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Digital methods supporting the treatment of depression in adolescents

NRF Clinical Practice Guidelines™

COMPOSITION AND AFFILIATIONS OF THE WORKING GROUP

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Introduction

Depression is one of the most common health issues among adolescents: depressive symptoms occur in approximately 34 percent of adolescents, while the prevalence of depressive disorder requiring treatment is approximately 8 percent[1]. Girls carry twice the risk of developing depression compared with boys. Up to 70 percent of persons who have experienced depression have a recurrence within five years, which adversely affects the prognosis for recovery[2]. Depression and anxiety frequently occur concurrently[3].

Depression is associated with low mood, loss of interest, difficulty concentrating, as well as disturbed sleep and eating[4]. These symptoms affect school attendance and attainment, physical health[5], family life and interpersonal relationships[4] and subsequent employment[6]. If untreated, depression may impair functioning in adulthood[5].

Mental health disorders are the most common reason for sickness allowance, and 46 percent of sickness-allowance periods among people under 35 years of age are attributable to mental health conditions[7]. Depression is the largest single contributor to pensions granted on mental health grounds[8].

The National Mental Health Strategy (2020–2030) requires adolescents to receive developmentally appropriate support in their immediate environment, together with adequate resources for the prevention and treatment of mental health issues[6]. Moreover, legislation on the therapy guarantee requires people under 23 years of age to have access to specified services within one month of the need being identified.

Digital solutions complement services and create new models of practice[9]. Adolescents should be consulted during the development of such solutions[10,11]. Digital programmes based on cognitive behavioural therapy (CBT) have been studied extensively; their effectiveness is moderate and comparable with in-person treatment[12,13]. Digital services facilitate access irrespective of time and place, but adolescents' experiences are influenced by their motivation, programme usability, and privacy[14,15]. However, adolescents wish to have in-person appointments as well[16]. Digital health services may also reach adolescents at an earlier stage of symptom development, prior to meeting the criteria for access to treatment[17].

This clinical practice guideline provides information on digital methods used in the treatment of depression in adolescents and on the effectiveness of these methods. It supports health and social care organisations, professionals, and multidisciplinary decision-making in the development and implementation of evidence-based methods for treating depression in adolescents.

Purpose, aim, and target groups of the guideline

Purpose and aim of the guideline

The purpose of this clinical practice guideline is to collate the available evidence derived from critically appraised research and to provide evidence-based recommendations on the factors to be considered when using digital methods in the treatment and support of adolescents with depression. The guideline provides recommendations to support decision-making concerning the selection of digital methods and the consideration of factors relating to the adolescent, the collaborative relationship between the adolescent and the professional, and the characteristics and usability of the digital programme.

The aim of the clinical practice guideline is to increase knowledge of the use of digital methods as part of the treatment of depression in adolescents and the promotion of their wellbeing, and to facilitate related evidence-based decision-making in health and social care. A further aim is to promote the implementation of evidence-based and effective digital methods for treating depressive symptoms in adolescents.

Target groups

The clinical practice guideline has been prepared for health and social care professionals who encounter adolescents with depression or depressive symptoms in their work, and for organisations that develop, implement, and deliver treatment for depression in adolescents using digital methods. The clinical practice guideline is suitable for multidisciplinary use in primary healthcare, specialised healthcare, and social care. It may be used to support nursing management and workforce planning, particularly when planning the implementation of methods. In addition, the clinical practice guideline may be used in health and social care education and in the development of learning materials.

Key concepts

Adolescence

Adolescence is the transitional phase between childhood and adulthood. The age range of adolescence has been defined in various ways. According to the World Health Organization (WHO), an adolescent is a person aged 10–19 years[18]. In Finland, the Youth Act (1285/2016)[11] defines a young person as anyone under 29 years of age. By contrast, the United Nations Convention on the Rights of the Child defines every person under 18 years of age as a child[19]. Broadly considered, adolescence begins at approximately 10 years of age and continues until around 24 years of age as the brain develops[20]. Adolescence is characterised by rapid physical, neurobiological, cognitive, and social change. In the research literature, adolescence is typically divided into early adolescence (approximately 10–13 years), middle adolescence (14–17 years), and late adolescence or early adulthood (18–25 years). Early adolescence is characterised particularly by the onset of puberty and increased body awareness; middle adolescence by identity formation, the development of abstract thinking and emotional regulation; and late adolescence by neurobiological maturation, independent decision-making and the transition to adult roles. Adolescence is a dynamic and individual process in which biological, psychological, and social factors interact continuously.[20–22]

