Methods to Prevent Mental ill-Health in Children

A Systematic Review



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Summary and Conclusions of the SBU Report:

Methods to Prevent Mental ill-Health in Children

A Systematic Review

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Finding methods to prevent mental ill-health in children is of urgent importance. Data suggest that mental ill-health in children may have increased in recent decades, and structured interventions to address this problem have become increasingly common in municipal services and health services. Interventions often consist of standardised programmes, which are described in manuals and other documents.

This summary describes the scientific evidence for two types of programmes: those intended to prevent externalising behaviour problems (e.g., acting out) in children and adolescents, and those primarily intended to prevent internalising behaviour problems (e.g., anxiety, depression, and self-harm). The programmes are intended to have effects not only directly afterwards, but also in the long term. Programmes aimed at general health promoting effects, e.g., preventing drug abuse and violent acts, are not included.

The report was developed at the request of the Royal Swedish Academy of Sciences and the UPP Centre (Development Centre on Mental Health in Children) at the National Board of Health and Welfare. Both organisations called for a systematic literature review to determine the benefits of using programmes to prevent mental ill-health in children.

SBU's Conclusions

☐ Of the 33 standardised and structured programmes assessed, all of which aim to prevent mental ill-health in children, the international literature describes seven that are supported by limited scientific evidence. They include: parenting support programmes (Incredible Years and Triple P), a family support programme (Family Check-Up), and school programmes (Good Behaviour Game, Coping Power, Coping with Stress, and FRIENDS). With few exceptions, the effects are minor. The studies have been conducted in countries outside Sweden.

Since the effects probably vary depending on social and cultural contexts, the extent to which the programmes and their effects can be transferable to Sweden is uncertain. Hence, the programmes may need to be adapted to Swedish values and views on the rights of children.

☐ Around 100 different programmes, primarily directed at externalising behaviour, are used in Sweden to prevent mental illhealth in children. None of these has been assessed in Sweden by randomised trials with at least six months of follow-up¹.

According to international studies, the preventive effects of the Incredible Years, Triple P, and Family Check-Up programmes are supported by limited scientific evidence.

Each of the programmes known as KOMET¹, COPE, SET, StegVis, Beardslee's Family Intervention, Connect, and DISA have been studied in at least one controlled trial, but the scientific evidence for preventive effects is insufficient.

Other programmes used in Sweden have not been scientifically assessed as prevention programmes.

- ☐ Programmes based on having adolescents with externalising behaviour problems meet in groups can increase the risk of norm-breaking behaviour. Other negative effects of programmes that target externalising and internalising behaviour problems are conceivable, but not fully investigated.
- □ Randomised trials are needed to study whether the programmes currently in use have preventive effects in Swedish populations and do not involve risks. Also needed are economic studies that investigate whether or not the programs are cost-effective.

¹ A medium-quality study of SkolKOMET was published after the systematic literature review had been concluded. It is not included in the scientific evidence [4].

SBU's Summary

Background and aim

Mental ill-health can be defined in different ways. We used the definition of the Swedish Committee on Child Psychiatry (SOU 1998:31), which focuses primarily on symptoms demonstrated by the child. Lasting symptoms that prevent the child from optimally functioning and developing, and that cause suffering, are to be considered mental ill-health. This definition is in line with the prevention programmes, which aim almost exclusively at reducing symptoms.

In responding to questionnaires, most Swedish schoolchildren report that they feel healthy, both physically and mentally. However, the percentage of schoolchildren that reports experiencing symptoms of mental ill-health, e.g., depressed moods, headaches, and sleep problems, has increased steadily since the 1980s. Mainly, girls in upper secondary school comprise the group reporting more problems [1].

Severe mental ill-health appears more often in children living under adverse psychosocial conditions than children living under better circumstances. However, separate, self-reported psychiatric symptoms in children and adolescents aged 10 to 18 years are found at nearly the same rate, regardless of social environment [2].

Children that demonstrate obstinate and acting-out behaviour at an early age are at higher risk of developing severe, long-term, function-impairing, mental ill-health of both types, i.e., externalising and internalising behaviours [3]. They are overrepresented among those that develop antisocial behaviour later in life. One hypothesis is that early interventions aimed at interrupting such behaviour could reduce the risk of later mental ill-health involving the externalising type of behaviour. Another hypothesis is that it could be more advantageous to change the child's behaviour by focussing on the parents and parent-child interactions. Research based on these assumptions has resulted in development of structured interventions to prevent mental ill-health of the externalising type. The interventions are based primarily on developmental psychology, social learning theories, and consequence-oriented behavioural methods. Often, several interventions are combined into a single programme.

