how often they (i) write a comment on political issues (e. g., on Facebook), (ii) like or share political issues on social media, and (iii) comment on posts and engage in discussions (Velasquez and LaRose, 2014). Offline engagement (α = .73; M = 2.24; SD = 1.31) was measured by asking how often participants (i) take part in protests and demonstrations, (ii) engage in non-profit or charity work, and (iii) are active in political organizations (e. g., in school; see Zukin et al., 2006).

- **Online and offline civic participation** (Machackova and Serek, 2017). Measures of participation were developed by the authors of the study. Respondents were asked whether they participated, in the past 12 months, in "activities linked to some social, local, environmental, or political issue". Six items captured online participation: signing an online petition (P1); expressing an opinion through a social network site (P2); trying to persuade somebody in an online discussion (P3); writing an online article or blog (P4); creating an SNS group or webpage (P5); voting in an online opinion poll (P6). Eight items measured offline participation: signing a printed petition (P7); taking part in demonstrations or protests (P8); helping an organization (P9); taking part in a cultural event (P10); distributing leaflets, posters or other materials (P11); wearing a T-shirt, badge or other symbol (P12); trying to persuade somebody in personal discussion (P13); leading a group of people (P14). The questions were responded to on an ordinal response scale consisting of "never" (= 1), "once" (= 2), "twice" (= 3) and "more than twice" (= 4).

- **Civic identity** (Machackova and Serek, 2017). Three items were used to measure civic identity: "When you think about your life and your future, how important is it to you personally to (a) help the other ones, who had been less lucky (CI1); (b) do something to improve community (CI2); and (c) to help your own country (CI3)?" (Flanagan, Bowes, Jonsson, Csapo, & Sheblanova, 1998; Flanagan et al., 1999). A four-point response scale ranged from "not important at all" (= 1) to "very important" (= 4).

- **Political self-efficacy** (Machackova and Serek, 2017): the scale was constructed based on general guidelines for creating self-efficacy scales (Bandura, 2006) and other political self-efficacy measures (Caprara et al., 2009; Sohl & Arensmeier, 2015). Adolescents assessed whether they believed they could carry out four political activities in the place where they lived. Items were: "organize a demonstration (PE1)," "organize a petition (PE2)," "negotiate with local politicians (PE3)," "lead a group of people that is enforcing a certain cause (PE4)." Four-point response scales ranged from "absolutely disagree" (= 1) to "absolutely agree" (= 4).

- **Acceptance of non-conventional activism** (Machackova and Serek, 2017): the first indicator of attitudes towards social authorities, was measured by three items loosely based on measures of repressive potential (Finkel, Sigelman, & Humphries, 1999; Marsh & Kaase, 1979). Items were: "Protesters who disregard the police should always be punished hard (AN1)," "We should eliminate so-called activists who only criticize the government but don't actually do anything (AN2)," and "Demonstrations and protests at squares should be under stricter control (AN3)." Four-point response scales ranged from "absolutely disagree" (= 1) to "absolutely agree" (= 4). All items were reversed so

that a higher score indicates higher acceptance of non-conventional activism. MT1 = 2.47; MT2 = 2.40.

- **Authoritarianism** (Machackova and Serek, 2017): the second indicator of attitudes towards social authorities, specifically adolescents' compliance with social authorities and traditions, was measured by six items selected from the scale of right-wing authoritarianism (Funke, 2005; translated to Czech by Ťápal, 2012). Sample items: "Obedience and respect for authority are the most important values children should learn" or "The withdrawal from tradition will turn out to be a fatal fault one day." Four-point response scales ranged from "absolutely disagree" (= 1) to "absolutely agree" (= 4), a higher score indicates higher authoritarianism.

Skills

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Real and Electronic Communication Skills questionnaire (RECS)** (Mantzouranis et al., 2019): the Real Communication Skills (RCS) subscale aimed to evaluate dimensions of social skills as used in FtF social interactions. The Electronic Communication Skills (ECS) subscale focused on the evaluation of the same dimensions of social skills, but as used in text-based, CMC social interactions. Each subscale assessed the following six dimensions of social skills: (a) Expression of Emotions, (b) Emotion Decoding, (c) Sociability, (d) Initiation of Interactions, (e) Self-disclosure, and (f) Assertiveness.

- **Social Skills Inventory (SSI)** (Mantzouranis et al., 2019): one of the most widely used questionnaires for evaluating basic social skills. This 90-item questionnaire assesses three dimensions of basic social communication skills (expressivity, sensitivity and control) on two levels (emotional and social), for a total of six subscales.

- **Digital literacy** (Rodriguez-de-Dios et al., 2018): Six different digital skills were assessed with 29 items that were measured in a 5-point Likert scale of self-reported agreement, responses ranging from (1) Strongly disagree to (5) Strongly agree. Technological skill, personal security skill, critical skill, devices security skill, informational skill, and communication skill.

- **Testing skills in practice model** (Nygren and Guath, 2019)

Reported and measured construct	Question
Background variables	Gender (girl/boy/other identity) Upper-secondary school programme (year & programme) Language at home (foreign language/Swedish) Political party sympathies (1 or more parties)[4]
Self-reported categories Preferred news	*Items in self-report* Preferred news format(s) (e.g. paper news, radio etc.) Preferred news source (s) (e.g. local newspaper, evening paper etc.)
Self-rated abilities	Source criticism on the Internet (fact-checking ability) Finding information on the Internet (search ability)
Information credibility	Importance of news credibility (credibility importance) Reliability of information on the Internet (info reliability)
Sourcing in education	Source critical evaluation in education (sourcing in education)
Categories of civic online reasoning Detecting sponsored material (sourcing)	*Test-items* Screenshot from evening paper 1 (*Aftonbladet*) Screenshot from evening paper 2 (*Expressen*) Screenshot from IT journal (*Techworld*)
Comparing articles (corroboration)	Two articles about weight loss (weight loss) Two articles about the government's policy on racism (racism)
Scrutinizing comments and images (evidence)	Manipulated photograph of a smoking girl (smoking) Article about the government's energy goals (energy goals) False information about climate change (climate change) Reader's comment on incomes (income) Manipulated photograph on daisies in Fukushima (Fukushima)

Comment: The measured constructs refer to abilities that have been identified as important for the detection of false news online. The questions are referred to in the text with the names in parentheses.

