Implementing School-Based Mental Health Services: A Scoping Review of the Literature Summarizing the Factors That Affect Implementation

Anne Richter 1,2,*, My Sjunnestrand 1,2, Maria Romare Strandh 1,3 and Henna Hasson 1,2

1 Procome Research Group, Department of Learning, Informatics, Management and Ethics, Medical Management Centre, Karolinska Institutet, 171 77 Stockholm, Sweden; my.sjunnestrand@ki.se (M.S.); maria.romare.strandh@khh.uu.se (M.R.S.); henna.hasson@ki.se (H.H.)
2 Unit for Implementation and Evaluation, Center for Epidemiology and Community Medicine, Region Stockholm, 171 29 Stockholm, Sweden
3 Reproductive Health Research Group, Department of Women’s and Children’s Health, Uppsala University Hospital, 751 85 Uppsala, Sweden
* Correspondence: anne.richter@ki.se; Tel.: +46-732-60-30-63

Abstract: Background: Mental illness in children and youths has become an increasing problem. School-based mental health services (SBMHS) are an attempt to increase accessibility to mental health services. The effects of these services seem positive, with some mixed results. To date, little is known about the implementation process of SBMHS. Therefore, this scoping review synthesizes the literature on factors that affect the implementation of SBMHS. Methods: A scoping review based on four stages: (a) identifying relevant studies; (b) study selection; (c) charting the data; and (d) collating, summarizing, and reporting the results was performed. From the searches (4414 citations), 360 were included in the full-text screen and 38 in the review. Results: Implementation-related factors were found in all five domains of the Consolidated Framework for Implementation Research. However, certain subfactors were mentioned more often (e.g., the adaptability of the programs, communication, or engagement of key stakeholders). Conclusions: Even though SBMHS differed in their goals and way they were conducted, certain common implementation factors were highlighted more frequently. To minimize the challenges associated with these types of interventions, learning about the implementation of SBMHS and using this knowledge in practice when introducing SBMHS is essential to achieving the best possible effects with SMBHSs.

Keywords: implementation; school-based mental health services; mental health; scoping review

1. Background

Mental illness in children and youths has become a public health concern. Symptoms can range from mild and short-term problems, such as mild anxiety or depressive symptoms, to more severe and long-term forms of diagnosed anxiety disorders or major depression [1]. An estimated 12–30% of school-age children suffer from mental illness of sufficient intensity to adversely affect their education [2]. The vulnerability to mental illness is highest during childhood and adolescence [3]. Within the last decade, an increase in diagnoses related to mental ill-health has been noted [4]. An estimated 50% of all mental illnesses begin before the age of 14, and three-quarters of mental ill-health occurs before the age of 25 [5].

Tremendous social costs result from the consequences of leaving mental ill-health in children and youths untreated. These consequences may range from poor educational attainment, compromised physical health, substance abuse, juvenile delinquency, and unemployment to even premature mortality (e.g., suicide [6–8]). In line with that, cost-benefit analyses of mental health programs have found these programs result not only in economic productivity gains but also improved health [9,10].
Despite this, mental ill-health of children and youths is often not identified and treated in a timely way. Estimations show that up to 75% of students suffering from mental ill-health receive inadequate treatment or are not treated at all [11,12]. Consequently, mental ill-health often manifests in adulthood [5,13], which is unfortunate because many children and youths have originally mild or moderate symptoms [14]), and thus early identification and prevention can have beneficial effects [12,14,15]. Hence, there is an unmet need for mental health services for children and youth.

2. Mental Health Services Provided in Schools

Education and health are closely interlinked; school is important for one’s social and emotional development, and, therefore, school has an effect on health [16]. Moreover, due to compulsory school attendance, the majority of children and youths spend a considerable amount of time in schools, making schools an ideal environment to provide timely and convenient access to mental health services, including early identification, prevention, and interventions to prevent the escalation of mental ill-health [17]. In addition, providing services related to mental ill-health within the school setting has additional benefits such as cost efficiency and good accessibility to the services [18].

While school-based mental health services (SBMHS) may vary widely in focus, format, provider, and approach [19], they are all united in the fact that schools collaborate with health services to provide support for children and youths who are at risk of or have experienced mental ill-health. An SBMHS encompasses “any program, intervention, or strategy applied in a school setting that was specifically designed to influence students’ emotional, behavioral, and/or social functioning” [20](pp.224).

Even though services related to mental ill-health can be found outside the school setting, these community mental health services are often underutilized. For example, Kauffman, [21], Langer et al. [22], and Merikangas et al. [23] showed only 20% of children and youths received help to address their needs related to mental health, whereas Armbruster and Fallon [24], and McKay et al. [25] showed the help children and youths receive is often prematurely ended. Instead, SBMHS seem to resolve some of the known barriers that prevent access to mental health services for children and youths, such as lack of insurance, shortage of medical or psychological mental health professionals, mental health stigma, or the lack of transportation opportunities [26].

The effectiveness of SBMHS has been studied in several reviews and meta-analyses. In general, mental health programs through SBMHS were found to have a positive effect on emotional and behavior problems [20]. Hoagwood and Erwin [27] identified three types of services that had a clear impact (i.e., cognitive behavioral techniques, social skills training, and teacher consultation models). Other studies evaluating multifaceted and multilevel interventions showed improvements to mental health outcomes [28,29]. However, Caldwell et al. [30], focusing on SBMHS at secondary schools for youths with depression and anxiety, found limited evidence for their effectiveness. Fazel et al., [31] suggested these results might be premature and that long-term follow-ups should be applied to investigate effectiveness. Systematic reviews on the effect of SBMHS on specific target groups such as primary school children [32] or elementary school children [33] showed positive effects on their mental health. To conclude, even though these studies generally indicate positive effects of SBMHS, general conclusions are made difficult by the heterogeneity of interventions and evaluation designs used [34].

Besides the different definitions, the variety of programs included under the SBHMS umbrella, and the different designs for evaluation, these programs are complex, which also makes the implementation process potentially challenging. For example, Rones and Hoagwood [20] identified some features associated with the implementation that are important for the maintenance and sustainability of SBHMS programs (e.g., including various stakeholders, using different modalities, and integrating the intervention into the regular classroom curriculum). Without shedding more light on the implementation of SBMHS, there can be a risk of drawing false conclusions about the effectiveness of the
programs. For instance, the lack of effects can be due to poor implementation instead of a failure of the theory underpinning the program [35]. In line with this reasoning, there has been a call to provide more clarity on the implementation of SBMHS [20,36].

3. Aim of the Review

This scoping review aimed at synthesizing the literature on the implementation of SBHMS. By doing so, we aim to increase the understanding of the systemic conditions and factors that affect the implementation of SBHMs.

The following research question will be addressed: Which factors are important for the implementation of school-based mental health services (SBMHS)? To systematize the findings, the factors relevant for implementing SBMHS will be structured according to Consolidated Framework for Implementation Research (CFIR) that differentiates between characteristics of the intervention and individuals using the intervention, the inner and outer context as well as the process of implementing.

4. Method

4.1. Study Design

To address the study aim, we performed a scoping review to identify barriers and enablers of the implementation of SBHMs. This method was chosen to provide a broad overview of implementation-related factors for SBHMs [37]. We followed the procedure outlined by Arksey and O’Malley [38]. After identifying the research question we (1) identified relevant studies, (2) selected studies, (3) charted the data, and (4) collected, summarized, and reported the results. Steps 1–3 are described in the Section 4, whereas Step 4 is presented in the Section 5.

4.2. Identify Relevant Studies

The search was conducted on 7 May 2019. The search strategy was developed in collaboration with a team of informatics experts from the university library at Karolinska Institutet. Based on several example papers focusing on SBHMs, and in discussion with representatives from the Swedish Public Health Agency and the Swedish Association of Local Authorities and Regions, potential keywords were identified. The search strategy included conducting searches in four databases: Medline, Eric, PsycINFO, and Web of Science (see Appendix A). Articles published up to May 2019 were included in the search. The informatics team provided a full list of references after duplicates had been removed. Articles were also found and added through manual searches based on recommendations.

Simultaneous with developing the search strategy, eligibility criteria for relevant studies were defined [38]. To be included, studies were required to focus on SBMHS and to have been conducted through a collaboration of school staff together with staff from social services and/or health-care services. The interventions had to address children and youths’ mental health and be published in English or a Scandinavian language. In addition to peer-reviewed journals, reports, and dissertations were included. Mental health was defined broadly and based on a definition by the Swedish Committee on Child Psychiatry [39], where mental ill-health is children’s lasting symptoms that prevent them from optimal functioning and development and that cause suffering. This included internalized mental health symptoms (e.g., anxiety, depressive symptoms, psychosomatic symptoms, eating disorder symptoms, and self-harming behaviors), externalized mental health symptoms (e.g., neuropsychiatric impairment, or behavioral problems), and indicators of psychological problems (e.g., school problems, trauma, or problems at home). Two reviewers tested the eligibility criteria on 40 articles from the final search. Inconsistencies in interpretations were discussed within the research group and with representatives from the Swedish Public Health Agency and the Swedish Association of Local Authorities and Regions, and thereafter modified to clarify the criteria.
4.3. Select Studies

All studies were screened to eliminate those that were not in line with the research question [38]. Rayyan, a software program that facilitates the screening process, was used [40]. Two authors (A.R. and M.R.S.) reviewed articles in addition to two research assistants. First, study titles and abstracts were evaluated based on the eligibility criteria in duplicate by two independent reviewers. Throughout the process, the reviewers met to discuss the eligibility criteria to confirm consensus, and modifications of the criteria were made to increase clarity (see Appendix B for eligibility criteria). The evaluation of titles and abstracts was finished in July 2019. The reviewers’ conflicting decisions were compared after completion. In the cases of inconsistencies in the decisions, the titles and abstracts were re-read and discussed in the reviewers’ group to reach a consensus. In addition, searches of the reference lists from relevant articles were also conducted to find potentially relevant articles (i.e., snowball search). These additional articles were screened in the same way as the original articles.

