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SCIENTIFIC STUDIOS ON Social & Political Psychology

Оглядова стаття/Review article
UDC 159.922.8
Svitlana Chunikhina
Ph.D., Vice-director at the Institute for Social and Political Psychology of the National Academy of Sciences of Ukraine
Caroline Dodson
MSc Global Health Vrije University, Amsterdam
Ellen Önen
MSc Global Health Vrije University, Amsterdam
DOI: https://doi.org/10.33120/sspjj.vi50(53).599

SUICIDE SCREENING AMONG PUPILS IN ONLINE LEARNING CONDITIONS: A SCOPING REVIEW

ABSTRACT

Introduction. The risk of child and youth suicides has increased in Ukraine since the Russian-Ukrainian war began. There is a high probability of increasing suicides among all ages, genders, and social groups after the end of active hostilities and the commencement of peace. Thus, Ukrainian students and pupils require regular screening for suicidal and self-harm tendencies to receive timely preventive or therapeutic interventions. However, due to distance learning conditions, most have limited access to diagnostics and help.

Purpose. The article **aims** to observe the available screening techniques suitable/applicable for detecting suicidal tendencies and/or self-harm in school-aged children in online learning conditions.

Methodology. A scoping review was chosen as a method of identifying available literature. Inclusion criteria were defined in that all articles must have been published within the last five years, written or translated into English, and dealt with pupils aged 5-19. Search engine databases included Scopus and Web of Science. The “Pearl growing” method was also applied by reviewing the references of included articles.

Results. Ultimately 18 out of 996 identified articles were included in scoping review. Most of the studies utilized long-established, reliable and evidence based mental health diagnostic screening tools, or a combination of several. The two most widely used diagnostic screening tools were the Patient Health Questionnaire (PHQ-9) and the Generalized Anxiety Disorder Questionnaire (GAD-7). We have identified three settings of digital tools developed on this basis: for school, for clinical, for remote-only usage.

Conclusions. Emerging technologies can augment traditional approaches during virtual suicide assessment. This research can offer promising direction into the facilitation of screening adolescents electronically in distance learning conditions. With careful planning and research, it is possible to effectively accomplish screenings for Ukrainian pupils and students and ensure they receive the appropriate mental health care as soon as possible.

KEY WORDS

youth suicide, screening tools, distance learning, Ukraine, war, scoping review

CORRESPONDING AUTHOR INFORMATION

Svitlana Chunikhina, Ph.D. Vice-director at the Institute for Social and Political Psychology of the National Academy of Sciences of Ukraine , Kyiv, Ukraine
Email s.chunikhina@ispp.org.ua ORCID ID: 0000-0002-0813-67415

Received
30.08.2022

Revised
10.11.2022

Accepted for publication
05.12.2022

Видавець: Інститут соціальної та політичної психології, Національна Академія Педагогічних Наук України

doi:https://doi.org/10.33120/…

INTRODUCTION

The risk of child and youth suicides has increased in Ukraine lately due to kids' involvement in dangerous online activities and their broader media coverage (Naydyonova & Zarytska, 2019; Sliusarevskyi & Chunikhina, 2021). Since 2014, when the Russian-Ukrainian war started, so-called "death groups" (online communities that involve children and teenagers in games with a self-harming or suicidal orientation) have increased their activities following escalation on the battlefields. With the beginning of the full-scale Russian invasion, the number of requests for psychological help for suicidal and self-harm behavior among children, adolescents, and young people increased significantly (Kryvulyak & Legenka, 2022). As the results of international studies on the dynamics of suicides in pre-war, war, and post-war times show, there is a high probability of an increase in the number of suicides among all age, gender, and social groups of the population after the end of active hostilities and the commencement of peace (Lester, 1994; 2021). Risk factors include

- the genocidal nature of the war;
- the consequences of the traumatic experience of violence, occupation, and losses;
- psychological challenges of refugees and migration;
- availability of firearms (Kryvulyak, & Legenka, 2022; Amiri, 2021; Selakovic-Bursic, Haramic, & Leenaars, 2006).

The ongoing war in Ukraine puts an estimated 7.5 million children at extreme risk for mental health problems (Elvevåg & Delisi, 2022). While distance learning has become increasingly common among youth due to the impact of the COVID-19 pandemic, many children worldwide are now returning to a traditional school environment. However, the learning process for many children in Ukraine continues to be remote due to the current full-scale war. Bürgin et al. (2022) describes the devastating duplexity of both the pandemic and the war and the impact they have had on the mental health of these children.