In Finland, the lower age limit for adolescent psychiatric care is 13 years. The upper age limit varies between adolescent psychiatry units but is most commonly 17 years.[23] In Finnish statistics maintained by the Finnish Institute for Health and Welfare (THL), outpatient visits by persons under 18 years of age are recorded under adolescent psychiatric care, whereas outpatient visits by those aged 18 years and over are reported under adult psychiatric care[24]. In this clinical practice guideline, the term ‘adolescent’ refers to persons aged 13–17 years.

Depression

Depression is a common mental health disorder affecting approximately six percent of the Finnish population. It is a condition characterised by a pervasive lowering of mood and a loss of pleasure and interest.[25] Depression manifests in various ways, and symptoms during adolescence may be diverse. Core symptoms include low mood, loss of pleasure, and fatigue. Low mood may manifest, for example, as tearfulness, unusual irritability, or suicidal thoughts. Initiating activities may be difficult, and concentration difficulties, changes in appetite, and sleep disturbances are typical symptoms of depression.[26,27]

Depression impairs functioning and quality of life, and its effects vary according to severity. The effects typically concern cognitive functions, including information processing, attention, and executive functioning. The impact on the adolescent’s functioning is assessed across different areas of life, including capacity to study and social functioning in peer and family relationships.[25] In early adolescence, depression commonly manifests as somatic symptoms, such as abdominal pain or headache, and it may also manifest as restlessness and behavioural disturbances. In adolescents, risk-taking behaviour, including early experimentation with sexual activity or substance use, may be associated with depression.[26]

Depression is frequently accompanied by comorbid conditions, including personality disorders, substance use disorders, and anxiety disorders. Approximately half of people with depression have also been diagnosed with an anxiety disorder. Anxiety disorders commonly associated with depression include panic disorder, social anxiety disorder, other phobic disorders, and generalised anxiety disorder. Anxiety disorders associated with depression impair psychosocial functioning and quality of life.[25]

Digital methods

Digital methods may function as stand-alone forms of treatment or complement conventional mental health services. They may be used alongside conventional treatment to support and strengthen care and to help adolescents develop coping strategies for managing mental health issues[28–32].

Digital methods may provide information, self-help and self-management programmes, counselling and peer support, and facilitate contact with professionals and mentors. The terminology used to describe digital methods is not yet fully established[33-36]. The Behavioral Intervention Technology model developed by Mohr et al. (2014)[37] describes how technology can be designed and used to modify behaviours related to mental health. The model distinguishes between the levels of theoretical intervention and technical implementation.

Cognitive behavioural therapy (CBT) is the theoretical basis most commonly used in digital methods, and its internet-delivered forms are referred to as iCBT (internet-delivered cognitive behavioural therapy). The technical implementation of digital methods may include, for example, interactive games, online discussions, and mobile applications. Participants may be provided with various exercises, homework assignments, workbooks, tests, and questionnaires. The methods are typically structured and comprise task-based sections or modules delivered over a period of 3–10 weeks. One module usually lasts approximately one week. The time adolescents spend using programmes varies from 20 minutes to three hours per week.[38]

In this clinical practice guideline, digital methods refer to therapeutic programmes delivered online, by computer, through a mobile application, smartphone or tablet, and intended for the treatment of adolescents with depressive symptoms or to support the treatment. These methods aim to facilitate positive changes in the adolescent's behaviour, patterns of thinking or motivation, thereby supporting the achievement of treatment goals.

Requirements for digital software and applications

The following matters must always be considered when digital methods are used as part of the treatment of a condition to support wellbeing.

Medical devices

When selecting digital treatment methods, it should be verified that software or applications intended for medical purposes are CE-marked medical devices.

If software or an application guides treatment, provides clinical recommendations, or functions as a treatment method, it is classified as a medical device (see below).

Medical purposes include, for example:

- diagnosis, prevention, prediction, prognosis, monitoring, treatment, or alleviation of a disease;
- diagnosis, monitoring, treatment, alleviation of or compensation for an injury or disability;
- examination, replacement, or modification of the anatomy or of a physiological or pathological process or state.[39]

A medical device includes, for example, software intended by its manufacturer to be used for human beings, either independently or in combination.[39]

Further information on the classification of software or applications is available, for example, from:

- Medical Device Coordination Group (MDCG) 2021–24: Guidance of classification of medical devices[40].
- Fimea: Software as a medical device[41].