In the next step, the full texts of the included studies from the title and abstract evaluation were accessed for final inclusion. Three authors (A.R., M.R.S., and M.S.) and two research assistants reviewed articles in full text. As in the first step, the studies were assessed by two independent reviewers, and conflicting decisions were discussed to reach a consensus about the inclusion or exclusion of the study. The full-text evaluation was finished in November 2020.

4.4. Chart Data

In the next stage, key information from the included studies where charted [38]. The following information was collected from all included studies: (a) authors, (b) year of publication, (c) journal, (d) country of origin, (e) aim of the study, (f) study design, (g) method of data collection, (h) setting, (i) name of the intervention, (j) description of the intervention, (k) target groups for the intervention, (l) collaboration partners involved in conducting the intervention, (m) mental health challenge of the intervention target group, and (n) information about the implementation of the intervention. To test the chart template, all reviewers (A.R., M.R.S., M.S., and two research assistants) charted data from the same five included articles and compared the extracted data. Any inconsistencies were discussed, and the template was modified to increase clarity. Based on the information about the focus of the interventions and their target groups, these interventions were then categorized as universal, selective, or indicated. Universal interventions targeted all children, whereas selective interventions focused on risk groups and indicated interventions were provided to children and youths who were already struggling with their mental health.

To organize and categorize the information related to implementation, the Consolidated Framework for Implementation Research (CFIR, [41]) (for more information, see https://cfirguide.org, accessed on 10 February 2022) was used as a conceptual framework to structure the extracted information. CFIR clusters factors related to the implementation into five categories (intervention characteristics, inner setting, outer setting, characteristics of the individual, and implementation process).

The intervention characteristics describe the source of the intervention (i.e., perceptions of the source of the intervention), the evidence strength and quality that the intervention will have desired outcomes, the perceived advantage of implementing this intervention compared to other interventions (i.e., relative advantage), how complex and adaptable the intervention is as well as if the intervention can be tested small-scale first. The costs associated with the intervention as well as the perception about how the intervention is design, packaged, and presented also describe important intervention characteristics. The outer setting of the organization where the intervention is implemented is described by the prioritization of patient needs and the resources allocated to patient needs by the organization, in how fare the organization is part of a larger network (i.e., cosmopolitanism), if other organizations have implemented the intervention hence, there is peer pressure to also implement the intervention and if there are external policies and incentives that may
affect the implementation of the intervention. The organization’s inner setting is described by structural characteristics (e.g., age, maturity or size of the organization), the nature and quality of networks as well as (in)formal communication within the organization as well as the culture (i.e., existing norms, values, or assumptions made by employees). Moreover, implementation climate (i.e., the capacity to implement change) is an important characteristic that is further differentiated in the tension for change (i.e., the perception that the current situation is intolerable and requires change), the compatibility of the intervention with existing workflows and norms, the relative priority the intervention is perceived to have, existing incentives and rewards that exist in the organization that affect the implementation process as well as the existence of a learning climate and clear goals and feedback related to the intervention. Another important factor of the inner context is the organization’s readiness for implementation (i.e., the commitment to the decision of implementing the intervention). Here the involvement and commitment of leaders (i.e., leadership engagement), the amount of dedicated resources for the intervention, as well as access to knowledge and information about the intervention and its implementation are important. Characteristics of individuals is another important factor according to CFIR. It is defined by individuals’ knowledge and beliefs about the intervention (e.g., attitudes towards the intervention), individuals’ belief in their own capacity to execute the intervention (i.e., self-efficacy), the phase of change individuals are in, but also individuals’ identification with the organization as well as personal characteristics such as motivation, value, or learning style (i.e., other personal attributes). The implementation process according to CFIR is categorized in a planning phase (e.g., schemes or methods that are developed in advance), engaging, executing, and reflecting and evaluating phase. Engaging, that is the involvement of appropriate individuals is further differentiated in the engagement of opinion leaders, (in)formally appointed implementation leaders, champions as well as external change agents.

Information from included studies that related to the implementation of SBMHS was extracted, and, in the next step, categorized based on the CFIR domains and their more specific subtopics.

5. Results
5.1. Included Studies

The data search resulted in 4414 studies that were potentially relevant to the research question of this scoping review. After 1006 duplicates were removed, 3408 studies remained and were included in the screening of titles and abstracts, resulting in 360 potentially eligible studies. Of these, 38 studies were included in the review after full-text screening. The PRISMA flowchart (Figure 1) summarizes the screening steps and the numbers of included and excluded studies in each step of the screening.

5.2. Study Characteristics

The 38 studies were published between 1996 and 2018 (see Table 1). The majority of studies were conducted in the United States (n = 22), followed by Great Britain (n = 7), Australia (n = 5), and Canada (n = 2). One study was conducted in Finland and one in Sweden. The SBMHS included universal (n = 16), selective (n = 7), and indicated interventions (n = 14). For two SBMHS, the interventions seemed a mixture of selective and indicated interventions. Examples of universal interventions included providing mental health support services to all students or promoting school readiness by creating emotionally supportive classrooms. Examples of selective interventions were introducing a stress-reducing early intervention team to student cases with a risk of mental ill health or establishing collaborations between schools and mental health services to improve psychosocial functioning of students with learning disabilities at risk of mental ill health. Examples of indicated interventions were improving communications between caretakers of children with ADHD or implementing a social skills program to promote children’s cooperative skills and anger management. The majority of SBMHS (n = 12) focused on
improving mental health in general, whereas others focused on more specific issues (e.g., ADHD $n = 5$, emotional and behavioral problems $n = 4$, or depression $n = 3$). Most studies described programs where schools collaborated with mental health services ($n = 19$), whereas seven programs included collaboration between schools and health-care services. Social services were involved in six programs.

![Figure 1. PRISMA flowchart for this review. Note: Eligibility criteria are presented in Appendix B.](image)

**Table 1.** Information about the studies.

| Authors, Year | Country | Data Collection | Target Intervention Group | Participating Actors | Type of Issue | Intervention Name/Goal | Intervention Type |
|---------------|---------|-----------------|---------------------------|----------------------|---------------|------------------------|------------------|
| Anderson-Butcher et al. [42] | USA     | Quantitative    | Students in 3rd, 6th, 8th, and 12th grades | School, health-care providers, social service | Students at risk for poor academic and developmental outcomes | Ohio Community Collaboration Model for School Improvement (OCCMSI). Help schools and districts expand improvement efforts for at-risk children. Increase the use of practices for children with ADHD. Marte Meo (MM) and Coordination Meeting (CM). Help children with externalizing problems and help their families. The Social Communication Intervention Project (SCIP). Enhance communication skills. | Selective |
| Atkins et al. [43] | USA     | Quantitative    | School teachers in urban, deprived areas | School and mental health services | ADHD | | Selective |
| Axberg et al. [44] | Sweden  | Quantitative    | Youth with externalizing problems | School, mental health services | Externalizing behavior | | Indicated |
| Baxendale et al. [45] | USA     | Qualitative     | Youth with communication needs | School, health care | Communication disorder | | Indicated |
| Authors, Year | Country | Data Collection | Target Intervention Group | Participating Actors | Type of Issue | Intervention Name/Goal | Intervention Type |
|---------------|---------|----------------|--------------------------|----------------------|--------------|------------------------|------------------|
| Bellinger et al. [46] | USA | Quantitative | Children (ages 3-8) who experienced frequent non-compliance at home and school | School, mental health services | Behavioral and emotional problems | Conjoint Behavioral Consulting (CBC). Address student needs via evidence-based interventions, involve and engage families in their child’s education, and facilitate partnerships and build relationships between schools and families. Swanson, Kotkin, Agler, M-Flynn and Pelham Scale-Teacher Version (T-SKAMP). Promote grading efficacy for children with ADHD. | Indicated |
| Bhatara et al. [47] | USA | Qualitative | Teachers | School, mental health services, social services | ADHD | Universal |
| Bruns et al. [48] | USA | Quantitative | All students at a public elementary school | School, mental health services | Emotional and behavioral problems | Universal |
| Capp [49] | USA | Qualitative | School students and staff and parents | School, mental health services | Diagnosable mental health disorders | Universal |
| Clarke et al. [50] | UK | Mixed | School nurses and elementary school students, aged 10–11, in deprived areas | School, mental health services, and social services | General mental health issues | Universal |
| Fazel et al. [51] | UK | Quantitative | Refugee children and school staff | Schools and mental health services | Risk of emotional and behavioral problems | Provide a mental health service for refugees. | Selective |
| Fiester and Nathanson [52] | USA | Qualitative | School students | Schools and health-care providers | General mental health issues | Provide violence prevention and mental health services. Increase practice efficiency and improve practice standards for children with ADHD. | Universal |
| Foy and Earls [53] | USA | Qualitative | Community stakeholders, teachers, and parents | Schools and health-care providers | ADHD | The Childreach program. Decrease violent and aggressive behavior in preschool-age children. | Indicated |
| Goodwin et al. [54] | USA | Quantitative | Children older than 5 years in child-care centers, preschools, or in a child-care provider’s home care | Schools, mental health services, and health-care providers | Emotional or behavioral problems | | Selective |
### Table 1. Cont.