Increased distance learning screen time and internet use can contribute to feelings of isolation and may increase youths' exposure to violent online games that feature suicide, which is a risk factor for self-harm (Ming et al., 2016). Disturbing online self-harm challenges, such as the "Blue Whale Game," have been linked to outbreaks of two recorded suicide epidemics in Ukraine (Adeane, 2019).

Thus, Ukrainian students and pupils require regular screening for suicidal and self-harm tendencies to receive timely preventive or therapeutic interventions. However, due to distance learning conditions, most have limited access to diagnostics and help.

Adolescent mental health in the specific cultural context of school aged children in Ukraine has not been prioritized enough in research to fully tailor interventions. There is an urgency to address this research aim and lessen the research gap in order to meet the mental health needs of youth affected by this crisis. The research topic that we will be investigating is the assessment of suicidal tendencies among pupils in online learning conditions worldwide. We hope to provide evidence-based strategies to reduce harm in children by offering screening tool guidance for parents, teachers, and other responsible adults. This screening should be based on specific indicators that may differ from offline screening. Proper screening and treatment have the potential to save lives and reduce war-associated morbidity. Hence, developing an online-based screening instrument that could be implementable for teachers, parents, or psychologists would be of great value.

Therefore, the article's **aim** is to answer the research question: what are the available screening techniques suitable/applicable for detecting suicidal tendencies and/or self-harm in school-aged children in online learning conditions?

METHODOLOGY

A scoping review was chosen as a rigorous but also an efficient method of understanding the volume of available literature. The review was guided by a PRISMA checklist (Tricco et al., 2018). The SPIDER framework was also used to structure the research question by identifying the setting, population, intervention, comparison, and evaluation. A log book was used as a primary documentation source throughout the search to minimize the risk of error.

REVIEW and DISCUSSION

As for inclusion criteria and scope of the review were concluded that all articles must have been published within the last five years and written or translated into English. This scope included school-aged pupils aged 5-19. The justification for this age group is that it includes children of school age, and intentional self-harm has been reported in children as young as five in Ukraine (National Academy of Educational Sciences of Ukraine, 2021). The justification of the five year time period is that the topic is related to the development of online technology and its integration into schools during the COVID-19 pandemic and on-going war in Ukraine.

Nevertheless, articles are not limited to Ukraine because self-harm is a global issue.

Search engine databases included Scopus and Web of Science due to the nature of the subject. These databases were accessed through the Vrije University library to increase access to a diversity of full text articles. The "Pearl growing" method (Hadfield, 2020) was also applied by reviewing the references of included articles to ensure all relevant literature was identified outside our database search. The database search in combination with the pearl growing strategy, offered sufficient results. Search engine expansion was not necessary or possible due to time constraints. Search syntax was customized for each database to offer the most precise results (see Appendix A: Search Strategy Template). All yielded articles were imported directly into the EndNote X9 citation program for the organization. Rayyan Intelligent Systematic Review software was then used to screen and select the relevant articles. The collection of articles was screened together to ensure consistency. Any articles that were unclear in meeting inclusion criteria were further discussed by the research team. There were no breaches of inclusion and exclusion criteria to include essential cases. There were several gray literature articles discovered which were given consideration. They were found to be of importance to the topic but were excluded because they were not peer-reviewed. Ultimately 18 articles were included in this scoping review. A PRISMA flow diagram was used to summarize the screening process (see Figure 1) visually. Most of the articles were excluded based on irrelevant populations and inapplicable settings.

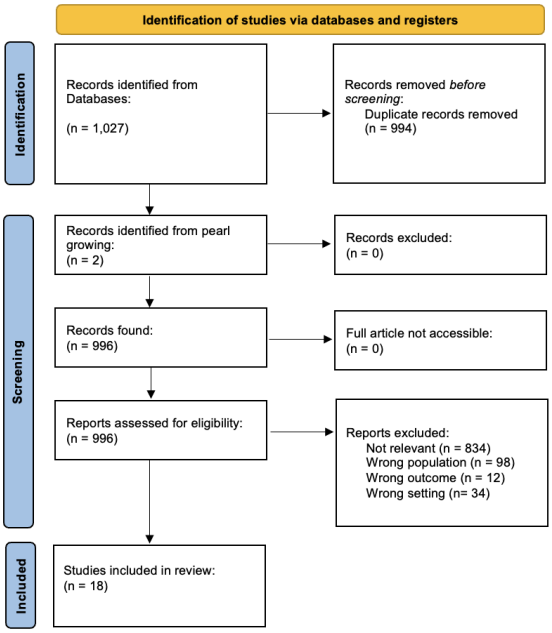

Figure 1: PRISMA flow diagram

Data Extraction and Critical Appraisal. A data extraction process was subsequently conducted on the included articles. Articles were read in their entirety and key information was identified and charted to offer a comprehensive and descriptive summary (see Appendix B). A collaborative excel spreadsheet was used for this process for both study authors to contribute equally. Details such as the aim of the study, name of the screening tool, methodology, sample population and size, authors' stated study limitations, results, discussion, and conclusion synopses were included. It was also important to distinguish exactly which mental illness(es) were being screened for as these varied by each tool.