Applications supporting wellbeing

If an application is intended solely to support wellbeing (for example, a general mood diary without a treatment purpose), it does not normally fall within the scope of the medical device regulations.[42] The professional should ensure that the application is safe and valid, for example by using the Qvalidi 2019 checklist.[43]

Safety

The application should be developed in compliance with the EU General Data Protection Regulation (GDPR)[44] and the EU Code of Conduct on privacy for mHealth apps.

Basis of the method

Ensure that experts in the relevant field have contributed to the development of the digital method. Its development should be based on research evidence concerning the topic or on a theoretical framework, and its suitability for the target group should have be evaluated.[43]

Recommendations

The recommendation statements are divided into four sections. The first section addresses the selection and implementation of digital methods in decision-making. Multidisciplinary collaboration is essential in adolescent mental health care; however, the decision concerning the treatment plan is made by the physician responsible for the adolescent's care, and the digital method forms a part of this overall plan. If an adolescent uses a digital application that they have selected independently, it is important for the nursing professional to be familiar with the content of the method and to review it together with the adolescent.

The second section describes the role of the nursing professional in supporting the adolescent in the use of digital methods.

The third section describes factors relating to the adolescent that promote the use of digital methods. The guideline emphasises the adolescent's own perspective and the importance of the family and the wider immediate environment.

The fourth and final section focuses on the characteristics of digital methods intended for depressive symptoms in adolescents, particularly the factors that facilitate or hinder programme use and engagement.

1. Selection of a digital method in decision-making

The use of digital methods in the treatment of depression in adolescents or as an adjunct to treatment should be assessed by a multidisciplinary team within the organisation, because

- **digital methods reduce depressive symptoms in adolescents[12,38,45–54]. (A)**

  - Evidence on the effectiveness of digital methods in reducing depressive symptoms is promising; however, the strength of the evidence varies substantially between methods and is, therefore, partly inconsistent[12,38,45,47–49,55]. It is important to select a method for which evidence of effectiveness is available.
  - There is currently limited research on the longer-term effectiveness of digital methods[38,53,55] and on their adverse effects[46].
  - Adverse effects of digital methods have been reported mainly as discontinuation rates or treatment-response outcomes. Reported adverse effects included depressive symptoms, anxiety symptoms, irritability, and somatic symptoms[46].

- **self-guided digital methods appear to reduce depressive symptoms in adolescents[50,53,56-58]. (B)**

    - Easy-to-use, self-guided self-help programmes incorporating different digital components[59] may support adolescents and complement the service system[57].
    - There is currently no evidence of longer-term benefits, although individual studies have reported positive trends[57].
    - The strongest evidence concerns self-guided digital methods based on cognitive behavioural therapy; however, preliminary evidence also suggests that relaxation, support and monitoring applications may be effective as adjunct treatments[45,56].
    - Adolescents prefer digital mental health applications that they consider reliable, professionally developed, and relevant in content[60].
    - Virtual reality-mediated cognitive training may reduce depressive symptoms in adolescents[34].

When selecting a digital method for treating depression in adolescents, prioritise methods based on cognitive behavioural therapy, because

- **a digital programme based on cognitive behavioural therapy reduces depressive symptoms in adolescents[12,45,51,55,61,62]. (A)**

    - Programmes based on cognitive behavioural therapy have the strongest evidence supporting their use in the treatment of depressive symptoms[12,51,53,55,61,63] and anxiety symptoms[53,62] in adolescents.
    - An online programme based on cognitive behavioural therapy appears to be as effective as in-person cognitive behavioural therapy[62,64].
    - Adolescents with mild depressive symptoms may benefit, for example, from computer-delivered, self-guided cognitive behavioural therapy and high-quality online self-help resources[53,58].
    - Programmes based on cognitive behavioural therapy may include, for example, psychoeducation, behavioural activation, cognitive restructuring, emotion regulation, mental management skills, exposure, problem-solving, relapse prevention and homework assignments[55,63].