Privacy

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Online privacy behaviour** (Bernadas and Soriano, 2019): dependent variable, online privacy behaviour was measured by asking respondents if they engaged in the following: change passwords; delete browser history; private browsing; log-out after use; and check privacy options.

- **10-item online self-disclosure Index questionnaire** (Miller, Berg, &Archer, 1983) adapted to assess adolescents' online self-disclosure to close friends (Li et al., 2006) (Chen et al., 2017). Respondents were asked, "How much do you usually tell your close friends about your personal habits, worst fears, secrets, etc. when you are on the Internet (online)?"Items were rated on a five-point Likert scale (1 =never tell to others to 5 =tell others in detail), with higher summary scores on the total scale indicating greater levels of self-disclosure. Offline self-disclosure: same as above but in-person communication (Chen et al., 2017).

- **Social media privacy concerns** (Dhir et al., 2017)-evaluated using four items based on the work of Dinev and Hart (2006). The items were: "I am concerned that the information I share on social media could be misused," "I am concerned that others can find private information about me on social media," "I am concerned about providing personal information on social media, because of what others might do with it," and "I am concerned about sharing personal information on social media, because it could be used in a way I did not foresee."

- **Violation of privacy**: Manipulation and/or dissemination of personal information or images without consent. 4 items, for example, someone has sent videos or images without my permission in order to bother me which are of myself or my family. (Montiel et al., 2016)

- 4 item scale for **contact and privacy risks** found to be unidimensional and averaged to create a composite scale (Rodriguez-de-Dios et al., 2018). The 4 items:

Online risks
I make new friends on the Internet
I send personal information (e.g. many names, address, and phone number) to someone that I have never met face-to-face
I send a photo or video of myself to someone that I have never met face-to-face
I share my Internet password with my friends

Risk of harm

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

Online risk exposure

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Pro-self-harm and pro-suicide site exposure** (Minkkinen et al., 2017) - answered by two-option questions formulated in the following manner: “In the past 12 months, have you seen any of the following types of websites? 1. Sites about ways of physically harming or hurting yourself? 2. Sites about ways of committing suicide?” Yes was coded as 1, no as 0.

- **Prior offline violence victimisation** (Minkkinen et al., 2017) - comprised of three items with two options (yes/no): “In the past three years, has someone bumped into you or touched you in a way that felt insulting to you?/has someone you did not know attacked or threatened you in a way that really scared you?/has someone, you knew attacked or threatened you in a way that really scared you ?”

- **Online victimisation** (Minkkinen et al., 2017) - asked with two questions: The following statements are about the targeting of hateful or degrading material online. Please answer yes or no based on your experiences. “I have personally been the target of hateful or degrading material online?” (yes/no) and “In your own opinion, have you been a target of harassment online, for example where people have spread private or groundless information about you or shared pictures of you without your permission?” (yes/no)

- **Harm-advocating online material** (Oksanen et al., 2016): The respondents were asked whether they had seen the following in the past 12 months (yes/no answer option): 1) "sites about ways of physically harming or hurting yourself” (self-injury material), 2) "Sites about ways of committing suicide” (suicide material), and 3) "sites about ways to be very thin (e.g. sites relating to eating disorders)” (eating disorder material)

- **Online risk**: measured by asking participants to rate how often they engaged in contact and privacy risks (Shin and Lwin, 2017). Scales employed four 5-interval items anchored on “never” (1) to “always” (5). Internal reliability of the four-item measurement (Cronbach’s α = .62) was relatively low but still considered acceptable (George and Mallery, 2003). A post hoc exploratory factor analysis (EFA) with maximum likelihood estimation yielded a single factor, indicating that the online risk scale was unidimensional. Thus, the four-item scores were averaged to create a composite scale.

Online risks
I make new friends on the Internet
I send personal information (e.g. many names, address, and phone number) to someone that I have never met face-to-face
I send a photo or video of myself to someone that I have never met face-to-face
I share my Internet password with my friends

Reducing risk

- The results suggest that in order to reduce exposure to online risks among children, children need to have a strong perception of the severity of risks in relation to their concerns about privacy protection rather than susceptibility (Teimouri et al., 2018).