Correspondingly, programmes have been developed to prevent internalising behaviour problems, primarily depression and anxiety. The programmes are based nearly exclusively on theories emanating from cognitive behavioural therapy.

Preventive interventions can be used at several levels:

Universal prevention targets everyone without consideration of risk factors.

Selective prevention targets groups of individuals having a common risk factor for mental ill-health, e.g., a socially vulnerable living environment, or substance abuse by parents.

Indicated prevention targets individuals clearly at risk for developing mental ill-health, usually because they have a higher level of symptoms. The borderline between indicated prevention and *early treatment* is difficult to define.

Through a systematic review of the scientific literature, this report aims to identify the evidence concerning prevention programmes for mental ill-health in schoolchildren.

Limitations

The project is limited to the following:

- The programmes should have the expressed purpose of preventing mental ill-health. Hence, this excludes studies limited to investigating programme effects on, e.g., reduced consumption of alcohol, narcotics, and tobacco and reduced incidence of violent acts and bullying. Such studies are important, but require a separate systematic review.
- The studies should investigate programme effects on mental ill-health in children. Hence, studies that measured only parental behaviours or attitudes were not included. The effects should persist for a longer period, at least six months after the programme has concluded. The effects could be compared with either no extra intervention, or with some form of active control, e.g., self-studies.
- The programmes should target children and adolescents aged 2 to 19 years, their parents/guardians, or their teachers. Hence, we did not include studies that investigated the effects of support in parents with infants. Likewise, studies of clinical populations, or children with functional disabilities or medical problems that could increase the risk of mental ill-health were not included.

Questions

- What programmes prevent mental ill-health of the externalising and internalising types?
- Which components of the programmes contribute to the effects?
- Is there an association between the intensity and duration of programmes and their effects?
- Are programme effects influenced by the individuals that implement the programmes and the extent of their training in the programme?
- What are the risks involved in using the programmes?
- Are the effects influenced by the child's gender, socio-economic situation, and ethnicity?
- If the programme is effective, is it then also cost-effective?
- Are there ethical aspects of the programmes that should be considered?

Method

SBU uses a systematic method. In addressing each question, we conduct a broad literature search in selected databases. Studies that meet our inclusion criteria are appraised for quality and summarised in tables in accordance with a methodology developed for this purpose. Findings from the studies are evidence-graded. The results of the literature review are then weighed against current practice and economic, social, and ethical aspects. Finally, the conclusions are adjusted for Swedish conditions.

Facts 1 Study Quality, Relevance and Evidence Grading.

Study quality refers to the scientific quality of an individual study and its capacity to answer a specific question in a reliable way.

Evidence grade refers to the assessed strength of the collective body of scientific evidence and its capacity to answer a specific question in a reliable way. SBU uses an international evidence grading system called GRADE. Study design is the primary factor considered in the overall assessment of each outcome measure. Secondary factors that can increase or decrease the strength of the evidence include: study quality, relevance, consistency, transferability, effect size, data precision, risk of publication bias, and other aspects, e.g. the dose-response relationship.

Evidence grades - four levels

Strong scientific evidence (⊕⊕⊕⊕)

Based on high or medium quality studies with no factors that weaken the overall assessment.

Moderately strong scientific evidence (⊕⊕⊕○)

Based on high or medium quality studies with isolated factors that weaken the overall assessment.

Limited scientific evidence (⊕⊕○○)

Based on high or medium quality studies having factors that weaken the overall assessment.

Insufficient scientific evidence (⊕○○○)

Scientific evidence is deemed insufficient when scientific findings are absent, the quality of available studies is low, or studies of similar quality present conflicting findings.

The stronger the evidence, the lower the likelihood that new research findings would affect the documented results within the foreseeable future.

Conclusions

SBU's conclusions present an overall assessment of benefits, risks, and cost effectiveness.

Results

The scientific evidence for programmes aimed to prevent externalising behaviour problems included 39 studies of 24 different programmes. Of these, 4 studies involved universal programmes, 19 involved selective programmes, and 16 involved indicated programmes.

The scientific evidence for programmes aimed to prevent internalising behaviour problems included 22 studies of 10 programmes. Of those, 11 involved universal programmes, 2 involved selective programmes, and 9 involved indicated programmes.

Unless otherwise indicated, the programmes were not compared with any additional interventions.