When selecting a digital method for treating depression in adolescents, prioritise a method that includes human contact where possible, because

- **digital methods that include human contact, such as support from a professional, parent or peer, appear to be more effective than methods involving no or minimal contact[12,53,54,65,66]. (B)**

  - The involvement of a health and social care professional, particularly a therapist, in delivering the digital method, together with regular guidance for participants, influences the effectiveness of the method in treating depression and anxiety in adolescents[65,67,68].
  - Preliminary evidence suggests that in-person or online human contact may support engagement with a digital treatment programme; however, the evidence remains insufficient[67].
  - Based on adolescents' experiences, a guided digital method delivered in a group format may be meaningful and support them in managing their problems more effectively[69].



2. The collaborative relationship between the professional and the adolescent

Aim to establish a relationship of trust and provide the adolescent with regular support, because

- **a relationship of trust between the professional and the adolescent as part of the digital method may be an important factor in alleviating depressive symptoms[63,70–72]. (C)**
  - In internet-delivered therapies, therapeutic alliance may be directly associated with improved emotion regulation and reduced depressive symptoms. The strength of therapeutic alliance does not appear to depend on the mode of treatment delivery.[70]
  - Motivational interviewing may promote the adolescent's engagement with a digital treatment programme[54,63,72,73].
  - A lack of external encouragement and human interaction may reduce motivation and engagement with applications[60].
  - A digital method may be used to support or complement treatment, or, for example, during a waiting period, provided that contact with a professional is maintained[71].
  - A therapeutic relationship may also be established through real-time, written personal contact, such as chat[63,72].
- **regular support provided by a professional appears to strengthen the adolescent's engagement with the digital method and facilitates its completion[73,74]. (B)**

Encourage the adolescent to work purposefully on programme assignments and provide feedback as part of the digital method, because

- **adolescents who adhere to homework assignments within digital methods may have better outcomes in the treatment of depression[61]. (C)**
  - Programmes that enable adolescents to monitor their own progress, for example through mood charts, diaries, and goals, support symptom reduction and engagement with the programme[61,74].
  - Exercises within a guided group-based digital method that adolescents complete together online may also feel beneficial[69].
- **adolescents may regard receiving feedback from professionals as a strength of digital methods[75]. (C)**
  - Adolescents value even brief comments from a professional, as these increase their sense of being acknowledged. Conversely, the absence or delayed provision of feedback may cause distress[75].

3. Factors relating to the adolescent

Consider the adolescent individually and in accordance with their developmental stage when planning the introduction and delivery of a digital method, because

- **selecting an age-appropriate method and engaging with the adolescent in a manner appropriate to their developmental stage may support their use of the digital method[65,71]. (C)**

- **the adolescent's individual characteristics, such as a positive attitude towards technology or gender, may be associated with engagement with the digital method[65,66]. (C)**

    - Consider each adolescent individually and pay particular attention to boys' engagement, as girls appear to perceive digital methods as beneficial[66] and engage with them more often than boys[67].
    - Age should be considered, as adolescents may perceive a programme as childish if it does not correspond to their developmental stage[65,71].
    - Adolescents may experience the same programme very differently; identical information may be perceived as appropriately tailored or excessively general, and assignments as helpful or too difficult[75].
    - Stigma experienced by adolescents may hinder their use of mental health services. Digital programmes provide a private and discreet alternative; however, they may also intensify the experience of stigma and reduce engagement.[60]
    - Factors relating to the adolescent's life circumstances, such as a busy schedule or forgetfulness, may reduce programme use[60].

Assess the adolescent's condition in multidisciplinary collaboration and consider the appropriate time to initiate use of the digital method, because

- **more severe depressive symptoms appear to reduce the benefit that the adolescent derives from the method[76]. (B)**

    - Adolescents with milder depressive and anxiety symptoms may benefit from digital methods[67,73,76].

- **more severe depressive symptoms appear to reduce the adolescent's engagement with the programme[71,73,77,78]. (B)**

    - Poor wellbeing and/or reduced functioning may weaken the adolescent's motivation to use the programme[60,75,79].
    - A longer history of mood disorders is associated with better programme completion[67,79].

