National Institute for Health Development

Measurement Tools for Risk- and Protective Factors Associated with Mental Health and Risk Behaviour in Children and Young People

Summary

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1 Background

Preventive interventions for children and young people aim to avert problems that compromise their mental or physical well-being. These problems include mental health issues, such as anxiety and depression, as well as harmful or unwanted behaviours, such as substance abuse, violence, delinquency, risky sexual behaviour, and school dropout. Many of these consequences are affected by a similar set of risk- and protective factors. A risk factor is defined as a measurable characteristic that precedes and is associated with an outcome (1). Protective factors (also sometimes called assets) are characteristics associated with a lower likelihood of problem outcomes or a reduction of the negative impact of a risk factor (2, 3). Risk and protective factors are found at multiple levels of the relationship between the young person and their environment. These levels include individual characteristics (e.g. self-esteem, social skills, attitudes), the family (e.g. parental supervision, family conflict, substance use among parents), school (e.g. academic achievement and commitment), peer group (e.g. risk behaviour of peers, peer rejection), and community (e.g. community disorganisation, societal norms) (4).

To develop effective interventions, it is necessary to understand how these factors relate to the relevant outcomes in the target population. Preventive approaches can then be developed to change the most influential factors or to help define populations that are most at risk. To achieve this, data can be collected regularly on a local level to identify the main problems and the associated risk- and protective factors. Over the past few decades, several measurement tools have been developed for this purpose. The current document aims to summarise the available measures, focusing specifically on self-report measurement tools for children and young people that collect information on potential risk- and protective factors for outcomes related to mental health, wellbeing, and behaviour. The document also includes an analysis of the risk- and protective factors most commonly measured by these instruments and describes some practical considerations for selecting and implementing the most appropriate tools.

2 Method

Two electronic databases, Web of Science and Google Scholar, were searched for articles pertaining to the measurement of risk- and protective factors for mental health and behavioural outcomes in children and young people. Keywords used for the search included: terms related to the concept of risk- and protective factors (risk factors, protective factors, assets); terms specifying the age of the target population (child(ren), youth, young, student, adolescent, teenage(r)); and terms describing the relevant outcomes of the measures (mental health, wellbeing, quality of life, drug, substance, behaviour, violence, criminal, school dropout, depression, anxiety). The search was conducted in December 2021.

The search results were scanned for papers that described or applied a measurement tool for multiple risk- and protective factors for the aforementioned outcomes (i.e. excluding papers that focused only on a single risk factor or that did not report the exact scale or questions used). The measurement tools found then had to satisfy the following inclusion criteria:

- ✓ Be available in English;
- ✓ Be available for public use (either for free or for a fee);
- ✓ Be available as self-report measures for children or young people (measurement tools meant to be used by parents and teachers were analysed separately);
- ✓ Be focused on predicting or preventing mental health and behavioural outcomes, rather than solely screening for already existent symptoms or disorders;
- ✓ Be sufficiently different from other previously existing questionnaires (i.e. excluding, for example, local variations of the CTC Youth Survey where minimal modifications had been made to the original questionnaire).

Each included measurement tool was then researched further to identify relevant aspects related to its use.

For each measure, questions included in the survey were reviewed in order to identify the risk- and protective factors measured by each tool. These factors were then categorised according to the socio-ecological domains that are widely used in the risk- and protective factors literature (individual, family, peers, school, and community domains). Additional (sub)categories were created in some cases to further organise the identified risk- and protective factors.

3 Overview of the Measurement Tools

16 measurement tools were identified and are summarised below in Table 1. A more comprehensive overview, including details on the development, psychometric properties, implementation procedures, and usage history of each questionnaire, can be found in the attached supplementary document "Overview_of_Measures.xlsx".