A critical appraisal of the articles was done using the Mixed Methods Appraisal Tool (MMAT) Version 2018 to determine the quality and relevance of each article. Close attention was paid to the publishing journal to avoid the inclusion of predatory journals. This scoping review included studies that were qualitative, quantitative and mixed methods, therefore, 4 out of the 5 question sets were utilized from the tool. Study quality was assessed on factors such as sample size and data collection methods. Strengths and limitations of each article were taken into

consideration and excluded if we decided it was not of benefit to include. It was determined that each article included was relevant to the research question, sufficient in its methodology, and credible. After the critical appraisal was completed, an open coding process was performed on each article in the data extraction sheet (Appendix B) to offer insight into key themes in the findings.

Results. Ultimately 18 out of 996 identified articles were included in our scoping review (see Table 1: Summary of Included Papers). While further research is certainly needed in this area, our results offer substantial evidence to answer our research question. Traditionally, screening for suicide and mental illness has been done face-to-face in a clinical setting by a healthcare provider. However, it appears new technology and methods are allowing for the screenings to be completed electronically and sometimes without the need for a licensed professional. Studies showed there are several evidence-based tools that could effectively screen students in an online distance learning environment.

Of the 18 total articles included in our review, 9 of them were conducted specifically in a school setting. This usually involved the students self-administering the tool online in a classroom during regular school hours. The other settings were either clinical or completely remote. The studies in a clinical environment such as an outpatient center also involved the adolescents electronically self-administering the screening, usually on a tablet, before an appointment with their healthcare professional. The entirely remote interventions were typically pilot studies testing the use of a new smartphone application to screen youth, or a software algorithm. The countries that the studies were completed in varied across several continents, however, none were located in Ukraine.

Table 1: Summary of Included Papers

First author and Year	Country	Setting	Sample Size	Study Design	Tool
Martínez-Nicolás, 2022	Mexico	High schools	n= 2,835	Representative cross sectional study	Columbia-Suicide Severity Rating Scale (C-SSRS), Patient Health Questionnaire-9 (PHQ-9), abbreviated version of the Generalized Anxiety Disorder-7 (GAD-7), the World Health Organization Well-being Index (WHO-5)
Thabrew, 2018	New Zealand	Specialist outpatient paediatric clinics	n= 30	Mixed Methods	YouthCHAT
Thabrew, 2019	New Zealand	A low-decile high school	n= 129	Counterbalanced randomized trial	YouthCHAT
Sekhar, 2022	United States	High schools	n= 12,909	Randomized control trial	Patient Health Questionnaire-9 (PHQ-9)
Malalagama, 2018	Sri Lanka	Tertiary care hospitals	n= 100	Mixed methods validation study	Adolescent Suicide Assessment Protocol (ASAP-20) translated and culturally validated to Sri Lanka
Kim, 2022	South Korea	Elementary and middle schools	n= 514	Mixed methods	Self-Harm Screening Inventory (SHSI) culturally validated to Korea
Jang, 2017	South Korea	School	n= 208,603	Quantitative cross sectional study	Center for Epidemiologic Study for Depression (CES-D) and Suicide Behaviors Questionnaire-Revised (SBQ-R)
Iorfino, 2017	Australia	Clinics	n= 232	Cross-sectional study	Kessler-10 (K10) questionnaire, Altman self-rating scale, Community Assessment of Psychotic Experiences-Positive Symptoms scale, Suicide Ideation Attributes Scale (SIDAS), Brief Disability Questionnaire (BDQ)
Hetrick, 2017	Australia	Primary and tertiary care	n= 101	Mixed methods naturalistic longitudinal cohort study	Patient Health Questionnaire 9-item scale (PHQ-9) and Suicidal Ideation Questionnaire (SIQ)
Albritton, 2021	United States (Ohio)	Remote	n= 65	Descriptive Pilot Study	Rosenberg Self-Esteem Scale and the Community Attitudes Toward Mental Illness questionnaire
Parker, 2020	New South Wales, Australia	GP offices	n= 36	Single arm uncontrolled pilot study	Patient Health Questionnaire-9 (PHQ-9) for depressive symptoms and the Generalised Anxiety Disorder Questionnaire (GAD-7) for anxiety symptoms.
Stewart, 2020	Canada	Clinics	n= 25,104	Large mixed methods cross-sectional study	ChYMH Screener and full ChYMH assessment tool (used in assessing, triaging and prioritizing children and youth seeking mental health service)
Dobias, 2021	United States (nationwide)	Clinics	n= 565	Clinical Trial; Empirical Study; Quantitative Control Trial	Children's Depression Inventory-2 (CDI-2) and two, single-item questions adapted from the Self-Injurious Thoughts and Behaviors Interview-Revised (SITBI-R), and Self-Hate scale (SHS)
Luijten, 2019	Netherlands	Secondary schools	n= 1,175	Empirical quantitative Study	Mental Health Continuum-Short Form (MHC-SF), the Positive and Negative Affect Scale for Children (PANAS-C), the Kidscreen-27, the Social Production Function Instrument for the Level of well-being-short (SPF-ILs), and Cantril's ladder.
Vawda, 2017	South Africa	Low socio-economic middle school	n= 221	Quantitative empirical study	Self-report psychometric instruments: the Beck Depression Inventory (BDI), The Beck Hopelessness Scale (BHS), the Perceived Stress Scale, the Anger Scale, the Mastery Scale, a 7-item scale employed to determine personal control or mastery, the Self-Esteem Scale, and the Perceived Social Support Scales
O'dea, 2019	Australia	School	n= 59	A single-arm, pre-post, 6-week uncontrolled pilot trial	Smooth Sailing
Lee, 2019	South Korea	School	n= 247,222	Cross-sectional design	Korea Youth Risk Behaviour Web-based Survey (KYRBS)
O'dea, 2021	Australia	Secondary schools	n= 1,802	Cluster RCT	GAD-7, PHQ-9, Actual Health Seeking Questionnaire (AHSQ), Centre for Epidemiologic Studies Depression Scale – Child version (CES-DC), Distress Questionnaire-5 (DQ5), Barriers to Adolescents Seeking Help - Brief (BASH-Brief), Mental Health Literacy Scale (MHLS)