| Authors, Year | Country | Data Collection | Target Intervention Group | Participating Actors | Type of Issue | Intervention Name/Goal | Intervention Type |
|---------------|---------|-----------------|---------------------------|----------------------|---------------|------------------------|------------------|
| Hunter et al. [55] | UK | Qualitative | Students in secondary education | Schools and mental health services | General mental health issues | Enhance the effectiveness of the interface between primary care and specialist CAMHS services. | Universal |
| Jaatinen et al. [56] | Finland | No info | Children and adolescence | Schools, mental health services, health-care providers, and social services | Mental health and psychosocial problems | Provide psychosocial support for schoolchildren via networking family counselling services. | Universal |
| Jennings et al. [57] | USA | Mixed | Youth in an urban school district and their families | Schools and mental health services | General mental health issues | Dallas (Texas) public school initiative. | Universal |
| Juszczak et al. [58] | USA | Quantitative | All children who visited a clinic or school mental-health service | Schools and health-care providers | General mental health issues | School-Based Health Centers. | Universal |
| Khan et al. [59] | Australia | Qualitative | Secondary-school students | Schools, mental health services, and health-care providers | General mental health | MindMatters. Improve health, well-being, and education outcomes in secondary schools in south-west Sydney. The School-Based Pathway to Care Model. | Selective |
| Kutcher and Wei [60] | Canada | Mixed | School students | Schools, mental-health services, health-care providers, and social services | General mental health services | Chicago School Readiness Project (CSRP). | Universal |
| Li-Grining et al. [61] | USA | Quantitative | All caregiving adults (e.g., teachers) and children from a preschool | Schools, mental-health services, and social services | General emotional and behavioral issues | Promote low-income young children’s school readiness by creating emotionally supportive classrooms and by fostering preschoolers’ self-regulatory competence. | Universal |
| Maddern et al. [62] | UK | Mixed | Children with severe emotional and behavioral problems and their parents | Schools and mental-health services | Severe emotional and behavioral problems | Promote children’s cooperative skills and anger management. | Indicated |
| McAllister et al. [63] | Australia | Quantitative | 13-year-old children in rural areas | Schools and mental-health services | Psychological distress | Icare-R. Promote mental health. | Universal |
| Mckenzie et al. [64] | UK | Quantitative | Students in a rural area and guidance staff | Schools and mental-health services | General mental health issues | Provide community-based school counselling services. | Universal |
| Authors, Year        | Country | Data Collection | Target Intervention Group | Participating Actors                                                                 | Type of Issue                                      | Intervention Name/Goal                                                                 | Intervention Type |
|---------------------|---------|-----------------|--------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------|------------------|
| Mellin and Weist [65] | USA     | Qualitative     | Elementary/ middle (combined in this district) and high school students | Schools and mental-health services                                                    | General mental health                              | Enhance collaboration between schools and mental health services.                      | Universal        |
| Mishna and Muskat [66] | Canada  | Mixed           | Students with various social, emotional, and behavioral problems; their families; school peers; school personnel; and social workers | Schools, mental-health services, and social services                                 | Learning disabilities and psychosocial problems    | Improve the psychosocial functioning of high-risk students with learning disabilities and psychosocial problems and increase the understanding of their learning disability. | Selective        |
| Moilanen and Med [67] | USA     | Mixed           | Students in grades 8 through 12, school personnel, and parents | Schools and mental-health services                                                    | Depression and suicide                             | Prevent depression and suicide within high schools and local communities.             | Universal/ Indicated |
| Mufson et al. [68]   | USA     | Quantitative    | Depressed youth          | Schools, mental-health services, health-care providers, and social services          | Depression                                         | IPT-A. Reduce depressive symptoms and improve interpersonal functions.                | Indicated        |
| Munns et al. [69]    | Australia | Qualitative   | Primary school-aged children who experienced loss (such as a death in the family, parental divorce, or other painful transitions) | Schools and health-care providers                                                      | Traumatic events                                  | The Rainbow program. Support children who have experienced traumatic events          | Indicated        |
| O’Callaghan and Cunningham [70] | UK     | Mixed           | Primary-age children, 8- to 11-year-old pupils | Schools and mental-health services                                                    | Anxiety, depression, or low self-esteem            | Cool Connections. Decrease depression and the risk of suicide and improve self-perception. Youth Experiencing Success in School (YESS). Enhance the use of EBTs in schools, improve the academic and behavioral functioning of children, enhance home–school collaboration and support services for parents, and provide ongoing collaborative consultation for teachers. A home and school support project (HASSP). Prevent school exclusions. | Indicated        |
| Owens et al. [71]    | USA     | Mixed           | Students in kindergarten through 6th grade | Schools and mental-health services                                                    | ADHD                                               |                                                                                         | Indicated        |
| Panayiotopoulos and Kerfoot [72] | UK   | Mixed           | Pupils, their family, and school staff | Schools, mental-health services, and social services                                  | School exclusion                                   |                                                                                         | Indicated        |
### Table 1. Cont.

| Authors, Year | Country | Data Collection | Target Intervention Group | Participating Actors | Type of Issue | Intervention Name/Goal | Intervention Type |
|---------------|---------|-----------------|---------------------------|----------------------|---------------|------------------------|------------------|
| Powell et al. [73] | USA | Quantitative | Students in grades 7 to 12 | Schools and mental health services | Emotional and behavioral disorders and educational disabilities | Help students return to public-school settings as quickly as possible. | Indicated |
| Rosenblatt et al. [74] | USA | Quantitative | Special education students/students with SED | Schools and mental-health services | Severe emotional disturbance (SED) | Provide collaborative mental health and education services. | Indicated |
| Stanzel [75] | Australia | Qualitative | High school students in rural areas | Schools and health-care providers | General mental health | Outreach youth clinic (OYC). Promote better health for young people by ensuring coordination between schools and community health and support services. | Universal |
| Vander Stoep et al. [76] | USA | Quantitative | 6th-grade students, the majority in special-needs groups | Schools and mental-health services | Emotional distress | Developmental Pathways Screening Program (DPSP). Identify youth experiencing significant emotional distress who need support services. | Universal |
| White et al. [77] | USA | Quantitative | Students returning to school after a psychiatric hospitalization or other prolonged absence due to mental-health reasons and their families | Schools and mental-health services | General mental-health issues | Bridge for Resilient Youth in Transition. Support academic and clinical outcomes for high school students returning to school after a mental-health crisis. | Selective and indicated |
| Winther et al. [78] | Australia | Quantitative | All children from preparatory to grade 3 (ages 4–10 years), teachers, and parents | School, health care and mental-health services | Oppositional defiance disorder/conduct disorder (ODD/CD) | Royal Children’s Hospital, Child and Adolescent Mental Health Service and Schools’ Early Action Program. Address emerging ODD/CD. | Indicated |
| Wolraich et al. [79] | USA | Mixed | ADHD children and their caregivers, medical services, and teachers | Schools and health-care providers | ADHD | Improve communication between individuals who care for children with ADHD. | Indicated |

Notes: Universal interventions targeted all children, whereas selective interventions focused on risk groups and indicated interventions were provided to children and youths who were already struggling with their mental health.

### 5.3. Implementation Factors

A summary of factors related to the implementation of an SBMHS is presented in Table 2. More specific information about the factors influencing implementation in each of the included studies can be found in Table 3.
### Table 2. Implementation factors related to SBMHS.

| CFIR Domains                          | All Studies n = 38 | Universal Interventions n = 17 | Selective Interventions n = 7 | Indicated Interventions n = 14 |
|---------------------------------------|--------------------|-------------------------------|-----------------------------|-------------------------------|
| **I. INTERVENTION CHARACTERISTICS**   |                    |                               |                             |                               |
| Intervention Source                   | -                  | -                            | -                           | -                             |
| Evidence Strength and Quality         | 3                  | 2                            | 1                           | 1                             |
| Relative Advantage                    | 2                  | 1                            | -                           | 1                             |
| Adaptability                          | 11                 | 2                            | 2                           | 7                             |
| Trialability                          | 3                  | 1                            | -                           | 2                             |
| Complexity                            | 2                  | 2                            | -                           | -                             |
| Design Quality and Packaging          | 19                 | 9                            | 2                           | 8                             |
| Cost                                  | 7                  | 2                            | 2                           | 3                             |
| **II. OUTER SETTING**                 |                    |                               |                             |                               |
| Patient Needs and Resources           | 1                  | -                            | -                           | 1                             |
| Cosmopolitanism                       | 6                  | 3                            | 1                           | 2                             |
| Peer Pressure                         | 2                  | -                            | 1                           | 1                             |
| External Policy and Incentives        | 10                 | 6                            | -                           | 4                             |
| **III. INNER SETTING**                |                    |                               |                             |                               |
| Structural Characteristics            | 4                  | 1                            | 2                           | 1                             |
| Networks and Communications           | 17                 | 9                            | 3                           | 5                             |
| Culture                               | 6                  | 4                            | 1                           | 1                             |
| Implementation Climate                | -                  | -                            | -                           | -                             |
| - Tension for Change                  | -                  | -                            | -                           | -                             |
| - Compatibility                       | 2                  | 1                            | -                           | 1                             |
| - Relative Priority                   | 4                  | 2                            | 1                           | 1                             |
| - Organizational Incentives           | -                  | -                            | -                           | -                             |
| - Goals and Feedback                  | 9                  | 4                            | 2                           | 3                             |
| - Learning Climate                    | -                  | -                            | -                           | -                             |
| Readiness for Implementation          | -                  | -                            | -                           | -                             |
| - Leadership Engagement               | 2                  | 2                            | -                           | -                             |
| - Available Resources                 | 16                 | 5                            | 3                           | 8                             |
| - Access to Information               | 2                  | 2                            | -                           | -                             |
Table 2. Cont.