4. Programme characteristics and usability

Familiarise yourself with the characteristics of the digital programme and consider which factors facilitate or hinder its use by the adolescent, because

- **the visual design and content characteristics of digital programmes, such as reliability and relatability, appear to be important for adolescents[65–67,74]. (B)**

  - High-quality digital methods that provide perceived benefits are more likely to promote user engagement[66].
  - From the perspective of adolescents, the content should be reliable[66,67,71,75], engaging, include interactive features[67] and be visually appealing[71,74]. Programmes should also be culturally and linguistically appropriate[74].
  - Adequate data protection and the opportunity to work privately, including without the presence of parents, should be ensured[67,71].
  - Various games[71] and tools, such as mood charts, diaries[74], homework assignments, problem-solving exercises[58,61] and skills-based exercises[71], support adolescents' progress within the programme. Adolescents themselves consider it beneficial to work through their emotions and thoughts within the programme, for example by using a digital diary[75,80].
  - Because of anonymity, working with a digital method may also be perceived as easier than in-person therapy[71,75].
  - Adolescents value the opportunity to personalise a programme[75] and select information suited to their needs[71]. Personalisation of digital mental health programmes may promote adolescents' engagement with the programme, although some may perceive it negatively, for example due to additional work or steps[66].

- **various functions within digital programmes, such as progress assessment and reminder features, may be associated with the adolescent's engagement with the method[66,74]. (C)**

- **adolescents appear to consider privacy, safety, and confidentiality to be important when digital programmes are used to treat depression or as an adjunct treatment[67,71]. (B)**

  - The technical reliability of digital programmes should have be tested on different devices and operating systems. The processing of stored user data should be clearly described, and the data should be protected. In addition, users should be informed about the processing of their personal data[43].
  - It should also be established whether use of the programme involves risks from the user's perspective and if the application has a recommended age limit[43].

- The development of the programme should comply with the EU General Data Protection Regulation (GDPR)[44] and the EU Code of Conduct on privacy for mHealth apps.
- Adolescents value anonymity, partly because of the stigma associated with mental health issues. In this context, information security measures, such as password protection, the ability to manage privacy settings and professional moderation of the website, influence the acceptability of digital mental health programmes[67].

➢ **the ease of use of a digital programme appears to be associated with the adolescent's engagement with a digital method intended to treat depression or support its treatment[65,66,71,74]. (B)**

- Digital programmes in which the content is divided into manageable sections or themes and step-by-step progression promote programme completion[58,61,74,75].
- Flexible access to a digital method irrespective of time and place promotes adolescents' engagement[60].
- Users prefer digital methods that involve little or no cost[60].

➢ **adolescents appear to wish to decide where and when they use digital methods for treating depression or as an adjunct treatment[66,67,71,75]. (B)**

- The adolescent's own decisions over their time planning should be supported and respected while they work through the programme[67,71,75,79].



Implementation of the guideline

This national NRF Clinical Practice Guideline® synthesises systematically appraised research evidence on digital methods used in the treatment and support of depression in adolescents. The guideline can support the development of evidence-based and consistent practices for treating depression in adolescents across different care settings.

The clinical practice guideline is intended for use in public, private, and third-sector health and social care services as part of the treatment of depression in adolescents as a support tool, and in undergraduate and continuing education in the field. The guideline supports health and social care professionals who treat depression in adolescents as well as assess and use digital methods in its treatment. It may be used as induction material and in development and training events.

Digital solutions are becoming an increasingly integral part of future service provision and may help to improve access to services. Moreover, digital treatment methods are a natural component of care for younger generations. Research evidence on digital methods targeting depressive symptoms in adolescents has increased over recent decades, enabling research evidence to be applied in clinical nursing practice and decision-making.

This clinical practice guideline does not focus on specific programmes; their selection forms part of the organisation's multidisciplinary decision-making. The guideline identifies matters to be considered in decision-making and supports joint assessment by the professional and the adolescent of a programme's suitability and use. Implementation of the guideline requires managers and decision-makers to commit to evidence-based practice. Furthermore, their role in embedding knowledge into practice is pivotal; therefore, it is important that they are familiar with the clinical practice guideline and its key principles.

The full clinical practice guideline is available for download from the website of the Nursing Research Foundation.

Methods

Literature search and selection of information sources

The NRF Clinical Practice Guideline is based on a systematic literature search conducted by a library information specialist on relevant databases in accordance with a search plan developed by the guideline working group.

The selection of research articles is based on inclusion and exclusion criteria specified in advance by the guideline working group. The guideline working group systematically screens the records in Covidence, first by title and abstract and subsequently by full text. Each record is assessed independently by two members of the guideline working group. Any disagreement is resolved through consensus discussion.