The sample sizes varied from as low as 30 to 247,222. The study designs were assorted and many had mixed methods elements. The demographics of the study populations were diverse among adolescents; many were inclusive of individuals with and without histories of mental health illness. One study applied a tool to students with long-term physical disabilities and another was specific to students with low socio-economic standing.

Most of the studies utilized long-established, reliable and evidence based mental health diagnostic screening tools, or a combination of several. The two most widely used diagnostic screening tools were the Patient Health Questionnaire (PHQ-9) and the Generalized Anxiety Disorder Questionnaire (GAD-7). They were then often customized to the specific population, which oftentimes required cultural and/or electronic adaptation. This sometimes required language translation or omitting certain questions within the tool that were not deemed appropriate for the population. Some tools even selected just one or two questions from the scales. A few studies

even used these two instruments integrated with a tool the researchers developed.

The studies varied in terms of which specific mental illness was being assessed. Some of the studies were broad in their objectives and aimed to detect psychosocial and lifestyle issues in addition to suicide risk. Other studies clearly stated they aimed to screen exclusively for acute risk of suicide.

There were common themes in the authors' stated limitations. Many of the remotely conducted studies expressed concern about participants not having a smartphone and to what degree of attrition that would affect the sample. A few studies noted difficulties with WiFi access and low participation rates. A study conducted in South Korea discussed mental health stigma and considered that participants could have lied about past psychiatric history, affecting screening results (Jang et al., 2017). However, there were generally positive results in sensitivity, validity, feasibility, and acceptability in the majority of the tools.

The setting of Test: School "MeMind"

Martínez-Nicolás et al. (2022) performed a representative cross-sectional study on the mental health of adolescents in Mexico City. "MeMind" is a smartphone-based mental health screening intended to target high school students. Using the PHQ-9, Columbia-Suicide Severity Rating Scale (C-SSRS), World Health Organization Well-being Index (WHO-5) and a shortened version of GAD-7, students were screened for anxiety, depression, suicidal ideation along with their perceived well-being. With almost 3,000 participants they successfully administered the screening. They found that females had higher rates of anxiety, depression, and suicidal ideation than males. It was concluded that this large-scale mental health screening using an online tool proved feasible with high response rates.