Table 1. Summary of Measurement Tools

Measure	Target age group	Description	Terms of use
Communities That Care Youth Survey (CTCYS) (5)	11+	Questionnaire measuring a range of behavioural outcomes and risk and protective factors associated with drug use, crime, violent behaviours, delinquency, school dropout and mental health problems. Risk- and protective factors are measured in four domains: community, school, family and peer/individual.	Free to use (public domain)
Child RADAR (6) **and Youth RADAR** (7)	8-12 11-16	Screener for risk and protective factors associated with mental health difficulties. Factors include school connectedness, family relations, academic success, peer acceptance, sporting interest, and acceptance of appearance.	Free to use (translations must be approved by the original developers)
Revised Youth Asset Survey (YAS-R) (8)	13+	Measure of youth assets and health-related behaviours. Assets measured include family communication and relationships, parental monitoring, peer role models, community involvement, cultural respect, good health practices, use of time, religiosity, school connectedness, general self-confidence, aspirations for the future, non-parental role models, and responsible choices.	Free to use
Student Resilience Survey (SRS) (9)	7+	Survey measuring students' perceptions of their individual characteristics and protective factors, including communication and cooperation, self-esteem, empathy, problem solving, goals and aspirations, family connection, school connection, community connection, autonomy experience, pro-social peers, meaningful participation in community activity and peer support.	Free to use (further information about copyright available from the author)
Attitudes and Behaviors (A&B) Survey (10)	11+	Assessment of the strengths, supports, and social-emotional factors related to young people's success in school and life. The survey measures developmental assets (*see DAP*), risk-behaviour elements and patterns, social- and emotional skills, thriving indicators, and developmental deficits.	Fee required
Developmental Assets Profile (DAP) (11)	9+	Social-emotional assessment tool for developmental assets, including positive supports, opportunities, and relationship qualities (external assets) and personal skills, social emotional strengths, self-perceptions, and values (internal assets).	Fee required
KIDSCREEN (12)	8+	Instrument assessing children's and adolescents' subjective health and well-being. Dimensions measured include Physical Well-being, Psychological Well-being, Moods and Emotions, Self-Perception, Autonomy, Parent Relations and Home Life, Social	Free for non-commercial use (Approval of the original developers is needed for access and translation)

		Support and Peers, School Environment, Social Acceptance (Bullying), and Financial Resources.	
Positive Youth Development Student Questionnaire (PYDSQ) (13)	10+	Questionnaire used to model pathways of positive youth development and outcomes such as contribution, depression, and risk behaviour. The student questionnaire measures the 5 C's (Competence, Connection, Confidence, Caring and Character), developed by Lerner et al.	Free to use (public domain)
KINDL-R (14)	4-6 7-13 14-17	Short instrument for assessing Health-Related Quality of Life in children and adolescents. Constructs measured include physical wellbeing, emotional well-being, self-esteem, family, friends, and everyday functioning.	Free for non-commercial use (translations must be approved by the original developers)
Multidimensional Students Life Satisfaction Scale (MSLSS) (15)	8-18	Survey designed to provide a profile of children's life satisfaction across the domains of family, friends, school, living environment, and the self.	Free to use (public domain)
Health Behavior in School-aged Children (HSBC) (16)	11-15	International project studying children's health and well-being, social environments and health behaviours. The core questions provide information on demographic factors, social background (e.g., family structure and socio-economic status); social context (e.g., family, peer culture, school environment); health outcomes, health behaviours and risk behaviours.	Requires membership of the HBSC network
International Survey of Children's Wellbeing (ISCWeb) (17)	8-12	Survey on children's subjective well-being, comprising the domains of the children's home and the people they live with, money and things they have, relationships with friends and other people, the area where they live, school, health, time management and leisure time, and the self.	Second wave questionnaires are free to use (Children's Worlds project should be indicated as a reference)
Pediatric Quality of Life Inventory (PedsQL) (18)	5-7 8-12 13-18 19-25	brief measure of health-related quality of life in children and young people, comprising physical functioning, emotional functioning, social functioning, and school functioning.	Free to use in non-funded academic research. Fee required for other uses
Strengths and Difficulties Questionnaire (SDQ) (19)	4-17	Brief emotional and behavioural screening questionnaire that covers emotional symptoms, conduct problems, hyperactivity/inattention, peer relationships, and prosocial behaviour.	Free for non-commercial use (documents should not be modified)
Planet Youth (PY) Survey (20)	12-19	Comprehensive lifestyle questionnaire examining young people's substance use, health, mental health, physical activity, family and school experience, internet use, bullying, and more.	Fee required
my Social, Academic, and Emotional Behavior Risk Screener (mySAEBRS) (21)	7+	Brief behavioural screener for risk of social-emotional behaviour problems. Domains measured are social behaviour, academic behaviour, and emotional behaviour.	Fee required

3.1 General Purpose and Structure of the Measurement Tools

Of the measurement tools found, most are designed to measure factors associated with general mental health, wellbeing and risk behaviour. Exceptions include questionnaires aimed at predicting more specific outcomes - the Planet Youth Survey, designed mainly to measure factors associated with substance abuse, and mySAEBRS, intended to predict social-emotional behavioural problems. The choice of a measurement tool would therefore depend on the outcome of interest.