- Measures adapted from EUKO

Online privacy concern

I am able to use a false name or false ID

I am able to provide incomplete information about myself

I ask somebody (e.g., parents and teachers) what I should d

I am able to read the privacy statement provided by the site

I go to other websites that do not ask for my personal infor

Usually, I do nothing and leave the website

Composite reliability

AVE

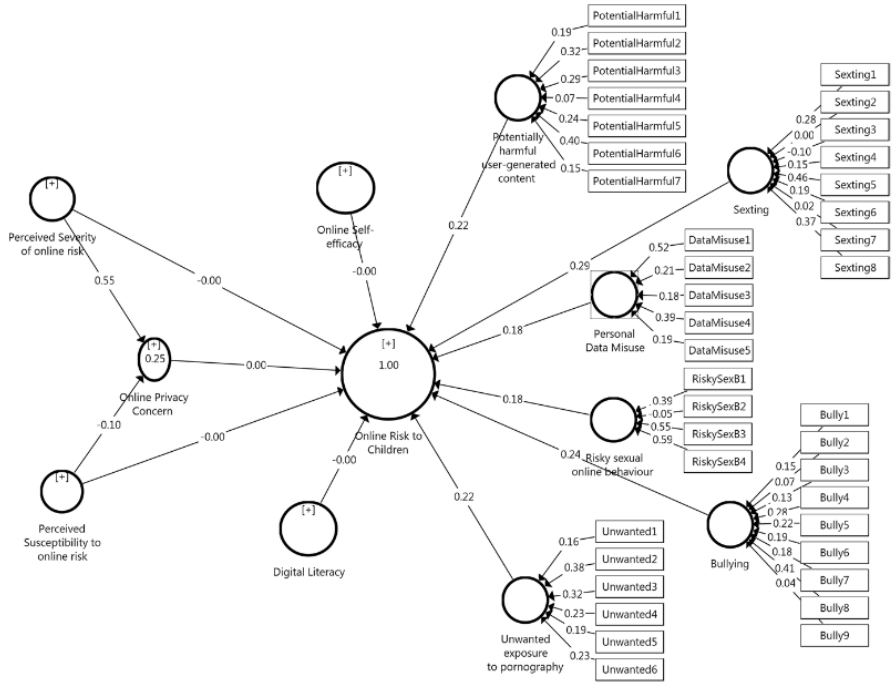

Fig. 3 Formative measurement model

Hurtful and bullying behaviour online

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Cyberbullying victimisation** (Chang et al., 2016): as measured using 4 items. Participants were asked the following questions: How often has someone 1) made or posted rude comments to or about you online; 2) posted embarrassing or nude photos of you online; 3) spread rumours about you online; 4) made threatening comments to hurt you online. If participants answered "a few times within a year" or more frequently for any of the cyberbullying victimization items, they were coded as a cyberbully victim.

- **Cyberbullying victimization** (Hinduja and Patchin, 2017): represents the respondent's experience in the previous 30 days as a target of eleven different forms of online aggression. Students were advised at the beginning of the survey that "cyberbullying is when someone repeatedly threatens, harasses, mistreats, or makes fun of another person (on purpose to hurt them) online or while using cell phones or other electronic devices." The cyberbullying victimization measure includes a variety of behaviours ranging from relatively minor ("I

received an upsetting email from someone I didn't know") to more serious ("something was posted online about me that I didn't want others to see"). The four-choice response set ranged from "never" to "many times" and responses were combined and dichotomized so that students who reported that they experienced one or more of the eleven behaviours more than just once were coded as 1, while those who had no experience with cyberbullying (or only one experience) were coded as 0.

Cyberbullying Victimization (Cronbach's $\alpha = 0.74$)
I have been cyberbullied.
Someone posted mean or hurtful comments about me online.
Someone spread rumors about me online, through text messages, or emails.
Someone posted mean names, comments, or gestures about me with a sexual meaning.
Someone threatened to hurt me through a cell phone text message.
Someone threatened to hurt me while online.
Someone posted a mean or hurtful picture online of me.
Someone pretended to be me online and acted in a way that was mean or hurtful to me.
Someone posted mean names or comments online about my race or color.
Someone posted a mean or hurtful video online of me.
Someone created a mean or hurtful web page about me.
One or more of the above, two or more times

- **Cyberbullying perpetration** (Chang et al., 2016): measured using 4 items. Participants were asked the following questions: How often have you ever 1) made rude comments to anyone online; 2) sent or posted others' embarrassing photos online; 3) spread rumours about someone online; 4) made threatening comments to hurt someone online. If participants answered "a few times within a year" or more frequently for any of the cyberbullying perpetration items, they were coded as a cyberbully perpetrator.

- **Cyberbullying Involvement** (Festl and Quandt, 2016): participants indicated how often during the last year they had experienced the set of items on a frequency scale of 0 (never), 1 (once), 2 (sometimes), and 3 (often). The following six items referred to the

  - perpetration of cyberbullying: "How often during the last year have you written something insulting about a person on a public website?", "…have you sent an insulting message to someone?", "…have you uploaded embarrassing pictures or videos of someone to the Internet?", "…have you written a message to someone using a fake identity in order to embarrass him?", "…have you spread rumours about someone on the Internet (e.g., using Facebook)?", and "…have you forwarded a personal message of someone to others without his or her knowledge?" (at1 = .71; at2 = .76).

  - forms of online victimization: "How often during the last year did someone sent you an insulting message?", "…did someone write something insulting about you on a public website (e.g., on Facebook)?", "…did someone spread rumours about you on the Internet (e.g., using Facebook)?", "…did someone intentionally post embarrassing pictures or videos of you?", "…did you receive a message from someone who used a fake identity to embarrass you?", and "…did someone forward personal information of you to others?" (at1 = .76; at2 = .80).

  - To report on the prevalence rates of involved pupils, we dichotomized the perpetration and victimization items based on the repetition criterion (as, for example, proposed by Smith et al. 2008). If someone answered at least one of the six perpetrator items with "sometimes" or "often," the person was classified as a perpetrator. The same

approach was used to determine the percentage of cyberbullying victims.

- **Production and distribution of hurtful pictures/videos** (Abeele et al., 2017): We asked respondents: "How frequently have you used your mobile phone in the past 6 months … (1) to make a picture/video of a peer to ridicule1 him/her," (2) "to take a picture/video of a peer who is physically bullied/beaten," (3) "to distribute this kind of picture/video over the Internet (e.g., via e-mail, SNS, youtube)," (4) "to take a picture/video of a teacher to ridicule him/her," and (5) "to distribute this kind of picture/video over the Internet (e.g., via e-mail, SNS, youtube)." The response categories for these questions were "never" (coded 1), "once," "a number of times (2–3 times)," "several times (about once every month)," and "regularly (more than once a month)" (coded 5)

- **Resilience** (Hinduja and Patchin, 2017): is intended to measure the ability to bounce back from adversity, the retained items appropriately "reflect the ability to tolerate experiences such as change, personal problems, illness, pressure, failure, and painful feelings" (Campbell-Sills &Stein, 2007:1026). The resultant scale included the following statements which utilized the response set of Not True at All, Rarely True, Sometimes True, Often True, and True Nearly All the Time:

1. I am able to adapt when changes occur.

2. I can deal with whatever comes my way.

3. I try to see the humorous side of things when I am faced with problems.

4. Having to cope with stress makes me stronger.

5. I have trouble bouncing back after illness, injury, or other hardships.

6. I believe I can achieve my goals, even if there are obstacles.

7. Under pressure, I stay focused and think clearly.

8. I am easily discouraged by failure.

9. I think of myself as a strong person when dealing with life's challenges/difficulties.

10. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.