"Use of a smartphone application to screen for depression and suicide in South Korea"

This 2017 study used a smartphone application to screen for depressive symptoms and suicidal ideation with a large sample size (n=208,603) in South Korea. While the test was held at a school facility, the screening was exclusively on the smartphone application and could be taken at any location if necessary. Additionally, the researchers wanted to examine factors that contribute to depression and suicidal ideation (Jang et al., 2017). Demographic data including past psychiatric history, were collected in the questionnaire to classify the results. If the scores for depression or suicide were high, the participant received recommendations to seek out professional help and were sent a credible source for more information on depression and suicide. The study concluded that the smartphone application is easy and quick to use as a tool for screening for depression and suicide. These study results are similar to the results of previous research studies, which support the validity of a smartphone application tool to screen for depression and suicide.

"Self-Harm Screening Inventory (SHSI) Screening Tool Validation"

A mixed-methods study was conducted with the aim of developing and validating a screening tool to measure various forms of self-harm behaviors among South Korean youth (Kim et al., 2022). This study assessed the psychometric properties of the tool itself. Prior to this study, researchers noticed a significant lack of culturally appropriate resources to measure the mental health of adolescents in Asian countries. They recruited 514 adolescents aged 12 to 16 from all over South Korea and asked them to complete an online questionnaire. This questionnaire measured their self-reported levels of NSSI, self-esteem, anxiety and depression. After analyzing the results, researchers eliminated 10 of the 20 items on the questionnaire. A final version of the SHSI

was then created and included 10 questions on self-harm behaviors within the past year. Statistical analyses were completed and it was shown that the SHSI tool was a valid and reliable measurement for NSSI screening in South Korea adolescents.

"Smooth Sailing"

Smooth Sailing is another online, school-based mental health service for depression and anxiety that has been tested for use in Australia (O'dea, 2019). The self-report mental health screener contains two validated measures: the PHQ-9 and GAD-7. The service was created with young people and psychologists as stakeholders. It was validated through a randomized control trial and found to be successful in identifying new cases of mental health problems (O'Dea et al., 2021). Authors recommended "modifying consent procedures, ensuring school counselor availability, improving completion of modules, and removing service barriers related to accessibility" to improve the quality and effectiveness of the service. Participants found the service easy to use and understand. Results showed a statistical difference that favored the intervention group, suggesting that students' intentions to seek help for mental health problems may be improved through Smooth Sailing.

Additional Studies in a School Setting

Several other tools were notably relevant that took place in a school setting. A cross sectional study tested the "Korea Youth Risk Behavior Web-based survey," an online self-reported questionnaire of more than 100 questions for pupils to complete in a school computer room (Lee et al., 2019). It was determined to be a practical risk calculation tool.

The SHIELD Project was a large-scale randomized control trial in 14 high schools in the United States (Sekhar et al., 2022) which aimed to detect suicide risk and increase initiation of mental health services. The tool used the PHQ-9 scale and resulted in a 9.6% identification rate through universal screening and a 4.0-fold greater chance of initiating treatment.

Luijten et al. (2019) quantitatively tested the psychometric properties of the Mental Health-Continuum-Short Form among Dutch adolescents to screen for mental health issues. This proved to have good internal consistency and validity.

Vawda et al. (2017) reported on a screening tool for teachers to identify suicide in South African Students. The tool used several established instruments such as the Beck Depression Inventory, the Perceived Stress Scale, the Anger Scale and the Mastery Scale. The sensitivity of the results was low and the tool may require refinement, but can be a useful starting point for teachers to refer students for mental health treatment.

The setting of Test: Clinical

"YouthCHAT"

YouthCHAT is an electronic and tablet-based self-administered multi-item screening tool for mental health concerns in young people (Thabrew et al., 2019; Thabrew & Good, 2019). Originally developed in 2016, it has been validated in both clinical and non-clinical settings, and found to be user-friendly, time efficient, and culturally safe. Studies support its use for early identification of common psychosocial problems in young people, including possible use as a school-based health check. The program is in the process of wider-scale implementation across further settings. A randomized control trial compared the technology to a traditional in person assessment, and YouthChat was found to be quick, reliable, and acceptable to both students and staff in a high school setting.

"Adolescent Suicide Protocol Assessment (ASAP-20)"

The purpose of this study was to validate and culturally translate the ASAP-20 instrument to the youth population in Sri Lanka (Malalagama et al., 2018). Originally developed in the United States, the tool contained questions that were centered around

U.S. culture and were not transferable to other countries. The tool screened for mental health but also included questions that assessed the risk of violence and "access to firearms." The researchers of this study found that this was not culturally relevant to Sri Lanka so they followed the process of translation which was then followed by a cultural adaptation. A panel of psychiatrists then examined the new product; they assessed the content, concepts, semantics and construct validity. The adapted version was then given to 100 children aged 10-19, who were fluent in Sinhalese, with suicidal ideation or a suicide attempt. After statistical testing, the Sinhalese adapted version of the ASAP-20 demonstrated satisfactory content, construct validity and operational equivalence to the original ASAP-20 instrument. In conclusion, the Sinhalese ASAP-20 is a successful screening instrument that can be used in clinical as well as nonclinical settings.