Can programmes targeted at problems of externalising behaviour prevent mental ill-health in children?

Universal prevention

- As a universal school intervention, the Good Behaviour Game reduces symptoms of externalising behaviour in schoolchildren for at least 12 months, but the effects are minor (limited scientific evidence ⊕⊕○○).
- We were unable to determine whether other universal school programmes can prevent mental ill-health of the externalising type. Too few studies were available (insufficient scientific evidence ⊕○○○).
- We found no scientific evidence on universal programmes in environments other than schools.

Selective prevention

- Regarding prevention at the selective level, the Triple P parenting support programme reduces symptoms of externalising behaviour in children of pre-school age for at least 12 months in groups with minor to moderate social problems (limited scientific evidence ⊕⊕○○). The effects are small or moderate (limited scientific evidence ⊕⊕○○).
- The Incredible Years parenting support programme has been tested only as a selective prevention programme in environments where social vulnerability is substantial. In this context, the programme has a small effect on symptoms of externalising behaviour in pre-school children for at least eight months, based on blinded observations (limited scientific evidence ⊕⊕○○). Ratings by parents suggest that the programme has little or no effect (limited scientific evidence ⊕⊕○○).
- Selective programmes targeted at families affected by internal stress reduce externalising behaviour in the children in followups of at least 11 months (limited scientific evidence ⊕⊕○○).
 The effects are very small (limited scientific evidence ⊕⊕○○).
- We were unable to determine whether other selective programmes could prevent mental ill-health in children, since the studies are too heterogeneous (insufficient scientific evidence ⊕○○○).

Indicated prevention

 Regarding prevention at the indicated level, the Family Check-Up (with access to additional interventions if needed) reduces symptoms of externalising behaviour in children and adolescents for at least 12 months (limited scientific evidence ⊕⊕○○).
 The effects are moderate (limited scientific evidence ⊕⊕○○).

- Coping Power, a school programme, reduces the degree of externalising behaviour in schoolchildren for up to 12 months (limited scientific evidence ⊕⊕○○). The effects are small (limited scientific evidence ⊕⊕○○).
- We were unable to determine whether other indicated programmes reduce externalising behaviour in follow-ups from six months inconsistent results (insufficient scientific evidence ⊕○○○).
- Programmes for selective and indicated prevention can, over a
 period of several years, reduce the percentage of young people
 that fulfills the criteria for psychiatric diagnoses, including
 antisocial behaviour (limited scientific evidence ⊕⊕○○).

Can programmes targeted at symptoms of internalising behaviour prevent mental ill-health?

Universal prevention

- We were unable to determine whether universal school programmes permanently reduce symptoms of depression in children. The studies present conflicting results, and effects are either insignificant or absent (insufficient scientific evidence ⊕○○○).
- As universal prevention, the FRIENDS school programme reduces anxiety symptoms in children aged 10 to 13 years for at least one year after the conclusion of the prevention programme (limited scientific evidence ⊕⊕○○). The effects are small (limited scientific evidence ⊕⊕○○).

- We were unable to determine whether other universal school programmes reduce symptoms of anxiety in children. The studies present conflicting results (insufficient scientific evidence ⊕○○○).
- We were unable to determine whether universal school programmes have effects on other symptoms of mental ill-health of the internalising type in children and adolescents. We found no controlled studies (insufficient scientific evidence ⊕○○○).

Selective prevention

- We were unable to determine whether selective prevention programmes can permanently reduce symptoms of depression or anxiety in children. The studies are few and heterogeneous (insufficient scientific evidence ⊕○○○).
- We were unable to determine whether programmes for selective prevention can prevent other symptoms of mental ill-health of the internalising type in children. No studies were found (insufficient scientific evidence ⊕○○○).

Indicated prevention

- The Coping With Stress (CWS) programme, as indicated prevention, reduces the risk of a diagnosis of depression in children and adolescents within one year of completed intervention (limited scientific evidence ⊕⊕○○). The effects are moderate (limited scientific evidence ⊕⊕○○).
- We were unable to determine the effects of Beardslee's Family Intervention. The programme is equally effective as lectures, but it has not been compared with inactive controls (insufficient scientific evidence ⊕○○○).