Another consideration could be that some questionnaires (e.g. CTCYS, RADAR) are specifically said to measure risk- and protective factors, while others (e.g. KIDSCREEN, ISCWeb, KINDL-R) are more geared towards measuring young people's overall quality of life. Both types, however, measure many of the same factors, such as relationships with family and peers, living environment, and individual psychological factors.

While most measures include both risk- and protective factors, certain questionnaires focus only on protective factors (YAS-R, DAP, and PYDSQ). These questionnaires may be appropriate to use for interventions aspiring to increase protective factors or aiming to work with the assets that young people already possess. For projects that are also interested in identifying relevant risk-factors, however, it may be more appropriate to use different questionnaires or combine risk- and protective factor questions from several surveys.

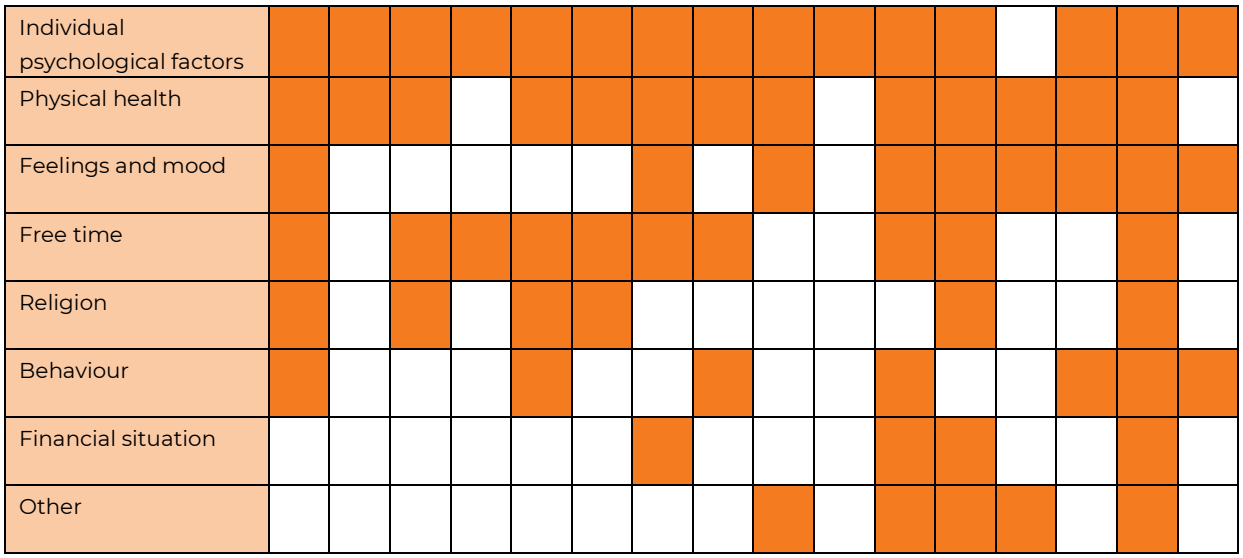
3.2 Risk- and Protective Factors

In general, the risk- and protective factors measured by the questionnaires could be organised into similar categories, representing the child's experience with their family, peers, school, community, and various individual factors. Some questionnaires were built on a slightly different model, for example, the PYDSQ was based on the 5 C's model (representing Competence, Connection, Confidence, Caring and Character), and questions in the mySAEBRS and SDQ focused more on different categories of behaviour.

Table 2 shows the risk- and protective factor categories included in each questionnaire. A more comprehensive summary, including a more detailed list of factors and example questions for each factor, can be found in the supplementary document "Risk-_and_Protective_Factors.xlsx". A brief description of each factor category is also included below.