"Comprehensive Online Self-monitoring"

In a 2017 Australian mixed methods longitudinal cohort study, a comprehensive online self-monitoring tool was studied (Hetrick et al., 2017). The tool was compromised of the PHQ-9 questionnaire and the Suicidal Ideation Questionnaire (SIQ) to measure the severity of depression and suicidal ideations and wanted to determine if a shorter tool could be implemented. 101 participants, aged 12-25, utilized the online tool prior to a consultation with a clinician. Study participants found the tool acceptable and useful. Results however could not justify use of the shortened version of the tool.

Additional Studies in a Clinical Setting

Stewart et al. (2020) tested an algorithm developed from the Child and Youth Mental Health (ChYMH) assessment tool to identify the most high-risk suicide cases in children who were already seeking mental health services. Screeners ranging in disciplines were provided a full day training course. The screening involved a semi-structured interview either in person or online. The software also takes into account information from family members and clinical observations. It was ultimately validated in 59 agencies and found to be a psychometrically sound decision support tool.

"Project Save" is a novel online intervention to reduce and test for NSSI and suicidal ideation in adolescents (Dobias et al., 2021). The tool used the Children's Depression Inventory-2, the Self-Hate Scale, and two questions from the Self-Injurious Thoughts and Behaviors Interview. 80% of participants completed the intervention and results indicated improvements in self-hatred and desire to stop future NSSI.

Iorfino et al. (2017) used a variety of long-existing tests including the Kessler-10 questionnaire (K10), Suicide Ideation Attributes Scale (SIDAS), and the Altman self-rating scale to screen for general psychological distress in youth before having a visit with their provider. Patients were recruited from their primary care mental health provider or through the community. 66% of participants reported varying degrees of suicidality and were given a real-time online alert before seeing their mental health care provider.

The setting of Test: Remote

"Be Present"

An innovative digital mental health program "Be Present" aims to identify high-risk youth in the early phases of prevention (Albritton et al., 2019; Parker et al., 2020). The intervention primarily focused on peer support and advocacy, with the evidence based rationale that youth are more likely to talk to each other regarding suicidality than to adults. The online digital campaign involves training modules and surveys. The program has been successful in its implementation and results found an increase in self-report of referrals for mental health services as well as in perceptions that youth had of experiencing social support.

In 2020 Parker et al. applied the Be Present tool in the clinical setting; they named

it the Youth StepCare service (Parker et al., 2020). It was found that the tool can be easily integrated into clinical practice and it proved useful for identifying symptoms of mental illness.

Discussion. The results of this study have given insight into the available tools for screening mental health, self-harm, and suicidal ideations in adolescents. With the research question being, what are the available screening techniques suitable/applicable for detecting suicidal tendencies and/or self-harm in school aged children in online learning conditions, this scoping review was able to effectively answer that question.

Research demonstrates substantial strategies for detecting suicidal tendencies and/or self-harm in school-aged children in online learning conditions. Many of the studies creatively used already established health system resources and standardized instruments. This scoping review illustrates that it is possible to adapt these tools for implementation even in low-resource settings successfully.

The most common themes discussed in the literature were questions regarding acceptability, feasibility, internet privacy, and safety planning. These themes were consistent with findings from several other scoping reviews related to the topic.

Feasibility and Acceptability of the Screening Tools

A common outcome tested was the feasibility and acceptability of the proposed tool. Eleven out of the eighteen included articles were focused on feasibility and perceived acceptability or included as a part of the evaluation. This was not an expected result. Most articles did not define feasibility or acceptability but after reviewing each one of them it can be assumed that these definitions from outside literature sources will be appropriate. Eldridge et al. (2016) described feasibility as "A [feasibility] study asks whether something can be done, should we proceed with it and if so, how." Ayala & Elder (2011) describes acceptability as "Acceptability refers to determining how well an intervention will be received by the target population and the extent to which the new intervention or its components might meet the needs of the target population and organizational setting."

Feasibility and acceptability were typically measured by a questionnaire after the screening tool had been used. The most common barrier to this was that some students did not have internet access to utilize the tool, which created complexities in each study. It was reported in articles of the scoping review that students often sought out the assurance that their answers would be confidential. Again, not all studies measured feasibility and acceptability, but the ones that did generally showed a majority positive response among participants in the included studies.