| CFIR Domains                              | All Studies $n = 38$ | Universal Interventions $n = 17$ | Selective Interventions $n = 7$ | Indicated Interventions $n = 14$ |
|-------------------------------------------|----------------------|----------------------------------|----------------------------------|----------------------------------|
| IV. INDIVIDUALS’ CHARACTERISTICS          |                      |                                  |                                  |                                  |
| Knowledge and Beliefs About the Innovation| 9                    | 2                                | 2                                | 4                                |
| Self-Efficacy                             | -                    | -                                | -                                | -                                |
| Individual Stage of Change                | -                    | -                                | -                                | -                                |
| Individual Identification with Organization| -                    | -                                | -                                | -                                |
| Other Personal Attributes                 | 2                    | -                                | 1                                | 1                                |
| V. PROCESS                                | 40                   | 20                               | 9                                | 11                               |
| Planning                                  | 5                    | 5                                | -                                | -                                |
| Engaging                                  | -                    | -                                | -                                | -                                |
| - Opinion Leaders                         | 3                    | -                                | 2                                | 1                                |
| - Formally Appointed Internal Implementation Leaders | 2                   | 1                                | 1                                | -                                |
| - Champions                               | -                    | -                                | -                                | -                                |
| - External Change Agents                  | 1                    | -                                | 1                                | -                                |
| - Key Stakeholders                        | 17                   | 10                               | 3                                | 4                                |
| - Innovation Participants                 | 9                    | 3                                | 2                                | 4                                |
| Executing                                 | 1                    | -                                | -                                | 1                                |
| Reflecting and Evaluating                 | 2                    | 1                                | -                                | 1                                |

Table 3. Implementation-related information per study.

| Reference | Process | Inner Setting                          | Outer Setting                          | Intervention Characteristics | Individuals’ Characteristics |
|-----------|---------|----------------------------------------|----------------------------------------|------------------------------|-----------------------------|
| Anderson-Butcher et al. [42]            |         | Implementation Climate—Relative Priority | Implementation Climate—Goals and Feedback |                             | Adaptable                   |
| Atkins et al. [43]                      | Engaging Opinion Leaders                |                                       |                                       |                             | Trialability, Design Quality and Packaging, Adaptable |
| Axberg et al. [44]                      |         | Networks and Communications             |                                       |                             |                             |
| Reference          | Process                                      | Inner Setting                                                                 | Outer Setting           | Intervention Characteristics               | Individuals’ Characteristics |
|--------------------|----------------------------------------------|-------------------------------------------------------------------------------|-------------------------|---------------------------------------------|------------------------------|
| Baxendale et al. [45] | Reflecting and Evaluating Planning Engaging Innovation Participants | Implementation Climate—Compatibility                                         | External Policy and Incentives | Design Quality and Packaging Adaptable Evidence Strength and Quality | Knowledge and Beliefs |
| Bellinger et al. [46] | Engaging Key Stakeholders                    | Readiness for Implementation—Available Resources                              | External Policy and Incentives | Design Quality and Packaging                | Cost                        |
| Bhatara et al. [47] | Engaging Key Stakeholders                    | Cosmopolitanism                                                               | Design Quality and Packaging | Design Quality and Packaging                | Design Quality and Packaging |
| Bruns et al. [48]   | Engaging Key Stakeholders                    | Readiness for Implementation—Available Resources                              | Design Quality and Packaging | Design Quality and Packaging                | Cost                        |
| Capp [49]           | Engaging Key Stakeholders Engaging Innovation Participants | Implementation Climate—Goals and Feedback Culture                                | Evidence Strength and Quality |
| Clarke et al. [50]  | Engaging Key Stakeholders                    | Readiness for Implementation—Available Resources                              | Peer Pressure | Evidence Strength and Quality |
| Fazel et al. [51]   | Engaging Innovation Participants              | Networks and Communications Implementation Climate—Relative Priority           | Clinical Practice and Incentives | Complexity |
| Fiester and Nathanson [52] | Planning Engaging Key Stakeholders          | Leadership Engagement Implementation Climate—Goals and Feedback Culture        | Clinical Practice and Incentives |
| Foy and Earls [53]  | Engaging Key Stakeholders                    | External Policy and Incentives                                                | Other Personal Attributes |
| Goodwin et al. [54] |                                | Cosmopolitanism                                                               | Relative Advantage Trialability |
| Hunter et al. [55]  | Engaging Key Stakeholders                    | External Policy and Incentives                                                | Knowledge and Beliefs |
| Jaatinen et al. [56] | Engaging Key Stakeholders Engaging Innovation Participants | Implementation Climate—Goals and Feedback Networks and Communications         | Knowledge and Beliefs |
| Jennings et al. [57] | Engaging Key Stakeholders                    | Networks and Communications                                                   | Knowledge and Beliefs |
| Juszczak et al. [58] |                                | External Policy and Incentives                                                | Knowledge and Beliefs |
| Reference             | Process                                           | Inner Setting                          | Outer Setting                          | Intervention Characteristics                  | Individuals’ Characteristics   |
|-----------------------|---------------------------------------------------|----------------------------------------|----------------------------------------|-----------------------------------------------|---------------------------------|
| Khan et al. [59]      | Engaging Key Stakeholders                         | Structural Characteristics             | Networks and Communications            | Design Quality and Packaging Cost             | Knowledge and Beliefs           |
|                       | Engaging Innovation Participants                  |                                        | Culture                                |                                               |                                 |
|                       | Engaging External Change Agent                    |                                        | Readiness for Implementation—Available Resources |                                               |                                 |
|                       | Engaging Formally Appointed Internal Implementation Leaders |                                    |                                        |                                               |                                 |
| Kutcher and Wei [60]  | Reflecting and Evaluating                         | Networks and Communications Implementation | Climate—Goals and                   | External Policy and Incentives                | Knowledge and Beliefs           |
|                       | Engaging Key Stakeholders                          |                                        | Feedback                               |                                               |                                 |
|                       |                                                    |                                        |                                       |                                               |                                 |
| Li-Grining et al. [61]| Planning                                          | Networks and Communications            | Implementation Climates—goals and       | Complexities and Design Quality and Packaging | Knowledge and Beliefs           |
|                       |                                                    |                                        | feedback                               |                                               |                                 |
|                       |                                                    |                                        |                                       |                                               |                                 |
| Maddern et al. [62]   | Engaging Innovation Participants                  | Available Resources                   | Implementation Climates—goals          | Patient Needs and Resources Peer Pressure     | Adaptability                   |
|                       | Engaging Key Stakeholders                          |                                        | and feedback                           |                                               | Design Quality and Packaging     |
|                       |                                                    |                                        | Structural Characteristics             |                                               |                                 |
|                       |                                                    |                                        | Implementation Climates—goals and      |                                               |                                 |
|                       |                                                    |                                        | Feedback                               |                                               |                                 |
|                       |                                                    |                                        |                                       |                                               |                                 |
| Mcallister et al. [63]|                                                    | Climate—Relative Priority               | Network and Communications             | Design Quality and Packaging                  |                                 |
|                       |                                                    |                                        | Readiness for Implementation—         |                                               |                                 |
|                       |                                                    |                                        |                                        |                                               |                                 |
| Mckenzie et al. [64]  | Engaging Innovation Participants                  | Leadership Engagement                  | Network and Communications             | Design Quality and Packaging                  |                                 |
|                       |                                                    |                                        | Networks and Communications            |                                               |                                 |
|                       |                                                    |                                        | Structural Characteristics             |                                               |                                 |
|                       |                                                    |                                        | Implementation Climates—goals and      |                                               |                                 |
|                       |                                                    |                                        | Feedback                               |                                               |                                 |
|                       |                                                    |                                        |                                       |                                               |                                 |
| Mellin and Weist [65] | Planning                                          | Engaging Key Stakeholders              | Available Resources                   | External Policy and Incentives                | Knowledge and Beliefs           |
|                       |                                                    |                                        | Culture                                |                                               |                                 |
|                       |                                                    |                                        | Implementation Climates—goals          |                                               |                                 |
|                       |                                                    |                                        | and feedback                           |                                               |                                 |
|                       |                                                    |                                        | Structural Characteristics             |                                               |                                 |
|                       |                                                    |                                        | Implementation Climates—goals and      |                                               |                                 |
|                       |                                                    |                                        | Feedback                               |                                               |                                 |
|                       |                                                    |                                        |                                       |                                               |                                 |
| Mishna and Muskat [66]|                                                    | Engaging Opinion Leaders               | Climate—Goals and Feedback             | Design Quality and packaging                  | Knowledge and Beliefs           |
|                       |                                                    |                                        | Networks and Communications            |                                               |                                 |
|                       |                                                    |                                        | Structural Characteristics             |                                               |                                 |
|                       |                                                    |                                        | Implementation Climates—goals          |                                               |                                 |
|                       |                                                    |                                        | and feedback                           |                                               |                                 |
| Moilanen and Med [67] | Engaging Key Stakeholders                          | Readiness for Implementation—         | Available Resources                    | Design Quality and Packaging                  |                                 |
|                       |                                                    |                                        | Available Resources                    |                                               |                                 |
|                       |                                                    |                                        | Readiness for Implementation—         |                                               |                                 |
|                       |                                                    |                                        | Available Resources                    |                                               |                                 |
|                       |                                                    |                                        | Networks and Communications            |                                               |                                 |
| Muflon et al. [68]    | Engaging Innovation Participants                  | Readiness for Implementation—         | Available Resources                    | Design Quality and Packaging                  |                                 |
|                       |                                                    |                                        | Available Resources                    |                                               |                                 |
|                       |                                                    |                                        | Readiness for Implementation—         |                                               |                                 |
|                       |                                                    |                                        | Available Resources                    |                                               |                                 |
|                       |                                                    |                                        | Networks and Communications            |                                               |                                 |
| Munns et al. [69]     | Engaging Key Stakeholders                          | Readiness for Implementation—         | Available Resources                    | Design Quality and Packaging                  |                                 |
|                       |                                                    |                                        | Available Resources                    |                                               |                                 |
|                       |                                                    |                                        | Networks and Communications            |                                               |                                 |