- **Multidimensional questionnaire for perceived social support** (Eden et al., 2016): The questionnaire contains 12 items describing the current perception of the subject with regard to the availability of social support from family, friends or some other close significant individual. Scale items are divided into three sub-scales and refer to support from (a) family, (b) friends and (c) some other close significant individual. Answers are given on the 7-point Likert scale, from "extremely unsuitable " (1) to "extremely suitable" (7), with the high score indicating greater perceived social support.

- **Loneliness questionnaire** (Eden et al., 2016): The questionnaire contains 24 items, with 16 items relating to the child's sense of loneliness, and eight items defined as 'distracters', on a scale containing five levels: "I never feel that way" (1) to "I always feel that way" (5). A high score indicates a high sense of loneliness. Sample items: "I have many friends in my class", "I feel alone at school", "I have no one to play with at school".

- **Self-efficacy questionnaire** (Eden et al., 2016): The questionnaire contains 13 items relating to two areas: social and emotional, accompanied by answer scales ranging from "not at all" (1) to "very well" (5), with the higher score reflecting a higher sense of self-efficacy. The sub-scale of social self-efficacy had five items (for example, "to what degree are you able to connect with other students?", "to what degree do you feel alone at school?")

- **Subjective Well-Being** (Eden et al., 2016): The scale contains five questions (for example, "the conditions I live in are excellent", "I am satisfied with my life") accompanying answers on a scale ranging from 1 ("strongly disagree") to 7 ("definitely agree"). The personal well-being variable was calculated as the average of the items.

- **Perceived peer pressure** (Abeele et al., 2017): To assess perceived peer pressure, we adapted the three-item peer pressure subscale from

Buhrmester's (1992) Network of Relations Inventory–Relational Quality Version (NRI-RQV) so that it measures peer pressure from friends in general rather than from one specific friend. An exemplary item is "How often do your friends push you to do things that you don't want to do?" The response categories ranged from 1 ((almost) never) to 5 ((almost) always).

- **Health-Related Quality of Life HRQoL** (González-Cabrera et al., 2018): contains 52 items divided into ten dimensions: (1) Physical well-being, (2) Psychological well-being, (3) Mood, (4) Self-perception, (5) Autonomy, (6) Parent relation and home life, (7) Financial resources, (8) Peers and social support, (9) School environment, and (10) Social acceptance. This last dimension in the study is especially important because it asks about specific problems of traditional bullying (e.g., "Have other girls and boys bullied you?"). Some items of different dimensions are: "Have you felt fit and well?", "Have you felt satisfied with your life?" "Have you felt loved by your parent(s)?", and "Have you got on well at school?".

- **Personal wellbeing index–school children** (Lucas-Molina et al., 2018): This scale contains eight items with response options ranging from 'completely dissatisfied' (0) to 'completely satisfied" (10). The first item on the scale analyzes "life as a whole". The other seven items assess satisfaction with the following life domains: standard of living, health, achieving in life, relationships, safety, community-connectedness and future security. The score on the global scale is obtained by adding together the scores on these 7 items, and so it can range from 0 to 70 points.

Cyberhate, discrimination, and violent extremism

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Exposure to Hateful Material** (Costello et al., 2016): Respondents were asked if they have seen or heard any materials online that expressed negative views about any group because of their race, nationality, ethnicity, sexual orientation, gender, political views, immigrant status, or religion over the past three months.

- **Exposure to hate material**: assessed with the question, "In the past three months, have you seen hateful or degrading writing or speech online, which inappropriately attacked certain groups of people or individuals?" Options were 1 (yes) and 0 (no) (Keipi et al., 2018). The item, through its general phrasing, captures essential features of hate and degrading material that might be widely considered unwanted or disturbing.

- **Online victimisation** (Costello et al., 2016): a variable that queries respondents if they have been targeted with hateful or degrading material online at any time.

- **Online victimisation** (Keipi et al., 2018): measured with the question, "In your own opinion, have you been a target of harassment online, for example where people have spread private or groundless information about you or shared pictures of you without your permission?" with the options to choose being 1 (yes) and 0 (no) .

- **Online attachments** (Costello et al., 2016): Online attachment is evaluated by asking respondents how close they feel to an online group to which they belong. Closeness is determined using a 5-point scale with higher scores indicating greater attachment.

- **Offline attachments** (Costello et al., 2016): two measures that gauge respondents' offline attachments. Like the measure of online attachments, both types of offline attachments are measured on a 5-point scale with higher numbers indicating greater attachment. One measure asks respondents how close they feel to their friends, while the second assesses closeness to family.

- **Risk-taking** (Costello et al., 2016): on a scale from 1 to 10 where respondents were asked how true the statement "I enjoy taking risks" was for them. Higher scores indicate higher levels of risk-taking

Sexual activities and risks

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **Problematic internet sexual behaviour** (Ballester-Arnal et al., 2016): it includes five factors: (1) Online sexual compulsivity that measures sexual online behaviours which could be related to sexual problems and feeling out of control with their online sexual interest (2) Online sexual behaviour-isolation non-compulsive. which explores isolating forms of cybersex and using materials for sexual purposes (3) Online sexual behavior-social that evaluates social interaction associated with online sex, such as sexual chats or humor use or innuendo with others while online (4) Online sexual spending which explores economical investment during online sex behavior and (5) Seriousness perceived of online sexual behavior that measures self-perception of behavior as a problem, related to dysphoria, dissatisfaction and motivation to stop their dysfunctional consumption of cybersex.