One of the tools seen frequently during this scoping review was Youth CHAT. Youth CHAT was used in the clinical and school setting to screen for psychosocial and lifestyle issues (Thabrew et al., 2019; Thabrew & Good, 2019). After completing the scoping review an additional study was found that specifically looked at the feasibility and acceptability of Youth CHAT. Clare et al. (2022) found that all participants agreed Youth CHAT was acceptable across five domains: "time efficiency, the value of information, its effect on student engagement, ease of use, and perceived acceptability to students."

It seems that an important component in the development of a new screening tool is that it is feasible and accepted before the effectiveness can be tested. Only a few articles in the scoping review looked at the effectiveness of tools, so with this logic it is possible that these concepts were never tested, were not published, or we were unable to find their feasibility and acceptability results. As this analysis emerged from the results, it is important to discuss the implications briefly. Additional research has also supported the idea that feasibility and acceptability are vital in the

initial stages of new instrument development. As stated by (Ambagtsheer et al., 2020), "Assessing feasibility is a critical preliminary step in assessing the efficacy of interventions such as screening." Most studies that looked at feasibility and acceptability were pilot studies. Looking further into supplementary research, we found that "conducting a pilot before the main study can enhance the likelihood of success of the main study and potentially help to avoid doomed main studies" (Thabane et al., 2010). Therefore, in the future development of online tools that screen for mental health, self-harm, and suicidal ideations, the testing of feasibility and acceptability needs to be prioritized before the implementation.

Implications for future research, policy and/or practice

Acceptability is a critical concept when evaluating and selecting an instrument and can also be described in relation to "youth engagement." This could involve asking the youth what they would need and feel comfortable with during a virtual screening. It is essential to find ways to meet their preferences and ensure they feel comfortable. Exner-Cortens et al. (2021) suggested reassuring the youth that they can be informal, use emojis, screen share, and play games. Listening to their experiences can build rapport, increase willingness and improve participation. It is important to note that acceptability should be considered for both the adolescent and the educators, screeners, and other individuals involved in the intervention.

Feasibility was repeatedly mentioned in the majority of analyzed studies as authors hypothesized the practicality of implementation. More specifically, the authors described questions and concerns regarding: time, the skill required to implement, ease of scoring and the capacity of school counselors to manage the follow-ups. This was often assessed through a battery of survey questions. Feasibility should be considered when selecting an appropriate tool for a specific community. For example, smartphone applications hold great potential for scalability; however, may not be feasible if technology and financial resources are not sufficient. Workforce capacity resources should be assessed before preparing for any positive screens.

Internet privacy is also of key importance when working with vulnerable minors. Many of our included studies reported respondents' feeling distrustful towards the services and were concerned for their privacy and anonymity. In many studies, it was surprising to learn that privacy protection was not mentioned or regulated enough. Exner-Cortens et al. (2021) offer suggestions for this matter: encouraging youth to be in a quiet part of their house, using a codeword if someone is in the room listening, and storing information in an encrypted system.

Safety planning is crucial and plans for emergency situations need to be thoroughly discussed. Several studies did not have a clear escalation plan prior to intervention. Authors from the National Association of School Psychologists (Brock et al., 2021) offered guidance for this: identifying local resources that are immediately available to respond to a student's location, maintain regularly updated contact information, educating teachers on what to do in an imminent situation, reaching agreements on how sensitive disclosures will be handled, and consulting with the school district legal counsel. Brenna et al. (2021) recommends screeners verify the youth's identity at the start of the online session and confirm their physical location.

Findings have potential for applicability in web-based school environments, conducting screenings for populations in rural and remote settings, and telehealth. Future studies should expand on the current literature by continuing to modify the existing tools and improve their sensitivity. More research is needed to investigate the impact of screenings on school counselors, parents, and adults involved to better understand their needs, experiences, and the

implications of how such a program would affect the community. There is also a need for research performing these screenings in areas of conflict to indicate the barriers or additional challenges that arise from that.

It is worth noting that there is currently ongoing research into evaluating online social media activity for suicide screening (Chatterjee et al., 2022). This technology has advanced and can even detect risk based on factors such as tweet length, posting time, and emoticon usage. We did not include any of these studies in our review due to their controversy and need for additional research in a school setting. Collins et al. (2021) notes issues with these monitoring systems: privacy concerns (i.e. disclosure of personal information such as sexual orientation or citizenship status), and students being mistakenly flagged (Collins et al., 2021).

Prospects for adapting tools to the Ukrainian context

There are feasible and acceptable tools available for screening mental illness in adolescents, but it is inconclusive whether any of these tools will be effective in Ukraine due to the circumstances. Ukrainian school districts should proceed cautiously and thoroughly review the feasibility and acceptability research before implementing a screening tool.