- School-based programmes, as indicated prevention, reduce the degree of depressive symptoms in children and adolescents for up to two years after the conclusion of preventive treatment, but the effects are very small (limited scientific evidence ⊕⊕○○).
- We were unable to determine whether indicated programmes can reduce the degree of anxiety symptoms in children in the short or long term. Too few studies are available (insufficient scientific evidence ⊕○○○).
- We were unable to determine whether indicated programmes can prevent suicidal thoughts and suicidal behaviour in children and adolescents. Studies are few, and most have low scientific quality (insufficient scientific evidence ⊕○○○).
- We were unable to determine whether indicated programmes can prevent other symptoms of mental ill-health of the internalising type in children and adolescents. Studies are not available (insufficient scientific evidence ⊕○○○).

Other findings on programme effects

- We were unable to determine whether certain components are more active than others. The studies are too heterogeneous (insufficient scientific evidence ⊕○○○).
- We were unable to determine whether there is an association between a programme's effects and its intensity and duration. Studies show conflicting results (insufficient scientific evidence ⊕○○○).

 We were unable to determine the extent to which provider skills/qualifications affect the outcomes. Most of the studies included specially trained personnel (insufficient scientific evidence ⊕○○○).

Risks and negative effects

- Adolescents with high levels of externalising behaviour that
 participate in group interventions within the framework of
 selective and indicated prevention programmes can negatively
 influence each other and other participants (limited scientific
 evidence ⊕⊕○○).
- We were unable to determine whether any other risks are associated with programmes for externalising or internalising behaviour problems. Studies are not available (insufficient scientific evidence ⊕○○○).

Health economics

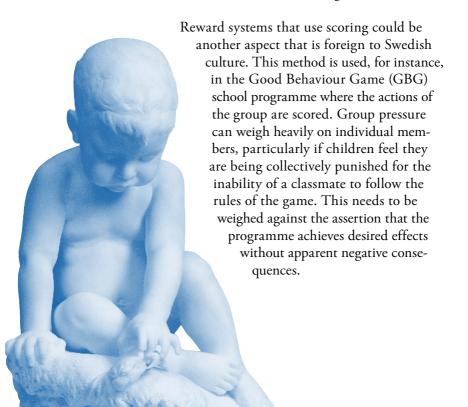
Evidence is not available for assessing the cost-effectiveness of programmes to prevent mental ill-health in schoolchildren. Two U.S. studies investigated the cost-effectiveness of the Coping With Stress and Incredible Years programmes respectively, but the studies are difficult to transpose to the Swedish context.

Ethical aspects

Programmes to prevent mental ill-health in children have many inherent ethical implications. Some involve specific elements of the programmes, while others are more general.

Prevention programmes may reflect a narrow attitude toward problems and solutions. They address problem individuals rather than societal problems. Hence, the programmes could be perceived as a better alternative than structural community initiatives, even though many of those at risk for problems are found in socially vulnerable groups.

Nearly all programmes have Anglo-Saxon origins and might therefore be based on views toward children that differ somewhat from Swedish views. Obedience to adults is given stronger emphasis and constitutes a goal in many programmes. Some elements in the programmes may reflect a lack of respect for children and their needs. A controversial example is the "timeout" concept found in many of the family support programmes. If it is used as a way to isolate the child from contact by "standing in a corner" or being locked in their room, it could violate the United Nations' convention on children's rights.



Parenting programmes may threaten parental autonomy in the sense that they exploit parental uncertainty. There is also a risk that balance in the family system might be affected in an undesirable way. But the opposite is also possible, i.e., that programmes help uncertain parents regain control over their situation and strengthen their skills and self-esteem as parents. This is part of the programmes' goal and, if achieved, the programmes would promote autonomy for children and parents alike.

Ethical questions vary with the level of prevention. Universal prevention programmes have both advantages and disadvantages. Universal interventions might even reach some that would otherwise underutilise assistance. A disadvantage is that resources that might have been used for children with special needs are used instead for programmes to cover everyone, regardless of need. Another important question concerns the degree to which participation should be voluntary. If the programme is perceived to prevent ill health, it might seem obvious that the health services' requirement for informed consent should apply. Hence, participation would be voluntary, which could mean that many potentially high-risk children might choose not to participate.

Stigmatisation is often mentioned as a problem in conjunction with prevention programmes. Stigmatisation means being negatively singled out in some way and could, e.g., lower a child's status among schoolmates. A frequently noted advantage of universal programmes is that participation does not carry a stigma. Nevertheless, it cannot be ruled out that programmes could have a stigmatising effect on the people (or families) for whom the solutions do not work and who thereby appear to be less successful. Likewise, the extent to which stigmatisation is a problem in selective and indicated prevention is not clear. The way that a targeted intervention is offered can play an important role. Some studies indicate that children can feel chosen and recognised in a positive sense.