From the selected research articles, the guideline working group identifies the findings that are central to the guideline. Thereafter, researchers at the Nursing Research Foundation produce AI-assisted translations of the findings and prepare methodological descriptions of the studies in accordance with a predefined template.

Critical appraisal

The methodological quality of the included research articles is assessed using the JBI critical appraisal criteria adapted to each study design. First, two reviewers conduct an independent quality appraisal, after which the final assessment is reached through a consensus discussion between the reviewers. The clinical practice guideline includes scientific, peer-reviewed systematic reviews and primary studies whose methodological quality is assessed as sufficient: more than 50 percent of the criteria in the relevant JBI critical appraisal checklist must be met, together with all predefined critical criteria.

Preparation of evidence summaries and recommendation statements

For each recommendation statement, an evidence summary is prepared that describes the finding relevant to the recommendation statement, the methodological conduct of the study, the result of the critical appraisal, and the applicability of the research finding to the recommendation. The certainty of the evidence supporting each recommendation statement is determined by the strength and consistency of the evidence provided by the studies included in the evidence summary, acknowledging study quality and other considerations relevant to the certainty of evidence. The evidence summaries are published in Finnish on the website of the Nursing Research Foundation. In addition, the complete handbook for preparing NRF Clinical Practice Guidelines is available in Finnish on the Foundation’s website.

References

1. Shorey S, Ng ED, Wong CHJ. Global prevalence of depression and elevated depressive symptoms among adolescents: A systematic review and meta-analysis. British Journal of Clinical Psychology 2022; 61: 287–305. DOI: 10.1111/bjc.12333.
2. Aalto-Setälä T, Huikko E, Appelqvist-Schmidlechner K, Haravuori H, Marttunen M. Kouluikäisten mielenterveysongelmien tuki ja hoito perustason palveluissa : Opas tutkimiseen, hoitoon ja vaikuttavien menetelmien käyttöön. Terveyden ja hyvinvoinninlaitos. Saatavilla: *https://urn.fi/URN:ISBN:978-952-408-131-3*. 2023.
3. Konac D, Young KS, Lau J, Barker ED. Comorbidity between depression and anxiety in adolescents: Bridge symptoms and relevance of risk and protective factors. Journal of Psychopathology and Behavioral Assessment 2021; 43: 583–596. DOI: 10.1007/s10862-021-09880-5.
4. The National Health Service (NHS). Advice for parents: Depression in children and young people. Last updated 5/2023. Saatavilla: *https://www.nhs.uk/mental-health/children-and-young-adults/*. Viitattu 7.3.2025.
5. World Health Organisation (WHO). Fact sheets: Mental health of adolescents. Saatavilla: *https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health*, 2024. Viitattu 23.2.2025.
6. Vorma H, Rotko T, Larivaara M, Kosloff A. Kansallinen mielenterveysstrategia ja itsemurhien ehkäisyohjelma vuosille 2020–2030. Sosiaali- ja terveysministeriön julkaisuja 2020:6. Saatavil-la: *https://urn.fi/URN:ISBN:978-952-00-4139-7*, 2020. Viitattu 29.3.2025.
7. Kela. Kelan sairausvakuutustilasto 2023. Saatavilla: *http://urn.fi/URN:NBN:fi-fe2024091170581*. 2023.
8. Eläketurvakeskus. Mielenterveyden sairaudet yleisin työkyvyttömyyseläkkeelle siirtymisen syy. Julkaistu 8.4.2020. Saatavilla: *https://www.etk.fi/ajankohtaista/mielenterveyden-sairaudet-yleisin-tyokyvyttomyyselakkeelle-siirtymisen-syy/*, 2020. Viitattu 7.3.2025.
9. Terveyden ja hyvinvoinninlaitos (THL). Sote-palvelujen johtaminen. Kehittyvä palvelujärjestelmä: Digitaaliset palvelut. Päivitetty 30.9.2024. Saatavilla: *https://thl.fi/aiheet/sote-palvelujen-johtaminen*.
10. World Health Organisation (WHO). Health topics: Adolescent health. Saatavilla: *https://www.who.int/health-topics/adolescent-health*, 2025. Viitattu 16.7.2025.
11. Finlex®. Ajantasainen lainsäädäntö: Nuorisolaki 1285/2016. Saatavilla: *https://www.finlex.fi/fi/laki/alkup/2016/20161285*. 2016.
12. Grist R, Croker A, Denne M, Stallard P. Technology delivered interventions for depression and anxiety in children and adolescents: A systematic review and meta-analysis. Clinical Child and Family Psychology Review 2019; 22: 147–171. DOI: 10.1007/s10567-018-0271-8.
13. Reyes-Portillo JA, Mufson L, Greenhill LL, Gould MS, Fisher PW, Tarlow N, Rynn MA. Web-based interventions for youth internalizing problems: A systematic review. Journal of the American Academy of Child and Adolescent Psychiatry 2014; 53: 1254–1270. DOI: 10.1016/j.jaac.2014.09.005.