Digital technologies and apps meet active implementation in the activities of the government, the educational process, public life, and military affairs in Ukraine. However, the tools for distance diagnosis of mental health risk factors are developing slowly in Ukraine.

As we said above, implementing such tools in the system of suicide prevention in an educational institution is essential.

At the same time, to solve this problem, there are significant obstacles that must be overcome. First of all, there is a limited number of original or adapted for the Ukrainian sample methods of diagnosing suicidal tendencies among school children. Transferring poorly adapted techniques to an online format may pose the threat of creating an inaccurate or even dangerous diagnostic tool.

It is also worth noting the Ukrainian population's low level of digital literacy by European standards. According to UNDP data, 53% of Ukrainians (aged 17 to 70) have digital skills at the "below average" level, and 15% have no such skills (Udovyk, Moskalenko, & Kylymnyk, 2020).

However, the expressed reservations do not negate the need to develop and implement remote diagnostic tools in Ukraine, given their urgency.

The first step of this work can be the digitization or adaptation to online use of methods that have proven themselves well in the practice of the psychological service of the education system, for example, the Suicidal Intent Detection Test by N. Shavrovska, O. Goncharenko, I. Melnikova (Panok, 2018).

CONCLUSIONS

Emerging technologies can augment traditional approaches during virtual suicide assessment. This research can offer promising direction into the facilitation of screening adolescents electronically in distance learning conditions. While our results were encouraging in terms of delivering effective screenings in many different settings, none of the studies took place in the current context of Ukraine. While these innovative tools can certainly help overcome many of the challenges associated with screening youth remotely, the tools in their current form cannot substitute for psychological and mental health support. With careful planning and research, it is possible to effectively accomplish screenings for these students and ensure they receive the appropriate mental health care as soon as possible.

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Світлана Чуніхіна[1], Керолайн Додсон[2], Елен Онен[2]

[1] Інститут соціальної та політичної психології НАПН України, м. Київ, Україна
[2] MSc Global Health в Університеті Вріє, Амстердам, Нідерланди

ORCID ID: 0000-0002-0813-67415 *s.chunikhina@ispp.org.ua*

СКРИНІНГ СУЇЦИДУ СЕРЕД УЧНІВ В УМОВАХ ОНЛАЙН-НАВЧАННЯ: АНАЛІТИЧНИЙ ОГЛЯД

Ризик дитячих та юнацьких самогубств в Україні зріс після початку російсько-української війни. Також існує висока ймовірність зростання самогубств серед усіх вікових, гендерних і соціальних груп після закінчення активних бойових дій і настання миру. Таким чином, українські студенти та учні потребують регулярного скринінгу на схильність до суїциду та самоушкодження, щоб отримати своєчасне профілактичне чи терапевтичне втручання. Однак через умови дистанційного навчання більшість з них має обмежений доступ до діагностики та допомоги.

Метою статті є огляд доступних методів виявлення (скринінгу) суїцидальних тенденцій та/або самоушкоджувальної поведінки у дітей шкільного віку, придатних до застосовування в умовах онлайн-навчання.

Методологія. Для ідентифікації та аналізу доступної літератури було обрано метод scoping review. До огляду включено статті, опубліковані англійською мовою протягом останніх п'яти років, присвячені виявленню суїцидальних тенденцій в учнів віком 5-19

років. Бази даних пошукових систем включали Scopus і Web of Science. Застосовувався також метод «Вирощування перлів».
Результати. Зрештою 18 із 996 ідентифікованих статей було включено до огляду. Більшість досліджень використовували давні, надійні та доказові інструменти скринінгу або їхню комбінацію. Двома найбільш широко використовуваними інструментами скринінгу були Анкета здоров'я пацієнта (PHQ-9) і Анкета генералізованого тривожного розладу (GAD-7). Ми визначили три групи цифрових інструментів, розроблених на цій основі: для шкільного, клінічного та дистанційного використання.
Висновки. Нові технології можуть розширити традиційні підходи під час віртуальної оцінки самогубства. Це дослідження може запропонувати перспективний напрямок розвитку технологій електронного скринінгу дітей шкільного віку в умовах дистанційного навчання. Завдяки ретельному плануванню та додатковим дослідженням можна ефективно проводити скринінги для українських учнів і студентів, і гарантувати, що вони отримають відповідну психологічну допомогу якнайшвидше.

Keywords:

самогубства дітей шкільного віку, інструменти скринінгу, дистанційне навчання,

Україна, війна, огляд літератури