Table 2. Overview of Risk- and Protective Factor Categories Measured by Each Questionnaire

	CTCYS	RADAR	YAS-R	SRS	A&B	DAP	KIDSCREEN	PYDSQ	KINDL-R	MSLSS	HSBC	ISCWeb	PedsQL	SDQ	PY Survey	mySEABRS
Family	■	■	■	■	■	■	■	■	■	■	■	■			■	
Peers	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
School	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Community and living environment	■		■	■	■	■		■		■		■			■	



Questions about the child's family relationships were included in most surveys. Most common factors in this category included items measuring general relationships and getting along with family members (e.g. "My family gets along well together"), social support (e.g. "My parents give me help and support when I need it"), willingness and opportunity to discuss one's activities or problems with family members ("If I had a personal problem, I could ask my mum or dad for help"), and parental monitoring and rules ("The rules in my family are clear"). Other slightly less often measured factors included spending time with the family, feelings of safety, family conflict, and involvement of the child in family decision-making.

All surveys included some questions tapping into the child's relationships with their peers or friends. Common factors in this category included the existence and number of friends ("I have enough friends"), bullying and ostracism ("Have other girls and boys bullied you?"), and positive relationships and social support from friends ("My friends will help me if I need it"). Factors like popularity, peer pressure, and peer behaviour were also covered in some surveys.

School-related factors were also measured in each questionnaire and included factors like academic success ("Putting them all together, what were your marks like last year?"), safety at school ("I feel safe at my school"), relationships with teachers ("My teachers care about me"), and the child's attitudes and feelings towards school ("I like being in school", "School is interesting").

Questions pertaining to the child's community and living environment most often asked about opportunities for prosocial involvement and leisure activities in the neighbourhood ("I'm given lots of chances to make my town or city a better place in which to live", "In my area there are enough places to play and have a good time"), and relationships with other community members ("In my neighbourhood, there are lots of people who care about me"). Community disorganisation (crime, lack of surveillance, fights etc) and satisfaction with one's living environment were also included in some surveys.

Most surveys also measured various individual factors. Most common psychological factors included self-esteem ("On the whole, I like myself"), goals and vision for the future ("I feel positive about my future"), and self-efficacy or coping with problems ("I can usually handle whatever comes my way"). Various other factors, like empathy, social skills, morality, attitudes, and personality dimensions were included in some studies.

Physical health was usually measured by asking about general health, physical activity, and diet.

Other slightly less commonly measured factors included questions about recent feelings and mood (e.g. life satisfaction and negative emotions, such as sadness, stress or fear), use of free time (e.g. hobbies, watching TV, spending time online), importance of religion in the child's life, different problematic behaviours (e.g. aggressive behaviour, stealing, substance use), and the child's family's financial situation.

Questions in the "Other" category included factors like experiencing sexual harassment or abuse, the child's health-related knowledge, and worries about the future.

Since different questionnaires measure slightly different risk- and protective factors, the selection of the most appropriate measurement tool would depend on which factors are of most interest. Based purely on the number of factor categories covered in a survey, the tools standing out as most comprehensive include the PY Survey, CTCYS, and ISCWeb. Of course, other considerations may also be relevant. For one, the surveys can differ on how thoroughly each category is covered. The CTCYS, for example, includes many factors on community, school and family, but fewer on peer relationships. The ISCWeb, which has a more thorough coverage of peer factors, includes slightly fewer individual factors that some other surveys. Conversely, the DAP covers the largest variety of individual psychological factors but does not include any risk factors. Therefore, in some cases, the most appropriate option may be to combine questions or question blocks from several different questionnaires. In that case, though, the terms of use for the questionnaires should be kept in mind as some copyright owners may not allow modifications to the original questionnaire.

3.3 Implementation and Use

Another important consideration is, of course, the practicality and implementation of the measurement tool. Most tools mentioned above are completed by the child by hand or on the computer. The YAS-R was originally meant to be conducted as an interview but could potentially also be adapted into questionnaire form.