Table 3. Cont.
| Reference                          | Process                                      | Inner Setting                                                                 | Outer Setting                                                                 | Intervention Characteristics             | Individuals’ Characteristics         |
|-----------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------|
| O’Callaghan and Cunningham [70]   | Planning Engaging Opinion Leaders Executing  | Networks and Communications Networks and Communications Implementation          | External Policy and Incentives                                               | Design Quality and Packaging             | Other Personal Attributes Knowledge and Beliefs |
| Owens et al. [71]                 |                                              | Climate—Goals and Feedback Readiness for Implementation—Available Resources    |                                                                                | Trialability                              |                                       |
| Panayiotopoulos and Kerfoot [72]  | Engaging Key Stakeholders                    | Implementation                                                                |                                                                                | Adaptability                              | Knowledge and Beliefs                 |
| Powell et al. [73]                |                                              | Climate—Goals and Feedback Readiness for Implementation—Available Resources    |                                                                                | Adaptability                              | Knowledge and Beliefs                 |
| Panayiotopoulos and Kerfoot [72]  | Engaging Key Stakeholders                    | Networks and Communications Readiness for Implementation—Access to Knowledge and Information |                                                                                | Design Quality and Packaging Adaptableity | Knowledge and Beliefs                 |
| Stanzel [75]                      | Engaging Formally Appointed Internal Leaders | Readiness for Implementation—Available Resources Culture                      |                                                                                |                                            |                                       |
| Vander Stoep et al. [76]          | Engaging Key Stakeholders                    | Readiness for Implementation—Available Resources Implementation Climate—Relative Priority Readiness for Implementation—Available Resources | Cosmopolitanism                                                                    | Cost                                      |                                       |
| White et al. [77]                 | Engaging Key Stakeholders                    | Readiness for Implementation—Available Resources Implementation Climate—Relative Priority Readiness for Implementation—Available Resources |                                                                                |                                            |                                       |
| Winther et al. [78]               | Engaging Innovation Participants             | Available Resources                                                           |                                                                                |                                            |                                       |
| Wolraich et al. [79]              |                                              | Relative Advantage                                                            |                                                                                |                                            |                                       |

Generally, implementation-related information could be found for all five CFIR domains, but some of the subfactors in CFIR seemed to be particularly relevant to implementing SBMHS. Frequently named intervention characteristics were the adaptability of the intervention, the design quality and packaging of the intervention, and the costs associated with the intervention. For example, programs were often adapted to the content of the staff training, the way the treatment within the program was conducted, and the evaluation of the treatment compliance to fit to the local context [68]. Moreover, adaptation of the program to the local conditions and the target group was crucial [66]. One example of a concrete adaptation was to change the language used in the program so that students with diverse backgrounds could be reached [66]. Language and the way the program was packaged didactically was also identified in another study as culturally inappropriate and a hindrance to implementation of the program for certain minority groups [69]. Furthermore, the service range of the program as well as the facilities (e.g., rooms used for the programs) needed to be adapted based on the needs of the children and youths in that school [75]. Adaptability was more often mentioned when indicated programs were implemented compared to universal or selective programs.

Information related to the outer setting was mainly captured by the subfactors of cosmopolitanism and external policies and incentives. One reoccurring example related to external policies was the different compensation systems among cooperating actors [45,46]. Similarly, the different actors involved in the programs needed to gather consent from individual legal guardians of children and youths, as well as applying different principles of confidentiality, which also provided a challenge [60,65]. Having an established network
with other organizations was also important for implementation. For example, when one needed to hire staff who could carry out the program, recruiting from organizations where established contacts existed facilitated the process (e.g., [52]).

Inner-setting factors that primarily were mentioned were the networks and communication, goals, and feedback, as well as the available resources that contributed to a readiness for the implementation. In particular, the need for an open dialogue between actors within the SBHMS was perceived as a cornerstone for developing trust and respect between actors [71]. A supportive administration department was highlighted as important for these multi-actor programs [80]. Dysfunctional communication could result in the loss of important information about students who participated in the program, which could affect the program and its outcomes negatively [55]. Clear goals and feedback as part of the implementation climate were also frequently mentioned. Particularly, different goals by various actors was highlighted as a potential challenge with SBHMS (e.g., [52]). Moreover, having sufficient resources such as suitable premises [51], the right technical aids [71], or adequate funding for the new initiative [81] was also important. In particular, studies on indicated interventions mentioned the availability of resources.

Regarding individuals’ characteristics is important for the implementation of SBHMs; in particular, actors’ knowledge of and belief in the program were mentioned. For example, when the actors involved strongly believed that the program would improve children’s mental health, staff’s motivation to work with the program increased [57].

When it comes to the process related to the program, engagement of key stakeholders and the participants in the interventions was frequently mentioned. For example, in Panayiotopoulos and Kerfoot [72], creating engagement with relevant actors was central to the implementation. These actors primarily included teachers and coordinators for nurses [69] and school management, as well as other staff at the school [59]. In another study, where a program for ADHD primarily focused on increasing the competence of physicians and teachers, the program did not achieve engagement of the targeted group, which affected the program’s effectiveness [79].

6. Discussion

Due to the increasing number of children and youths who are at risk of, and have experienced, mental ill-health, the efficient implementation of countermeasures such as SBHMS is essential. Therefore, this scoping review synthesized the available research on factors that influence the implementation of SBHMS. From 38 studies, information related to the implementation of SBHMS was gathered and structured. SBHMS have incorporated a variety of programs spanning from universal programs that target all students and aim at improving children and youths’ general mental well-being to programs that target specific individuals, either who were at risk for mental ill-health or who experienced mental ill-health. In addition, the SBHMS also varied in their focuses (i.e., the issues they primarily addressed). Whereas the universal programs focused on increasing general mental health or more specific facets of it (e.g., emotional or behavioral problems), the selective and particularly the indicated programs often addressed narrower topics (e.g., ADHD or depression). Most studies were conducted in English-speaking countries. Implementation-related factors of SBHMS for all five CFIR domains (i.e., intervention characteristics, outer setting, inner setting, characteristics of the individual, and process) were identified. However, information was primarily found around three of the five domains (i.e., intervention characteristics, inner setting, and process), and certain subfactors were mentioned more frequently than others were (i.e., design quality and packaging, adaptability, networks and communication, readiness for the implementation through available resources, engaging key stakeholders, and innovation participants).

6.1. Adapting of the Interventions

The design and packaging of the intervention was an often-mentioned factor and was often related to the adaptability of the intervention to the local context. Hence, for SBHMS
implementation, being able to tailor a specific intervention to the needs and circumstances of the school and other actors involved was perceived important. Generally, adaptations have been discussed in relation to the fidelity of interventions, which presents the degree to which an intervention is carried out based on how it was described and originally tested when developed [82,83]. Fidelity has been an important factor in intervention implementation and is often studied as an implementation outcome [84]. However, real-world practice has shown that adaptations to interventions such as evidence-based interventions (EBIs) are in the majority of cases the rule rather than the expectation [85–87]. In recent years, adaptation has been discussed more frequently, but not as the opposite of fidelity as done before (e.g., [88]). Rather, adaptation is discussed in terms of how fidelity and adaptation can coexist when the core components of the intervention are preserved [89–91] and are necessary so that EBIs can result in value for all stakeholders when, for example, EBIs are implemented [92–94]. Examples of reasons for adaptation include increasing the fit between the intervention and context and being able to address multiple diagnoses or balance different outcomes [94]. Intervention strategies that aim at increasing this intervention–context fit could include community–academic partnerships, so that intervention developers and practitioners who shall work with the interventions collaboratively design the process [95]. Central is the transparency of adaptations, hence the conscious decisions and documentation about what is adapted, as well as how and for what reason, to avoid adaptation neglect, which may lead to the removal of the intervention’s central components, thereby threatening the intervention’s effectiveness [94]. In the case of SBMHS, where adaptations and the fit of existing design and packaging of programs seemed central, adaptations regarding the target groups or local conditions at schools were most relevant. However, another potential adaptation may concern implementing programs from other countries and hence other cultural settings [96].