Desirable changes in practice and the potential consequences

A *long-term* goal should be that all programmes in use must show enduring effects that are supported by scientific evidence, and the programmes should be tested in different Swedish communities.

A *short-term* goal should be to systematically assess the effects of programmes already established locally. Mental ill-health in children should be measured before the programme starts and during follow-up.

If organisations decide to introduce new programmes, the programmes should be selected from the small group shown to have effects supported by scientific evidence in international studies. It is also reasonable that organisations consider, to a greater extent, structural alternatives to these programmes. Examples would include greater investment in schools and pre-schools and increasing the accessibility to care and support for children and adolescents that need it.

For children and their parents, the consequences of changes in practice would probably be positive. They would receive better help if programmes with unknown outcomes were replaced by others supported by stronger evidence (programmes or other methods). Parents could avoid investing time and energy in ineffective interventions. Also, from an ethical perspective, the changes would be more advantageous for children and parents.

Organisations and services would also benefit. The evidence base would improve, and methods that are ineffective in the local context could be phased out earlier. In principle, this would offer an opportunity to save costs and use resources more efficiently. Cost-

effectiveness, i.e., the health effects per invested Swedish krona (SEK), would probably improve.

Systematic follow-ups would have organisational consequences in municipalities and county councils and would require extra resources. Staff would need to be trained in methods of measuring mental ill-health. Organisations and services that currently use poorly assessed programmes, but change to more well-documented alternatives, would incur additional costs to educate staff in the programme and its implementation.

Knowledge gaps and research needs

Our review shows that few preventive programmes are supported by scientific evidence. Although many programmes can reduce problems in the short term, the duration of these effects is uncertain. Studies have shown that in some cases the effects abate. However, the long-term effects of other programmes have not been studied. Nevertheless, some long-term follow-ups suggest that successful preventive intervention can reduce mental ill-health for many years.

Another problem concerns the strong influence that social and cultural contexts have on the effects of the various methods. Programmes found to be effective in international studies might not have the same effects in a Swedish context. The effects could be either greater or smaller.

From a Swedish perspective, there are two major research needs. The questions that need to be answered are:

- Which of the programmes shown by scientific evidence to have "sufficient" effects would also have sufficient effects in different Swedish communities?
- How long do the effects of these programmes last?

Since the scientific evidence is deficient, there is a substantial risk that children and their families are being exposed to ineffective programmes. Hence, it is essential to collaborate at the national level and quickly initiate randomised trials with long-term follow-up of a small number of programmes. Concurrently, it would be valuable to study whether the programmes could enhance the effects of structural interventions, not least interventions in socially vulnerable environments.

Five programmes should receive priority, based on our review. These are: the Family Check-Up, two programmes for internalising behaviour problems (CWS/DISA at the selective level; and FRIENDS, which is a universal programme), and two selective parenting support programmes for externalising behaviour (Triple P and Incredible Years). Studies have shown minor effects from the Incredible Years programme. However, the studies were conducted under conditions where social and economic problems could be expected to overshadow the effects of preventive programmes.

Finally, while substantial national resources are being invested in programmes, very little is known about their effects. It would be reasonable to earmark some of these resources for nationally coordinated, randomised trials.

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SBU Evaluates Health Care Technology

Below is a brief summary of the mission assigned to SBU by the Swedish Government:

- SBU shall assess healthcare methods by systematically and critically reviewing the underlying scientific evidence.
- SBU shall assess new methods as well as those that are already part of established clinical practice.
- SBU's assessments shall include medical, ethical, social and economic aspects, as well as a description of the potential impact of disseminating the assessed health technologies in clinical practice.
- SBU shall compile, present and disseminate its assessment results such that all parties concerned have the opportunity to take part of them.
- SBU shall conduct informational and educational efforts to promote the application of its assessments to the rational use of available resources in clinical practice, including dental care.
- SBU shall contribute to the development of international cooperation in the field of health technology assessment and serve as a national knowledge centre for the assessment of health technologies.

Methods to Prevent Mental ill-Health in Children

The report on Methods to Prevent Mental ill-Health in Children from the Swedish Council on Health Technology Assessment (SBU) is a systematic review of the scientific literature in the field.

This document presents the summary and conclusions of the full report approved by SBU's Board and Scientific Advisory Committee.

The full report is available at www.sbu.se