14. Aschbrenner KA, Naslund JA, Tomlinson EF, Kinney A, Pratt SI, Brunette MF. Adolescents' use of digital technologies and preferences for mobile health coaching in public mental health settings. Frontiers in Public Health 2019; 7: 178. DOI: 10.3389/fpubh.2019.00178.

15. Liverpool S, Mota CP, Sales CMD, Čuš A, Carletto S, Hancheva C, Sousa S, Cerón SC, Moreno-Peral P, Pietrabissa G, Moltrecht B, Ulberg R, Ferreira N, Edbrooke-Childs J. Engaging children and young people in digital mental health interventions: Systematic review of modes of delivery, facilitators, and barriers. Journal of Medical Internet Research 2020; 22: e16317. DOI: 10.2196/16317.

16. Finlex®. Ajantasainen lainsäädäntö: Hallituksen esitys eduskunnalle lasten ja nuorten terapiatakuuta koskevaksi lainsäädännöksi HE 131/2024. Saatavilla: *https://www.finlex.fi/fi/hallituksen-esitykset/2024/131*. 2024.

17. Haveri A, Jalonen H, Keskimäki I, Saari J, Tynkkynen L-K, Pekurinen M, Kortelainen M, Lyytikäinen T, Ristikari T & Sorsa V-P. Hyvinvointialueuudistuksen väliarviointi. Valtioneuvoston julkaisuja 2025:109. Helsinki: Valtioneuvosto. Saatavilla: *https://urn.fi/URN:ISBN:978-952-383-022-6*, 2025. Viitattu 21.4.2026.

18. World Health Organisation (WHO). Global Accelerated Action for the Health of Adolescents (AA-HA!): guidance to support country implementation, second edition. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO. Saatavilla: *https://www.who.int/publications/i/item/9789240081765*.

19. United Nations (UN). The Convention on the Rights of the Child. Adopted 20.11.1989 by General Assembly resolution 44/25. Saatavilla: *https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child*.

20. Sawyer SM, Azzopardi PS, Wickremarathne D, Patton GC. The age of adolescence. The Lancet Child & Adolescent Health 2018; 2: 223–228. DOI: 10.1016/S2352-4642(18)30022-1.

21. World Health Organisation (WHO). Fact sheets: Mental health of adolescents. Saatavilla: *https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health*, 2024. Viitattu 23.2.2025.

22. Steinberg L. Age of Opportunity: Lessons from the New Science of Adolescence. Boston: Houghton Mifflin Harcourt; 2014.

23. Aalto-Setälä TH, Eeva; Appelqvist-Schmidlechner, Kaija; Haravuori, Henna; Marttunen, Mauri. Kouluikäisten mielenterveysongelmien tuki ja hoito perustason palveluissa : Opas tutkimiseen, hoitoon ja vaikuttavien menetelmien käyttöön. Terveyden ja hyvinvoinninlaitos. Saatavilla: *https://urn.fi/URN:ISBN:978-952-408-131-3*. 2023.

24. Terveyden ja hyvinvoinninlaitos (THL). Sotkanet. Erikoissairaanhoidon avohoitokäynnit, nuorisopsykiatria / 1 000 13 - 17-vuotiasta (ind. 2484). Päivitetty 6.5.2025. Saatavilla: *https://sotkanet.fi/sotkanet/fi/metadata/indicators/2484*. Viitattu 13.10.2025.

25. Depressio. Käypä hoito -suositus. Suomalaisen Lääkäriseuran Duodecimin ja Suomen Psykiatriyhdistys ry:n asettama työryhmä. Helsinki: Suomalainen Lääkäriseura Duodecim, 2025. Saatavilla: *www.kaypahoito.fi*.