6.2. Internal Collaboration and between Actors

SBMHS are essentially the collaboration of various actors who are relevant to children and youths’ mental health; that is, health-care providers, social-care providers, and schools. These three actors ultimately represent different organizations, which also means different primary goals, different ways of working, different cultures, and, potentially, different laws to which they relate. These organization-specific factors may represent challenges to smooth communication between actors when it comes to SBMHS, and they ultimately might make it harder to implement SBMHS successful. Organizational factors have been found to be critical for the successful implementation of evidence-based practices [97,98]. However, studies predominantly focus on one organization [99]; hence, the interorganizational alignment that may be of relevance for initiatives such as SBMHS has not received much research attention [99]. In line with the scarce empirical findings, theoretical frameworks also tend to focus on the one organizational setting. For example, in CFIR [41], organizational factors are categorized under the inner-setting domain. However, for SBMHS, the inner setting that may affect implementation is essentially several organizations’ inner settings. An exception is the Exploration, Preparation, Implementation, and Sustainment framework, which in addition to the interorganizational context, also includes only a few details. Our results indicate that communication, which might be an essential part of interorganizational collaboration, is important for SBMHS implementation. In the future, the interorganizational alignment of organizational constructs [99] should be studied more closely. Closely related to the communication aspect, resource availability for the implementation of SBMHS was often named. Resource availability could be a sign of the overall prioritization of the intervention. However, schools have limited financial resources, and often staff already experience high demands [100]. This might indicate that schools that introduce SBMHS might need to conduct a thorough analysis beforehand to understand what is required for the intervention to be feasible in this context.

Stakeholder engagement is central to successful implementation in general [101,102], and, of course, relevant to specific programs that are provided within SBMHS, e.g., school-
based intervention for trauma [103]. Potential stakeholders relevant for SBMHS are district and school administrators, mental-health service providers, and educators, as well as students and their families. A particular focus should be placed on gaining their buy-in [104] to make an implementation successful. Continuous stakeholder engagement could also increase communication and facilitate making decisions related to adaptations and their documentation and evaluation.

6.3. Implications for Implementing SBMHS

Taken together, this scoping review can be used as a resource and starting point for schools and their collaboration partners that aim at implementing SBMHS in the future. Relevant factors for implementation are highlighted here that can be incorporated and covered when planning the implementation process. One suggestion for successful implementation is the use of multifaceted implementation strategies [105]. Schools could use the findings of this scoping review as guidance when planning SBMHS implementation strategies, which may increase the chances that an SBMHS results in the intended effects (i.e., an improvement in children and youths’ mental health). In addition, this study may also contribute to scholars placing more emphasis on the implementation process (i.e., its planning, execution, and evaluation). Process evaluation might be particularly important to increase our understanding of which implementation factors are essential for certain interventions [106]. Ultimately, increased focus on implementation sheds more light on the dilemma of theory failure versus implementation failure when it comes to understanding results from SBMHS evaluations.

7. Limitations

The limitations of this scoping review should be acknowledged. This scoping review includes studies that were published until May 2019. Later studies were not included as the pandemic most likely affected the educational system differently in different countries due to the measures and contract restriction that were introduced. Hence, implementation factors that can be found in studies conducted during the pandemic might therefore primary be a representation of the pandemic measure each country has introduced and might therefore not be comparable to a non-pandemic situation. Future studies should investigate SBMHS and mental health of children and youth in future studies further. In addition, most studies included did not have an explicit focus on studying the implementation of SBMHS. Therefore, we might only have captured the most relevant factors that affected SBMHS implementation that therefore often were mentioned in the Section 6. We also chose to define SBMHS in this paper as the collaboration of at least two actors, with schools being one and health care or social services the other one. This might have led to the exclusion of programs that have other constellations of collaboration partners. Based on program aims (i.e., improving mental health), we chose schools, health care, and social services as the central actors to be considered. The majority of the included studies were conducted in English-speaking countries, predominantly the United States, and only two were conducted in Nordic countries. However, schools, health-care services, and social services have major organizational differences compared to their respective counterparts in different countries. Hence, generalizability of results might be limited. However, certain implementation-relevant factors have been named in a variety of studies, which indicates that those seem to be important beyond the national specificities of the school, health care, and social service system.

8. Conclusions

This scoping review demonstrated that specific implementation factors seem to be more important in the implementation of SBMHS. Besides the need to study the implementation process explicitly, valuable practical guidance can extracted from this scoping review when new SBMHS are planned or existing services optimized.
**Author Contributions:** Conceptualization, A.R., and H.H.; data extraction M.S., and M.R.S.; formal analysis, A.R., M.R.S., and H.H.; writing—original draft preparation, A.R.; review and editing: A.R., H.H., M.S., and M.R.S.; funding acquisition, A.R., and H.H. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by a research grant from the Public Health Agency of Sweden (Registration No. 4-1782/2019).

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Acknowledgments:** We would like to thank librarians Emma-Lotta Säätelä and Sabina Gillsund at the Karolinska Institutet University Library for helping with the development of search strategies and literature searches. We would also like to thank research assistants Irene Muli, Andreas Ekvall, and Paul Bengtsson for their work in the initial parts of the scoping review process. Furthermore, we would like to express our gratitude to the staffs of the Public Health Agency of Sweden and the Swedish Association of Local Authorities and Regions, who provided valuable input during the different stages of this project.

**Conflicts of Interest:** The authors declare no conflict of interest.

**Appendix A. Search Strategy**

Documentation of search strategies

University Library search consultation group

**Databases:**

- Medline (Ovid)
- Web of Science Core Collection (Clarivate)
- PsycInfo (Ovid)
- ERIC (ProQuest)

**Total number of hits:**

Before deduplication: 12,000
After deduplication: 8000

**Comments:**

**Appendix A.1. Medline**

| Field labels | Description |
|--------------|-------------|
| exp/          | exploded MeSH term |
| /=           | non exploded MeSH term |
| .ti,ab,kf.   | title, abstract and author keywords |
| adjx          | within x words, regardless of order |
| *             | truncation of word for alternate endings |