- **Experience with sexting** (Patchin and Hinduja, 2019): assessed by asking respondents to report their experience with four behaviours: (1) A boyfriend or girlfriend sent you a sext; (2) Someone who was not a current boyfriend or girlfriend sent you a sext; (3) You sent a boyfriend or girlfriend a sext; and (4) You sent someone who was not a current boyfriend or girlfriend a sext. Responses for each of these questions were “Never,” “Over a month ago,” and “Within the last month.” Two separate questions about the frequency of lifetime involvement in sexting: whether respondents had sent or received sexts “Never,” “Once,” “A few times,” or “Many times” at any point in their lifetime. respondents asked if they had ever been asked to send a sext (by a boyfriend/girlfriend, or someone else), or if they had asked others to send them a sext (broken down by whether they were in a relationship with that person or not). Then asked if they had ever shared an explicit image that was sent to them with someone else (without the permission of the sender) and if they ever found out if someone had shared an image of themselves with others that they had sent without permission. Responses to all of these questions were “Yes” or “No.”

- **Sexting behaviors and experiences** (Buren and Lunde, 2018): measured on 12 items, which is accompanied by the following definition of sexting: “Sexting is the sending and/or receiving of images or video clips that contain nudity or are sexual in nature, such as sending nude or semi-nude pictures/video clips, showing a body part or doing a sexual act via webcam.” Four items ask whether participants had received sexts from “a girlfriend/boyfriend,” “friends/peers,” “someone they only met online,” and “someone they had never met before,” and four asked whether they had themselves sent sexts to people in each of those classes of relationship.

- **Sexting**: an adolescent modified version of three items from the Sexting Questionnaire (Gámez-Guadix, Almendros et al., 2015) to assess how often teens had sent sexual content online in the past year (Gamez-Guadix et al., 2017). To differentiate the sexting behaviors of sending photos and information as a result of harassment (e.g., after receiving threats), it asks teenagers to indicate how many times they had done the following things voluntarily, that is, because they wanted to: 1) “Send written information or text messages with sexual content about you,” 2) “Send pictures with sexual content (e.g., naked) about you,” or 3) “Send images (e.g., via webcam) or videos with sexual content about you.” The response scale is: 0 = never, 1 = from 1 to 3 times, 2 = from 4 to 10 times, and 3 = more than 10 times.

- **Online sexual experiences** (Sklenarova et al., 2018): if a sexual experience occurred (Yes/No) for sexual conversation online (Have you had a sexual conversation online with somebody (known or unknown) within the past year?), exchanging pictures (Have you exchanged pictures online with somebody (known or unknown) within the past year?), and cybersex (Have you engaged in sexual

action online with or in front of somebody (known or unknown) within the past year?). Cybersex was defined as engaging in virtual sexual activity (having online sex) such as for instance masturbating in front of a webcam. If a respondent answered yes to any of these questions, it was followed up by inquiring about the age (≤13 years, 14–17 years, 18–21 years, >21 years old) and gender (male, female) of the online contact for each experience (e.g., Who was the individual you have had online sexual conversation with within the past year?). Assesses the familiarity with the online contact (Did you know this person before the online sexual conversation? Answered with yes offline/yes online/no).

- **Subjective evaluation of online sexual experiences** (Sklenarova et al., 2018): assesses adolescents' evaluation of each of their online sexual interactions (sexual conversation, exchanging pictures, and cybersex) on a 5-point Likert scale ranging from very disagreeable (1) to very agreeable (5) via self-constructed single item (e.g. How was the sexual conversation for you?). The responses very disagreeable and disagreeable are coded as subjectively negative experiences and very agreeable and agreeable as subjectively positive experiences.

- **Online sexual experiences** (Maas et al., 2019):

Indicators	Item-response probabilities for item endorsement			
Visit porn sites	0.05	0.59	0.00	0.46
Cybersex/role-play	0.03	0.95	0.00	0.05
Sex chat	0.05	0.56	0.00	0.68
Sexting	0.11	0.65	0.29	0.22
Sexy profile pic	0.00	0.55	0.74	0.00
Sexy comments	0.38	0.94	1.00	1.00
Sexy photos	0.08	0.99	0.56	0.41
Sex solicitation	0.04	0.76	0.58	0.25

Indicators are dichotomous online sexual behaviors. Each class indicator was scored as 1 = not endorsing the item and 2 = endorsing the item

- **Sexting behaviours (Morelli et al., 2016)**: a 29-item modified version of the Sexting Behaviors Scale (Dir, 2012) to assess sexting behaviours. The original version of the scale is composed of 11 items investigating only receiving, sending or posting provocative or suggestive text messages and pictures (not considering videos). To this 18 items were added to investigate more deeply the three sexting sub-dimensions: receiving, sending, and posting sexts. These items measured the identity of the individuals in the photo/video and whether sexts were sent or posted with their consent. Sexting behaviours were defined as "sending or receiving sexually suggestive or provocative messages/ photos/videos via mobile phone and/or Facebook or another internet social networking site," and participants were asked to rate each sexting behaviour (from item 1 to item 29) on the following 5-point Likert scale: 1 (never); 2 (rarely or a few times); 3 (occasionally or 2-3 times a month); 4 (often or 2-3 times a week); 5 (frequently or daily).

- **Sexting attitudes** (Speno and Aubrey, 2019): based on Power to Decide's (formerly the National Campaign to Prevent Teen and Unplanned Pregnancy, 2008) and Cosmogirl.com's Sex and Tech survey, participants indicated on a 5-point scale (1 ¼ strongly disagree to 5 ¼ strongly agree) how much they agreed that each of the following adjectives described sexting: "flirty," "gross" (reverse-coded), "hot," "lame" (reverse-coded), "dangerous" (reverse-coded), "exciting," "fun," "harmless," and "immoral" (reverse-coded). Two additional adjectives that Hudson and Fetro (2015) added to their instrument assessing sexting in undergraduate students were included: "arousing" and "healthy" (neither were reverse-coded).

Table 2. Factor Loadings for the Sexting Intentions Measure.