Most questionnaires have been used at the community or school level, with some (HSBC, KIDSCREEN, KINDL-R, ISCWeb) also having been used in national or international studies. The questionnaires are usually filled out at school, administered by a teacher or researcher. The questionnaire data are then normally analysed directly by the conductors of the study. Exceptions to this are the paid questionnaires A&B, DAP, PY Survey, and mySAEBRS, for which support with data analysis is included in the cost, and the HSBC, where country-level data are analysed centrally by the DMC. For the SDQ, a paid report can also be ordered from Youth in Mind.

The questionnaires also differ in length. The shorter questionnaires (taking around 3-10 min) include RADAR, SRS, DAP, KINDL-R, PedsQL, SDQ, and mySAEBRS. The rest of the questionnaires take somewhere between 10-50 min. While longer questionnaires may be preferable if a more comprehensive overview is desired, the short questionnaires may be appropriate if limited time and resources are available for implementing or analysing the questionnaire.

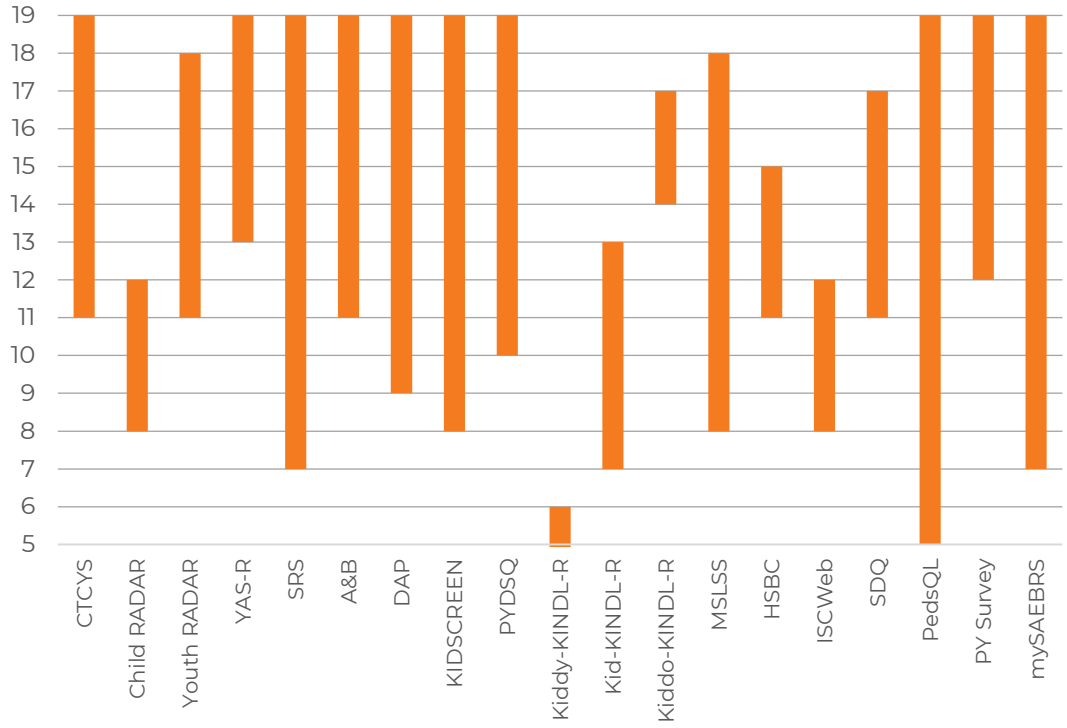
Finally, the selection of a measurement tool may be influenced by what the overall goal of implementing the survey is. While some researchers may simply wish to map the current situation or study the relationship between certain risk factors and outcomes, in practice, the ultimate goal is often to select or develop an effective intervention to help change the prevalence of certain factors. In theory, most of the questionnaires mentioned above could give valuable insight for that purpose. However, it may also be useful to know that four of the measurement tools are already linked with an existing intervention programme or framework:

- ✓ The CTCYS forms a part of the Communities that Care prevention system. The youth survey is used to identify a community's risks and strengths. Based on these data, CTC helps select and implement tested prevention programmes or amplify programmes already in use (22).
- ✓ The PY Survey is used in the Planet Youth model (a.k.a. the Icelandic model) to help form goals for reducing risk factors and strengthening protective factors. Changes are then made to the environments of children and adolescents in order to achieve these goals (some changes may include e.g. meetings between prevention workers and parents, increasing funding for organized recreational and extracurricular activities, or policy changes regarding outside hours) (23).
- ✓ The PYDSQ was developed as part of the 4-H Study of Positive Youth Development. In 4-H programmes, children and adolescents complete hands-on projects in areas like health, science, agriculture and civic engagement under the guidance of adult mentors (24).
- ✓ mySAEBRS aligns with social-emotional learning (SEL) programmes, which aim to promote self-awareness, self-management, social awareness, relationship skills, and responsible decision-making via the school's academic curricula and collaboration with families and community organisations (25).

3.4 Age-related Differences

A summary of the target age ranges for each questionnaire is shown in Table 3.

Table 3. Target Age Ranges for Each Questionnaire



Differences between questionnaires meant for younger and older children include the wording of the questions (with simpler wordings used for younger children), but also the content of the questionnaire. Looking at the risk- and protective factors measured across the different questionnaires, most factors (e.g. family and peer relationships, school experience, free time etc.) are measured in both older and younger children. However, there also exist some categories of questions that are only asked from older children and teenagers (11+ years old). Firstly, these include some more sensitive or difficult subjects, such as experiences with domestic or sexual abuse, severe losses or crises in the family, divorce

of parents, or depression. Secondly, the older group is more often asked about peer influence, such as the pressure or perceived need to use drugs and alcohol, or the risk behaviour of peers. Some existing literature also supports the idea that peer influence would indeed be a more significant factor for older children and teenagers. Peer and school factors have been found to be stronger predictors of substance use among older adolescents (26), and association with deviant peers has been shown to have a stronger relation to antisocial behaviour once children reach adolescence (27). Finally, questions tapping into attitudes also seem to be reserved for the older age group. These include the young person's own attitudes towards different risk behaviours and rules, as well as the family's and community's attitudes towards such behaviour. Research on the developmental trajectory of the influence of attitudes on risk behaviour is somewhat limited, although some work does suggest that the impact of pro-drug attitudes on drug use peaks around middle adolescence (28).

Given these differences, it would be important to select a questionnaire that is appropriate for the target age group. However, in some cases, the age range of interest may not exactly match the intended age range of any one questionnaire. Studying younger children (5-8 years old) may be especially complicated since in-depth self-report measures for this age group are understandably limited. In this case, using a parent or teacher proxy questionnaire may be appropriate. Of the questionnaires mentioned above, KIDSCREEN, KINDL-R, PedsQL, and SDQ have parent versions available. SDQ and SAEBRS also have versions meant for teachers. In theory, it may also be possible to adapt parts of other questionnaires for parents or teachers. In general, teacher (and to some extent, parent) questionnaires tend to be more focused on observable behaviour of the child and may understandably lack insight on some private thoughts and feelings of the child. Nevertheless, they could be good options for when using a self-report measure is not possible. In fact, even if a self-report version is available for children, combining this with a parent and/or teacher questionnaire could provide valuable additional information. Findings from studies that have investigated quality of life perceptions of children and their parents show some inconsistencies between the two reports but highlight the importance of gaining multiple perspectives on the child's wellbeing (29).