1. Mental Disorders/
2. Mental Health/
3. Psychopathology/
4. Adjustment Disorders/
5. Affective Symptoms/
6. exp Mood Disorders/
7. Depression/
8. exp Anxiety Disorders/
9. Anxiety/
10. Fear/
11. Panic/
12. Performance Anxiety/
13. exp "Feeding and Eating Disorders"/
14. Compulsive Personality Disorder/
15. Obsessive Behavior/
16. Compulsive Behavior/
17. Impulsive Behavior/
18. Child Reactive Disorders/
19. exp Aggression/
20. exp Self-Injurious Behavior/
21. Psychophysiological Disorders/
22. exp Somatoform Disorders/
23. exp Sleep Wake Disorders/
24. Abdominal Pain/
25. exp Headache Disorders, Primary/
26. Headache/
27. Chronic Pain/
28. Musculoskeletal Pain/
29. Back Pain/
30. Low Back Pain/
31. exp "Attention Deficit and Disruptive Behavior Disorders"/
32. Hyperkinesis/
33. Child Behavior Disorders/
34. Social Problems/
35. Juvenile Delinquency/
36. Social Behavior Disorders/
37. Antisocial Personality Disorder/
38. exp Substance-Related Disorders/
39. Stress, Psychological/
40. Quality of life/
41. Personal satisfaction/
42. Happiness/
43. Pessimism/
44. Self Concept/
45. Body Image/
46. Self Efficacy/
47. Sense of Coherence/
48. Adaptation, Psychological/
49. Resilience, Psychological/
50. ((mental or emotional) adj3 (disease* or disorder* or distress or health or illness* or ill health or illhealth or instabilit* or problem* or symptom*)).ti,ab,kf.
51. ((psychiatric or psychologic*) adj3 (disorder* or distress or ill health or illhealth or illness* or problem* or symptom*)).ti,ab,kf.
52. ((behavior or behaviour) adj2 (disorder* or problem* or symptom* or syndrome*)).ti,ab,kf.
53. (affective adj2 (disorder* or problem* or symptom* or syndrome*)).ti,ab,kf.
54. (abdominal pain or abnormal psychology or adhd or adjustment disorder* or acrophobia or aggression or aggressive* or agoraphob* or anankastic or anorectic or anorexia* or antisocial or anxious or attention defici* or attention problem* or avoidance or avoidant disorder* or back ache or back pain or binge eating or bulimi* or chronic pain or claustrophobia or compulsion or compulsiveness or compulsive or concentration problem* or delinquenc* or delinquent or depress* or despair or despondency or dysthymi* or eating problem* or externalising or externalizing or fear or frustrat* or headache or health complaint* or hopeles* or hyperactiv* or hypervis* or impulsiv* or inattention or insomnia or internal distress or internalising or intrusiv* or loneliness or mood or mood* or musculoskeletal pain or musculoskeletal symptom* or neophobia or nervousness or norm breaking or obsess* or obses* or phobia* or phobic or psychopathology or psychosocial or psychosomatic* or recurrent pain or rule breaking or sadness or sad or school phobia or self-cut* or self-destructive* or self-harm* or self-injur* or suicide or sleep disturbance or sleep problem* or stomach ache or stomachache or social problem* or stress or suicidal* or unhap* or worries or worry).ti,ab,kf.
55. ((alcohol or appetite or body dysmorphic or body image or cyclothymic or child reactive or dysthymic or eating or factitious or feeding or impulse control or sleep or somatoform or substance) adj1 disorder*).ti,ab,kf.
56. ((alcohol* or drug* or substance* or tobacco) adj3 (abuse or addiction or dependence or habituation or misuse or "use").ti,ab,kf.
57. (well-being or wellbeing or wellness or optimis* or cheerful* or contentment or elated or elation or joy or enjoyment or good feeling* or good mood or happiness or happy or satisfaction or quality of life or HRQoL or QoL or sense of coherence or resilience or coping).ti,ab,kf.
58. (positive adj3 (affect* or emotion* or mood*)).ti,ab,kf.
59. (self adj3 (concept* or perception* or acceptance or confidence or esteem* or image or efficacy or reliance or worth or compassion)).ti,ab,kf.
60. ((emotional* or event* or level* or life or perceiv*) adj3 stress*).ti,ab,kf.
61. or/1–60
62. Schools/
63. (classroom* or highschool* or pupil* or school* or teacher* or grade-1 or grade one first-grade or 1st-grade or grade-2 or grade two or second-grade or 2nd-grade or grade 3 or grade-three or third-grade or 3rd-grade grade-4 or grade-four or fourth-grade or 4th-grade or grade-5 or grade five or 5th grade or grade six or 6th grade or grade-7 or grade seven or seventh grade or grade-8 or grade-eight or 8th grade or grade eight or grade-9 or grade-nine or 9th grade or grade-nine or grade-10 or grade-ten or 10th grade or tenth grade or grade-11 or grade-eleven or 11th grade or grade-12 or grade-twelve 12th grade or twelfth grade).ti,ab,kf.
64. or/62–63
65. Adolescent/
66. Child/
67. (adolescent* or boys or child* or girls or juvenile* or minor* or offspring* or puberty or school-age* or teen* or young* or youth* or under age* or under age*).ti,ab,kf.
68. or/65–67
69. 64 and 68
70. School Health Services/
71. School Nursing/
72. ((classroom* or highschool* or pupil* or school* or teacher*) adj3 (based or environment* or interven* or implement* or setting*)).ti,ab,kf.
73. (school* adj2 (elementary or high or middle or primary or secondary)).ti,ab,kf.
74. or/69–73
75. Patient Care Team/
76. Intersectoral Collaboration/
77. Cooperative Behavior/
78. Interinstitutional Relations/
79. Interprofessional Relations/
80. Interdisciplinary Communication/
81. ((cross-agenc* or crossagenc* or cross-disciplinar* or crossdisciplinary* or cross-institutional* or crossinstitutional* or cross-organizational* or crossorganizational* or cross-professional* or crossprofessional* or cross-sectoral* or crosssectoral* or inter-agenc* or interagenc* or inter-institutional* or interinstitutional* or inter-professional* or interprofessional* or inter-sectoral* or intersectoral* or multi-agenc* or multiaxic* or multidisciplinary* or multi-institutional* or multiinstitutional* or multi-professional* or multiprofessional* or multiprocessional* or multiprocessional* or multisectoral* or multisectoral* or trans-agenc* or transagenc* or trans-disciplinar* or transdisciplinary* or trans-institutional* or transinstitutional* or trans-professional* or transprofessional* or trans-sectoral* or transsectoral*) adj6 (care or collaborat* or communicat* or cooperat* or health care or intervention* or mental health or partnership* or program* or relation* or team* or stratag*)).ti,ab,kf.
82. (professional* adj3 (collaborat* or coordinat* or cooperat* or partnership* or teamwork)).ti,ab,kf.
83. ((collaborat* or coordinat* or cooperat*) adj6 (behavior* or behaviour* or health or intervention* or mental health or program* or school* staff* or school* nurs* or stratag*)).ti,ab,kf.
84. or/75–83
85. Child Welfare/
86. Child Psychiatry/
87. Adolescent Psychiatry/
88. Health Services/
89. Adolescent Health Services/
90. Community Health Services/
91. Community Health Nursing/
92. Community Mental Health Services/
93. Emergency Services, Psychiatric/
94. exp Mental Health Services/
95. Psychiatric Nursing/
96. exp Community Psychiatry/
97. Psychiatric Rehabilitation/
98. exp Social Work/
99. Primary Health Care/
100. ((emergency* or health or psychiat* or psycholog*) adj3 (care or nursing or practice* or service*)).ti,ab,kf.
101. (adolescent psychiatry or assertive community treatment or child guidance or child psychiatry or child welfare or community psychiatry or healthcare or mental health center* or mental health clinic* or mental health rehabilitation or primary care or psychiatric rehabilitation or psycholog* rehabilitation or psychosocial rehabilitation or social psychiatry or social service* or social work* or support* or treat*).ti,ab,kf.
102. or/85–101
103. Program Evaluation/
104. Health Plan Implementation/
105. (barrier* or determinant* or effect* or evaluat* or facilitat* or factor* or implement* or interven* or predict* or program*).ti,ab,kf.
106. or/103–105
107. 61 and 74 and 84 and 102 and 106
108. limit 107 to (danish or english or norwegian or swedish)
109. remove duplicates from 108
### Appendix A.3. Psycinfo

| Field labels | Field labels |
|--------------|--------------|
| exp/= exploded controlled term | /= non exploded controlled term |
| .ti,ab,id. = title, abstract and author keywords | adjx = within x words, regardless of order |
| * = truncation of word for alternate endings | |

| 1. Mental Disorders/ | 2. exp Mental Health/ |
|---------------------|----------------------|
| 3. exp Psychopathology/ | 4. Adjustment Disorders/ |
| 5. exp Affective Disorders/ | 6. "Depression (emotion)"/ |
| 7. exp Anxiety Disorders/ | 8. Anxiety/ |
| 9. Fear/ | 10. Panic/ |
| 11. Performance Anxiety/ | 12. exp Eating Disorders/ |
| 13. Obsessive Compulsive Personality Disorder/ | 14. exp Compulsions/ |
| 15. exp Obsessions/ | 16. Impulsiveness/ |
| 17. Aggressive Behavior/ | 18. exp Self-destructive Behavior/ |
| 19. exp Somatoform Disorders/ | 20. exp Sleep Disorders/ |
| 21. Headache/ | 22. Chronic Pain/ |
| 23. Back Pain/ | 24. exp Attention Deficit Disorder/ |
| 25. Hyperkinesis/ | 26. Social Issues/ |
| 27. exp Behavior Disorders/ | 28. Antisocial Personality Disorder/ |
| 29. exp Drug Usage/ | 30. Psychological Stress/ |
| 31. “Quality of Life”/ | 32. Satisfaction/ |
| 33. Happiness/ | 34. Pessimism/ |
| 35. Self-concept/ | 36. exp Body Image/ |
| 37. Self-efficacy/ | 38. "Sense of Coherence"/ |
| 39. exp Adjustment/ | 40. "Resilience (psychological)"/ |
| 41. (mental or emotional) adj3 (disease* or disorder* or distress or health or illness* or ill health or illhealth or instabilit* or problem* or symptom*).ti,ab,id. | 42. ((psychiatric or psychologic*) adj3 (disorder* or distress or ill health or illhealth or illness* or problem* or symptom*)).ti,ab,id. |
| 43. (behavior or behaviour) adj2 (disorder* or problem* or symptom*).ti,ab,id. | 44. (affective adj2 (disorder* or distress or problem* or symptom* or syndrome*)).ti,ab,id. |
| 45. (abdominal pain or abnormal psychology or adhd or adjustment disorder* or acrophobia or aggression or aggressive* or agoraphob* or anankastic or anorectic or anorexia* or antisocial or anxiety or anxious or attention deficit* or attention problem* or avoidance or avoidant disorder* or back ache or back pain or binge eating or bulim* or chronic pain or clausrophobia or compulsion or compulsiveness or compulsive or concentration problem* or delinquenc* or delinquent or depress* or despair or despondency or dysthym* or eating problem* or externalising or externalizing or fear or frustrat* or headache or health complaint* or hopeless* or hyperactiv* or hyperkin* or impuls iv* or inattention or insomnia or internal distress or internalising or internalizing or intrusive thinking or intrusive thoughts or loneliness or lonely or mood or moods or musculoskeletal pain or musculoskeletal symptom* or neophobia or nervousness or norm breaking or obsessa* or ophiophobia or overanxious or pain disorder* or panic attack* or panic disorder* or perpetrator* or persistent pain or pessimism or pessimistic or phobia or phobic or psychopathic or psychosocial or psychosomatic* or recurrent pain or rule breaking or sadness or sad or school phobia or self-cut* or self-destructive* or self-harm* or self-injur* or suicide or sleep disturbance or sleep problem* or stomach ache or stomachache or social problem* or social withdrawal or unhapp* or worries or worry).ti,ab,id. | 46. ((alcohol or appetite or body dysmorphic or body image or cyclothymic or child reactive or dysphoric or eating or factitious or feeding or impulse control or sleep or somatoform or substance) adj1 disorder*).ti,ab,id. |
| 47. ((alcohol* or drug* or substance* or tobacco) adj3 (abuse or addiction or dependence or habituation or misuse or "use").).ti,ab,id. | 48. (well-being or wellbeing or wellness or optimis* or cheerful* or contentment or elated or elation or joy or enjoyment or good feeling* or good mood or happiness or happy or satisfaction or quality of life or HRQoL or QoL or sense of coherence or resilience or coping).ti,ab,id. |
| 49. (positive adj3 (affect* or emotion*) or mood*).ti,ab,id. | 50. (self adj3 (concept* or perception* or acceptance or confidence or esteem* or image or efficacy or reliance or worth or compassion)).ti,ab,id. |
| 51. ((emotional* or event* or level* or life or perceiv*) adj3 stress*).ti,ab,id. | 52. or/1–51 |
| 53. Schools/ | 54. |
54. (classroom* or highschool* or pupil* or school* or teacher* or grade-1 or grade one or first-grade or 1st-grade or grade-2 or grade two or second-grade or 2nd-grade or grade 3 or grade-three or third-grade or 3rd-grade or grade-4 or grade-four or fourth-grade or 4th-grade or grade-5 or grade five or 5th grade or fifth grade or grade-six or 6th grade or sixth grade or grade-7 or grade-seven or 7th grade or seventh grade or grade-8 or grade-eight or 8th grade or eight grade or grade-9 or grade-nine or 9th grade or ninth grade or grade-10 or grade-ten or 10th grade or tenth grade or grade-11 or grade-eleven or 11th grade or eleventh grade or grade-12 or grade-twelve or 12th grade or twelfth grade).ti,ab,id.