Items	Security-Based Sexting Intentions	Situation-Based Sexting Intentions
If I find the right person	**.93**	−.11
If I trust the receiver	**.91**	−02
If I am in a relationship	**.68**	−.10
If I am married	**.64**	−.05
If I am 100% sure it would remain private	**.62**	.20
If I receive a sexy message from someone I like	.06	**.81**
If someone pressures me	−.16	**.76**
If people who are important to me approve	.00	**.67**
If someone I like asks me	.05	**.67**
If I am drunk	.03	**.62**
If I am the sole owner of my cell phone	.22	**.61**

Note. The exploratory factor analysis extraction was principal axis factoring, and the oblique rotation was promax. Retained item loadings are indicated in boldface.

- **Sexting intentions** (Speno and Aubrey, 2019): measured with 15 items from Hudson's sexting instrument (Hudson, 2011; Hudson & Fetro, 2015). Participants are asked to indicate on a 5-point scale (1 ¼ strongly disagree to 5 ¼ strongly agree) their agreement with "how likely are you to sext" in given situations:

- **Willingness to engage in sexting** (van Oosten and Vandenbosch, 2017): measured by asking participants if it was likely that they would send a picture via the internet or text message of them being naked or almost naked, if this was asked of them by a) their partner, b) someone they are dating, c) a friend, d) a stranger or e) their ex-partner, on a 7-point Likert scale (1 ¼ very unlikely to 7 ¼ very likely).

- **Sexy online self-presentation** (van Oosten and Vandenbosch, 2017): participants are asked first whether they use SNSs (e.g., Facebook, Twitter, Instagram). When they are SNS users, they are subsequently asked how often in the past two months they have uploaded pictures on their SNS profile portraying themselves (a) with a sexy gaze, (b) with a sexy appearance, (c) scantily dressed (e.g., bathing suit or underwear), and (d) in a sexy posture, on a 7-point Likert scale (1 ¼ never to 7 ¼ always).

- **Sexy online self-presentation of others** (van Oosten and Vandenbosch, 2017): exposure to sexy self-presentations of others (van Oosten et al., 2015), participants that use SNSs are asked how often in the past two months they had deliberately sought out pictures of others on SNSs portraying them (a) with a sexy gaze, (b) with a sexy appearance, (c) scantily dressed (e.g., bathing suit or underwear), and (d) in a sexy posture, on a 7-point Likert scale (1=never to 7=always).

- **The Sexual Sensation Seeking Scale (SSSS)** is an 11-item Likert-type measure with response options ranging from 1 (not at all like me)to 4 (very much like me). The 11-item scale includes statements such as, "I am interested in trying out new sexual experiences" and "I feel like exploring my sexuality." It was developed by Kalichman et al. (1994).

- **Watching Sexually Explicit Internet Material** (Vandenbosch and van Oosten, 2018): A 7-point scale (never = 1 through several times a day = 7) was used to address the extent to which adolescents had intentionally exposed themselves to sexually explicit, pornographic Internet content during the last 6 months, and more specifically, to (a) pictures with clearly exposed genitals, (b) videos with clearly exposed genitals, (c) pictures in which people are having sex, (d) or videos in which people are having sex (Peter & Valkenburg, 2008, p. 585).

- **Cyber Pornography Addiction** (Morelli et al., 2017): the perceived addiction to cyber pornography was assessed through the nine-item short form of the Cyber Pornography Use Inventory (CPUI-9; Grubbs et al. 2013). Cyber pornography was defined as any sexually explicit material whose primary purpose is to cause sexual arousal (McManus 1986) researched via the use of the internet (Owens et al. 2012). Includes three dimensions: perceived compulsivity (a sample item is I believe I am addicted to Internet pornography), access efforts (a sample item is at times, I try to arrange my schedule so that I will be able to be alone to view pornography), and emotional distress (a sample item is BI feel ashamed after viewing pornography online). This scale is rated on a seven-point Likert scale from 1 (disagree) to 7 (agree).

- **Cybersexual Addition Index** (Shin and Lee, 2019): To measure the degree of exposure to pornography, 20 questions from the Cyber sexual Addition Index were used. Sample questions included “How often do you neglect other responsibilities to spend more time in accessing internet pornography?”, “How often do you become anxious, nervous, or upset when you are unable to access sexually-oriented web sites?”, “How often do you lose sleep due to late-night log-ins accessing internet pornography?” and so on. Respondents were asked to answer each question using a 5-point scale – from 1 (rarely), 2 (occasionally), 3 (frequently), 4 (often), 5 (Always).

- **Problematic internet pornography scale (PIPUS)** is a 12-item self-report scale that is based on the Problematic Pornography Use Scale (Kor et al., 2014) and was used to assess PIPU. The scale consists of four factors including (a) distress and functional problems, (b) excessive use, (c) self-control difficulties, and (d) use in order to escape or avoid negative emotions. In this study, “pornography” was modified into “Internet pornography” from the original scale. Each factor of the PIPUS includes three items. Respondents were asked to report on their Internet pornography use in the last 6 months on a 6-point Likert scale ranging from 0 (never) to 5 (all the time) with higher scores reflecting greater PIPU severity.

- **Unwanted exposure to online pornography** (Chang et al., 2016): participants are asked the following question: How often did you open an email or instant message or a link in a message that showed you pictures of naked people or people having sex that you did not want? Response options for each item included the following: never, ever (ever before a year), seldom (a few times within a year), sometimes (a few times within a month), and usual (a few times within a week). If participants answered a few times within a year or more frequently, they were coded as having unwanted exposure to online pornography.

- **Use of chat rooms and dating websites** (Vandenbosch et al., 2016): an eight-point scale how often they usually visit chat rooms [39] (never=1 through all day long=8) and dating websites [28] (never=1 through all day long=8).

- **Use of erotic contact websites** (Vandenbosch et al., 2016): a seven-point scale (never=1 through several times a day=7) how often during the last 6 months they had intentionally exposed themselves to erotic contact sites.