References

1. Kraemer HC, Kazdin AE, Offord DR, Kessler RC, Jensen PS, Kupfer DJ. Coming to terms with the terms of risk. Archives of general psychiatry. 1997 Apr 1;54(4):337-43.
2. National Research Council. Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities. 2009 Feb 13.
3. Masten AS, Powell L. A Resilience framework for research, policy. Resilience and vulnerability: Adaptation in the context of childhood adversities. 2003 May 5;1.
4. Youth.gov. Risk and Protective Factors for Youth. https://youth.gov/youth-topics/youth-mental-health/risk-and-protective-factors-youth. Accessed Jan 26, 2022
5. Arthur MW, Hawkins JD, Pollard JA, Catalano RF, Baglioni Jr AJ. Measuring risk and protective factors for use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. Evaluation review. 2002 Dec;26(6):575-601.
6. Burns JR, Rapee RM. School-based assessment of mental health risk in children: the preliminary development of the Child RADAR. Child and adolescent mental health. 2019 Feb;24(1):66-75.
7. Burns JR, Rapee RM. Screening for mental health risk in high schools: The development of the Youth RADAR. Psychological assessment. 2016 Oct;28(10):1220.
8. Oman RF, Lensch T, Amroussia N, Clements-Nolle K, Lu M, Yang Y. The revised youth asset survey (YAS-R). American Journal of Health Promotion. 2019 Jun;33(5):768-73.
9. Sun J, Stewart D. Development of population-based resilience measures in the primary school setting. Health education. 2007 Oct 23.
10. Search Institute. The Attitudes and Behaviors (A&B) Survey. https://www.search-institute.org/surveys/choosing-a-survey/ab/. Accessed Jan 26, 2022
11. Search Institute. Developmental Assets Profile. https://www.search-institute.org/surveys/choosing-a-survey/dap/. Accessed Jan 26, 2022
12. Ravens-Sieberer U, Gosch A, Rajmil L, Erhart M, Bruil J, Duer W, Auquier P, Power M, Abel T, Czemy L, Mazur J. KIDSCREEN-52 quality-of-life measure for children and adolescents. Expert review of pharmacoeconomics & outcomes research. 2005 Jun 1;5(3):353-64.
13. Lerner RM, Lerner JV, Almerigi JB, Theokas C, Phelps E, Gestsdottir S, Naudeau S, Jelicic H, Alberts A, Ma L, Smith LM. Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents: Findings from the first wave of the 4-H study of positive youth development. The journal of early adolescence. 2005 Feb;25(1):17-71.
14. Ravens-Sieberer U, Bullinger M. Assessing health-related quality of life in chronically ill children with the German KINDL: first psychometric and content analytical results. Quality of life research. 1998 Jul;7(5):399-407.
15. Huebner S. Multidimensional students' life satisfaction scale. University of South Carolina, Department of Psychology, Columbia, SC. 2001 Feb 28;29208:319-21.
16. Health Behaviour in School-aged Children. http://www.hbsc.org/. Accessed Jan 26, 2022
17. International Survey of Children's Well-being. https://isciweb.org/. Accessed Jan 26, 2022
18. Varni JW, Seid M, Rode CA. The PedsQL™: measurement model for the pediatric quality of life inventory. Medical care. 1999 Feb 1:126-39.
19. Goodman R. The Strengths and Difficulties Questionnaire: a research note. Journal of child psychology and psychiatry. 1997 Jul;38(5):581-6.
20. Planet Youth. Planet Youth Survey. https://planetyouth.org/. Accessed Jan 26, 2022

21. Fastbridge. mySAEBRS (my Social, Academic, and Emotional Behavior Risk Screener). https://www.illuminateed.com/products/fastbridge/social-emotional-behavior-assessment/mysaebrs/. Accessed Jan 26, 2022
22. The Centre for Communities That Care. CTC PLUS. https://www.communitiesthatcare.net/programs/ctc-plus/. Accessed Jan 26, 2022
23. Kristjansson AL, Mann MJ, Sigfusson J, Thorisdottir IE, Allegrante JP, Sigfusdottir ID. Implementing the Icelandic model for preventing adolescent substance use. Health promotion practice. 2020 Jan;21(1):70-9.
24. National 4-H Council. What is 4-H?. https://4-h.org/about/what-is-4-h/. Accessed Jan 26, 2022
25. CASEL. CASEL'S SEL Framework. https://casel.org/casel-sel-framework-11-2020/. Accessed Jan 26, 2022
26. Cleveland MJ, Feinberg ME, Bontempo DE, Greenberg MT. The role of risk and protective factors in substance use across adolescence. Journal of Adolescent Health. 2008 Aug 1;43(2):157-64.
27. Dishion TJ. The peer context of troublesome child and adolescent behavior. 1990.
28. Jang SJ. The effects of family, school, peers, and attitudes on adolescents' drug use: Do they vary with age?. Justice Quarterly. 2002 Mar 1;19(1):97-126.
29. Eiser C, Morse R. Can parents rate their child's health-related quality of life? Results of a systematic review. Quality of life research. 2001 May;10(4):347-57.

Supplementary Documents

Overview_of_Measures.xlsx

Risk-_and_Protective_Factors.xlsx