55. Or/53–54

56. (adolescen* or boys or child* or girls or juvenil* or minor* or offspring* or puberty or school-age* or teen* or young* or youth* or underage* or under age*).ti,ab,id.

57. 55 and 56

58. Elementary Schools/

59. High Schools/

60. Junior High Schools/

61. Middle Schools/

62. School Based Intervention/

63. School Nurses/

64. ((classroom* or highschool* or pupil* or school* or teacher*) adj3 (based or environment* or intervent* or implement* or setting*)).ti,ab,id.

65. (school* adj2 (elementary or high or middle or primary or secondary)).ti,ab,id.

66. or/57–65

67. Work Teams/

68. Interdisciplinary Treatment Approach/

69. Collaboration/

70. Cooperation/

71. exp Group Performance/

72. Collective Behavior/

73. Integrated Services/

74. ((cross-agenc* or crossagenc* or cross-disciplinar* or crossdisciplinary* or cross-institutional* or crossinstitutional* or cross-organizational* or crossorganizational* or cross-professional* or crossprofessional* or crosssectoral* or cross-sectoral* or inter-agenc* or interagenc* or inter-disciplinar* or interdisciplinary* or inter-institutional* or interinstitutional* or inter-professional* or interprofessional* or inter-sectoral* or intersectoral* or multi-agenc* or multiagenc* or multi-disciplinar* or multidisciplinar* or multi-institutional* or multiinstitutional* or multi-professional* or multi-professional* or multi-sector* or multisector* or trans-agenc* or transagenc* or transdisciplinary* or transdisciplinar* or trans-institutional* or transinstitutional* or trans-professional* or transprofessional* or transsectoral* or transsectoral*).ti,ab,id.

75. (professional* adj3 (collaborat* or coordinat* or coop* or partnership* or teamwork)).ti,ab,id.

76. ((collaborat* or coordinat* or coop*).adj6 (behavior* or behaviour* or health or intervention* or mental health or program* or school* staff* or school* nurs* or strateg*)).ti,ab,id.

77. or/67–76

78. exp Child Welfare/

79. Child Psychiatry/

80. Adolescent Psychiatry /

81. Health Care Services/

82. exp Mental Health Services/

83. exp Community Services/

84. Psychiatric Nurses /

85. Community Psychiatry /

86. exp Social Casework/

87. Primary Health Care/

88. ((emergenc* or health or psychiat* or psycholog*).adj3 (care or nursing or practice* or service*)).ti,ab,id.

89. (adolescent psychiatry or assertive community treatment or child guidance or child psychiatry or child welfare or community psychiatry or health care or mental health center* or mental health clinic* or mental health rehabilitation or primary care or psychiatric rehabilitation or psycholog* rehabilitation or psychosocial rehabilitation or social psychiatry or social service* or social work* or support* or treat*).ti,ab,id.

90. or/78–89

91. exp Program Evaluation/

92. Exp Treatment Effectiveness Evaluation/

93. (barrier* or determinant* or effect* or evaluat* or facilitat* or factor* or implement* or intervent* or predict* or program*).ti,ab,id.

94. r/91–93

95. 52 and 66 and 77 and 90 and 94 1642

96. 95 not (exp animals/not humans.sh.) 1641

97. 96 and (danish or english or norwegian or swedish).lg. 1557

98. 97 not dissertations.dt. 1238
Appendix A.4. ERIC

Field labels

MAINSUBJECT.EXACT.EXPLODE = exploded subject heading
MAINSUBJECT.EXACT non exploded subject heading
TLAB = title, abstract
N/x = within x words, regardless of order
* = truncation of word for alternate endings

(MAINSUBJECT.EXACT(“Mental Health” OR “Mental Disorders” OR “Psychopathology” OR “Adjustment (to Environment)” OR “Affective Behavior” OR “Depression (Psychology)” OR “Anxiety” OR “Fear” OR “Eating Disorders” OR “Aggression” OR “Sleep” OR “Pain” OR “Hyperactivity” OR “Social Problems” OR “Delinquency” OR “Antisocial Behavior” OR “Quality of Life” OR “Well Being” OR “Wellness” OR “Life Satisfaction” OR “Psychological Patterns” OR “Resiliency (Psychology)”)) OR MAINSUBJECT.EXACT.EXPLODE(“Anxiety Disorders” OR “Self Destructive Behavior” OR “Emotional Disturbances” OR “Attention Deficit Disorders” OR “Behavior Disorders” OR “Substance Abuse” OR “Self Concept”) OR TLAB((mental OR emotional OR psychiatric OR psychologic*) N/3 (disease* OR disorder* OR distress OR health OR illness* OR “ill health” OR illhealth OR instabilit* OR problem* OR symptom*))

AND

(TLAB((classroom* OR highschool* OR pupil* OR school* OR teacher*) N/3 (based OR environment* OR intervent* OR implement* OR setting* OR elementary or high or middle or primary or secondary)) OR (MAINSUBJECT.EXACT.EXPLODE(“Students” OR “Schools”) OR TLAB(“Education” OR “Classroom Environment” OR “School Health Services” OR “School Nurses” OR “Ancillary School Services”)))

AND

((MAINSUBJECT.EXACT(“Interprofessional Relationship” OR “Interdisciplinary Approach”) OR MAINSUBJECT.EXACT.EXPLODE(“Cooperation”) OR TLAB(“collaborat* OR coordinat* OR cooperat* OR partnership* OR teamwork) OR TLAB(“cross-disciplinar*” OR interagency* OR interdisciplinary* OR intersectoral* OR interinstitutional* OR interprofessional* OR multidisciplinar*) N/6 (care OR communicat* OR “health care” OR intervention* OR “mental health” OR program* OR relation* OR team* OR stratag*))

AND

((MAINSUBJECT.EXACT(“Child Welfare” OR “Health Services” OR “Community Health Services” OR “Clinic” OR “Psychosocial Clinics” OR “Psychiatric Services” OR “Social Work” OR “Primary Health Care”) OR TLAB(emergenc* OR health OR psychiat* OR psycholog*) N/3 (care OR nursing OR practice* OR service*)) OR TLAB(“healthcare” OR “mental health center” OR “mental health clinic” OR “mental health rehabilitation” OR “primary care” OR “psycho rehabilitation” OR “social service” OR “social work” OR support* OR treat*))

AND (MAINSUBJECT.EXACT(“Program Evaluation” OR “Program Effectiveness” OR “Program Development” OR “Program Implementation” OR “Mental Health Programs”) OR TLAB(“barrier*” OR determinant* OR effect* OR evaluat* OR facilitat* OR factor* OR implement* OR intervent* OR predict* OR program*))

Applied filters: Scholarly Journals OR Reports OR Dissertations and Theses

Appendix B. Eligibility Criteria

| Study Focus/Content | Inclusion Criteria | Exclusion Criteria |
|--------------------|--------------------|--------------------|
| Implementation of the intervention | • Determinants, challenges, problems, barriers, supportive factors that are linked to the characteristics of the intervention, linked to the outer context, linked to the inner context, linked to the characteristics of the individuals, linked to the implementation process | • Prevalence of illness, Needs of interventions, Factors/determinants that are predicted and not demonstrated |
| The Interventions | • Mapping i.e., identify symptoms and causes, Assessment of what type of intervention that is needed, Health promoting intervention i.e., highlights and strengthens what works for the individual, Interventions to ensure that health promoting interventions reach children at risk, Preventive interventions, Referrals of acute or extensive needs, Support/treatment i.e., all interventions that intend to increase wellbeing, Consult support to other organisations i.e., to educate about mapping, support, and referrals, Offer the right help at the right time i.e., availability and early discovery, Child perspective i.e., the child’s best at interest and to involve the child, Support for the transition into adulthood | • Studies about ongoing work and not specific interventions |
| Study Focus/Content | Inclusion Criteria | Exclusion Criteria |
|--------------------|-------------------|-------------------|
| Collaborative partners | • Social worker/representative from the social services  
• Employed within the health care services  
• Employed at a university with a clinical role | • Only a school or collaboration with other schools  
• A university with researchers without clinical roles  
• Non-profit organisations  
• Voluntary work  
• Student interns from vocational education  
• Studies with more collaborative partners than schools, social services and health care services |
| Arena of the intervention | • In school (preschool to upper secondary school) not necessary with school personnel  
• With a school representative with a specific role to collaborate externally | • Outside school and without a school representative  
• Education outside school, for example juvenile facilities/jail  
• Interventions conducted solely outside of school |
| Target group | • Children and youth with signs of or at risk of mental ill-health  
• People close to the child, i.e., people who work with children or caregivers | • Studies that include other groups outside our target group such as college students or infants |
| Problem | • Mental ill-health  
• Indicators of mental ill-health | • Studies that describe interventions targeted more problems than mental ill-health, symptoms of mental ill-health or indicators of mental ill-health. For example, interventions that promote availability of care targeting general health and not only mental ill-health |
| Language | • English  
• Scandanavian languages | |
| Type of publication | • Scientific journals  
• Reports  
• Dissertations | • Conference abstracts  
• Study protocols  
• Reviews  
• Debate articles  
• Books  
• “Case” studies about single individuals |

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