- **Sexually aggressive behaviour** (Shin and Lee, 2019): ten items were employed including statements for various types of sexually aggressive behaviours such as “I have forcibly tried to kiss or caress to the opposite sex”, “I secretly took the picture of the body of the opposite sex”, “I have tried sexual contacts with close neighbours or relatives”, “I have committed rape or attempted rape”. Respondents were asked to rate their experience over the last year on each questions using a 5-point scale – 1 (never), 2 (1–2 times), 3 (3–4 times), 4 (5–6 times), 5 (more than 6 times). A Mean score was calculated for the ten questions and a higher mean score indicated a higher level of sexually aggressive behaviour.

- **Other measures**: sexual intensity of social media profile, sexual self-concept, Sexual media diet (Bobkowski et al., 2016); sexual assault experience, consultation about sexual assault, future expectations about consultation, conservative attitude toward sexual activity, recognition of the signs of dating violence (Nagamatsu et al., 2018); trait self-objectification (TSO), internalisation of media ideals (Speno and Aubrey, 2019).

Online sexual exploitation and abuse

For the measures recommended by Global Kids Online, see www.globalkidsonline.net/survey

Additional measures from the reviewed studies:

- **The Juvenile Online Victimization Questionnaire** (Montiel et al., 2016):

Table 1
Description of the modules of the Juvenile Online Victimization Questionnaire, JOV-Q (Montiel & Carbonell, 2012).

	Definition	Number of items	Item example	Cronbach's alpha
Sexual modules				.928
Sexual pressure	Requests to engage in sexual activities or sexual talk or give personal sexual information that involves insistence and reiteration, regardless of the age of perpetrator.	6	Someone has pressured me repeatedly to talk online about sex.	.884
Sexual coercion	Requests to engage in sexual activities or sexual talk or give personal sexual information that involves explicit violence or intimidation as threats or blackmail, regardless of the age of perpetrator.	9	Someone has threatened me to pose for sexy pictures in front of the webcam.	.923
Online grooming by an adult	Requests made by an adult, regardless of the use of coercive or grooming techniques, to engage in sexual activities or sexual talk or give personal sexual information.	7	An adult has tried to seduce me through material gifts such as mobile top-ups.	.825
Unwanted exposure to sexual content	Receiving unexpected and unsolicited sexual material from someone. It can include general sexual material such as pornography or specific images such as mirror pictures from sexting or online exhibitionism.	4	Someone has sent me, without me requesting them, images or videos of people showing their private parts.	.786
Violation of privacy	Manipulation and/or dissemination of personal information or images without consent.	4	Someone has sent videos or images without my permission in order to bother me which are of myself or my family.	.725
Non-sexual modules				.832
Online harassment	Repeated threats or other offensive behaviors (not sexual solicitation) such as efforts to embarrass or humiliate youth, sent online to them or posted online about the youth for others to see, regardless of the age of perpetrator.	8	Someone has insulted or ridiculed me repeatedly with messages or calls to bother me.	.831
Happy slapping	Verbal or physical aggressions that are recorded to be spread online.	2	Someone has recorded me while another person attacked me verbally or physically.	.738
Pressure to obtain personal information	Repeated requests to give personal information.	4	Someone that I met online has pressured me repeatedly to give him/her personal information such my telephone number, postal address, etc.	.805

Note: All the items were introduced after the sentence "Now think how often you have experienced the following events through Information and Communication Technologies during the last year, and select the option as similar as possible to your reality".

- **Online sexual solicitation and interaction of minors with adults** (Machimbarrena et al., 2018; de Santisteban and Gamez-Guadix, 2018; Gámez-Guadix et al., 2018): most commonly used; children are asked how often they experienced a particular sexual solicitation or interaction with a person aged 18 or older during the past year, using a 4-point Likert scale: 0 (Never), 1 (Once or twice), 2 (3–5 times), and 3 (6 or more times). The sexual solicitation scale was made up of five items (e.g., "An adult asked me for pictures or videos of myself containing sexual content"; "An adult has asked me to have cybersex [e.g., via a webcam]"). The sexual interaction scale was made up of five items (e.g., "I have sent an adult photos or videos with sexual content of me"; "We have met offline to have sexual contact"). This scale also includes one item (i.e., "I have met an adult I previously met on the Internet in person") intended to tap those offline meetings between the minor and an adult in which sexual content may not have been evident for the minor. The questionnaire also asks about the age of the adult and whether the adult was first met online or offline.

- **Online sexual solicitation victimisation** (Chang et al., 2016): measured using two items. Participants were asked the following questions: How often has someone (1) asked you to talk about sex online when you did not want to and (2) asked you to do

something sexual online that you did not want to? Response options for each item included the following: "never," "ever (ever before a year)", "seldom (a few times within a year)," "sometimes (a few times within a month)," and "usual (a few times within a week)." If participants answered "a few times within a year" or more frequently for any of the two items, they were coded as a victim of online sexual solicitation victimisation.

- **Online sexual solicitation** (Karayianni et al., 2017): Participants were asked to answer whether a) they were talked to in a sexual way online or on their cell phone, b) they were asked to meet with someone who was not the person presented to be online or via cell phone, c) they were asked to record themselves or see them live via internet in order to get sexual arousal or satisfaction, d) they were asked to send naked photos or with sexual context via internet or cell phone. Responses indicated the occurrence and frequency of the specific event during the last year (i.e., 1–2 times,sometimes, once a month or two months, sometimes of the month, once a week or more often) or the occurrence or not of the event before the last year (i.e., "Not the last year, but it happened previously", "It never happened").

- **Unwanted sexual solicitation** (Zetterström Dahlqvist and Gillander Gådin, 2018):

Unwanted online sexual solicitation (USS)
Has anyone tried to get you to talk about sex when you did not want to?
Has anyone asked you personal questions when you did not want them to, such as what your body looks like or sexual things you have done?
Has anyone asked you to do something sexual that you did not want to do?
Has anyone you don't know asked you to meet offline?

- **Sexual solicitation requests and attention** (DeMarco et al., 2017): explored through four items: sexual information was asked of you online; you were asked to do/perform sexually online; you were asked to produce a sexually explicit photograph or video; you were asked to meet up for sexual activity. Each of these items was measured on a 4-point ordinal scale.

- **Online sexual solicitation perpetration** (Chang et al., 2016): measured using two items. Participants were asked the following questions: How often have you (1) asked someone to talk about sex online when they did not want to and (2) asked someone to do something sexual online when they did not want to? If participants answered a few times within a year or more frequently for any of the online sexual solicitation perpetration items, they were coded as an online sexual solicitation perpetrator.

- **Sexual assault experience** (Nagamatsu et al., 2018): questions include: (a) "Has anyone forced you to have sexual intercourse when you didn't want to?" (b) "Did you ever have sexual intercourse when you didn't want because you were afraid of what he or she might do?" (c) "Has anyone forced you to do something sexual that you found degrading or humiliating?". Yes/No response options.

- **Coercive sexting** (Kernsmith et al., 2018): the Safe Dates Dating Violence perpetration and victimization scales (Foshee et al., 1996) are modified to include measures of electronic dating violence perpetration. Adolescents were asked how many times they had committed a number of behaviours against a dating partner, or a partner committed against them, in the past year. Two of the items measure coercive sexting: "pressured to send sexual messages or texts" and "pressured to send nude or sexy photos." Response options range from never (0) to 10 or more times (4).

- **Sexual coercion** (Kernsmith et al., 2018): operationalised as pressuring a dating partner to have sex without a condom, insisting on sex when the partner did not want to, and/or using threats to pressure a partner into having sex. Includes four items modified from the Sexual Coercion subscale of the Revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The questions include "made them have sex without a condom" insisted on sexual activity when they did not want to (but did not use force)," and "used threats to make them have any sexual activity." Response options ranged from never (0) to 10 or more times (4).

- **Offline sexual harassment perpetration** (Chang et

al., 2016): measured based on the respondent’s answer to how often they sexually harassed others. If participants answered “a few times within a year ” or more frequently, they were coded as an offline sexual harassment perpetrator.

- **The International Society for the Prevention of Child Abuse and Neglect (ISPCAN) Child Abuse Screening Tool** (ICAST) (Karayianni et al., 2017): TheICAST is a self-report scale that was developed to be used as a reliable screening tool for assessing the major categories of assault or maltreatment conventionally used in clinical and research settings. In the home module a total exposure to victimisation score is computed, as well as four subscales: physical abuse/discipline, sexual abuse, neglect,and psychological abuse. Participants provide responses indicating the frequency with which specific events occurred in the past (“many times”, “sometimes”, “never”). Sexual abuse items are rated categorically: “never,” “once or twice” or “more than2 times.”

- **Sexual trafficking** (Karayianni et al., 2017): sexual trafficking was based on two questions associated with survival sex [i.e., “Made/Asked you to have sex or engage in other sexually related activities either with them, or with other people in exchange of money or other types of bribe (e.g., food, clothes, etc)”] and trafficking [i.e., Made/Asked you to go to another district or to the occupied area in order to engage in sexually related activities (e.g., sex) for your and/or their financial reward”.

- **Victimization scale adapted from the cyber dating abuse questionnaire** (Machimbarrena et al., 2018): this consists of 11 items referring to different types of cyber dating abuse, including behaviours of controlling the partner’s mobile and insulting (e.g., “called me or chatted excessively with me to control where I was and with whom”). A four-point response scale is employed ranging from 0 (never) to 3 (almost always). Only participants who report having had a partner during the last six months complete this questionnaire.

- **Dating violence** (Morelli et al., 2016): assessed by a modified version of the Conflict In Adolescent Dating Relationships Inventory (Wolfe et al., 2001) using 25 items of the original scale to assess different types of dating violence behaviours such as threatening behaviours and physical, sexual, relational, and verbal/ emotional abuse. Twelve items were added to investigate online dating violence, specifically related to relational, verbal/emotional, and threatening dimensions (a sample item is: “I tried to turn her/his friends against her/him by SMS/mail/Facebook”). Each item is repeated twice to investigate the dimensions of perpetration and victimization: The final scale is composed of 74 items rated on a 4-point Likert scale from 0 (never) to 3 (often or 6 times or more).

- **Sexual Coercion and Abuse** (Stanley et al., 2018): young people are asked the following questions: whether any of their partners had ever pressured them into kissing, touching, or something else; whether they had been physically forced into kissing, touching, or something else; and whether they had been pressured into having sexual intercourse or physically forced into having sexual intercourse. Perpetration is measured using the same set of behaviours but by asking whether the young person had ever done these things to a partner. Questions are answered on a 4-point scale: never, once, a few times, and often.

- **Technology-mediated interpersonal violence and abuse** (Barter et al., 2017): 6 questions chosen reflected four main ways in which new technologies could be used to inflict IPVA: emotional abuse; controlling behaviour; surveillance and isolation. Emotional online abuse is measured by three questions: have any of your partners ever put you down or sent ever sent you any nasty messages? Have any of your partners posted nasty messages about you that others could see? Have any of your partners sent you threatening messages online or by mobile phones? Controlling behaviour was measured by one question: Have any of your partners used mobile phones or social networking sites to try and control who you can be friends with or where you can go? Surveillance is also measured by a single question: Have any of your partners constantly checked up on what you have been doing / who you have been seeing, for example, by sending you messages or checking your social

networking page all the time? Lastly, social isolation is measured by: Have any of your partners used mobile phones or social networking sites to stop your friends liking you, for example, pretending to be you and sending nasty messages to your friends?

- **Other measures**: influence scale, bribery scale, deception scale, deception scale (Gámez-Guadix et al., 2018); electronic dating aggression, adverse childhood experiences, family and peer support, perceived safety, school connectedness (Smith-Darden et al., 2017); cyber dating abuse (Van Ouytsel et al., 2016).