26. Karlsson LM, M; Kumpulainen, K. Lasten ja nuorten masennus. Teoksessa: Kumpulainen K, Aronen E, Ebeling H, Laukkanen E, Marttunen M, Puura K, Sourander A (toim.) Lastenpsykiatria ja nuorisopsykiatria, 4. painos. Kustannus Oy Duodecim: Helsinki. 2025.

27. Terveyden- ja hyvinvoinninlaitos (THL). Psykiatrian luokituskäsikirja. Tautiluokitus ICD-10:n psykiatriaan liittyvät diagnoosit. Luokitukset, termistöt ja tilasto-ohjeet 1/2012. Terveyden- ja hyvinvoinninlaitos: Tampere, 2012.

28. Doraiswamy PM, London E, Varnum P, Harvey B, Saxena S, Tottman S, Campbell SP, Ibáñez AF, Manji H, Al Olama M, Chou IH, Herrman H, Jeong SJ, Le T, Montojo C, Reve B, Rommelfanger KS, Stix C, Thakor N, Chow KH, Welchman AE, Candeias V. Empowering 8 billion minds: Enabling better mental health for all via the ethical adoption of technologies. NAM Perspectives 2019; 2019. DOI: *https://doi.org/10.31478/201910b*.

29. Kabacińska K, McLeod K, MacKenzie A, Vu K, Cianfrone M, Tugwell A, Robillard JM. What criteria are young people using to select mobile mental health applications? A nominal group study. Digital Health 2022; 8. DOI: 10.1177/20552076221102775.

30. Montagni I, Tzourio C, Cousin T, Sagara JA, Bada-Alonzi J, Horgan A. Mental health-related digital use by university students: A systematic review. Telemedicine Journal and E-health 2020; 26: 131–146. DOI: 10.1089/tmj.2018.0316.

31. Torous J, Bucci S, Bell IH, Kessing LV, Faurholt-Jepsen M, Whelan P, Carvalho AF, Keshavan M, Linardon J, Firth J. The growing field of digital psychiatry: current evidence and the future of apps, social media, chatbots, and virtual reality. World Psychiatry 2021; 20: 318–335.

32. Wies B, Landers C, Ienca M. Digital mental health for young people: A scoping review of ethical promises and challenges. Frontiers in Digital Health 2021; 3: 697072. DOI: 10.3389/fdgth.2021.697072.

33. De Witte NAJ, Joris S, Van Assche E, Van Daele T. Technological and digital interventions for mental health and wellbeing: An overview of systematic reviews. Frontiers in Digital Health 2021; 3: 754337. DOI: 10.3389/fdgth.2021.754337.

34. Halldorsson B, Hill C, Waite P, Partridge K, Freeman D, Creswell C. Annual Research Review: Immersive virtual reality and digital applied gaming interventions for the treatment of mental health problems in children and young people: the need for rigorous treatment development and clinical evaluation. Journal of Child Psychology and Psychiatry 2021; 62: 584–605. DOI: 10.1111/jcpp.13400.

35. Hollis C, Falconer CJ, Martin JL, Whittington C, Stockton S, Glazebrook C, Davies EB. Annual Research Review: Digital health interventions for children and young people with mental health problems – A systematic and meta-review. Journal of Child Psychology and Psychiatry 2017; 58: 474–503. DOI: 10.1111/jcpp.12663.

36. von Huben A, Howell M, Howard K, Carrello J, Norris S. Health technology assessment for digital technologies that manage chronic disease: a systematic review. International Journal of Technology Assessment in Health Care 2021; 37: e66. DOI: 10.1017/S0266462321000362.

37. Mohr DC, Schueller SM, Montague E, Burns MN, Rashidi P. The Behavioral Intervention Technology Model: An integrated conceptual and technological framework for eHealth and mHealth interventions. Journal of medical Internet research 2014; 16: e146. DOI: 10.2196/jmir.3077.

38. Välimäki M, Anttila K, Anttila M, Lahti M. Web-based interventions supporting adolescents and young people with depressive symptoms: Systematic review and meta-analysis. JMIR mHealth and uHealth 2017; 5: e180. DOI: 10.2196/mhealth.8624.

39. Euroopan parlamentti ja neuvosto. Asetus (EU) 2017/745 lääkinnällisistä laitteista (MDR). Artikla 2. Annettu 5.4.2017. Saatavilla: *https://eur-lex.europa.eu/eli/reg/2017/745/oj*.

40. Medical Device Coordination Group (MCDG). MCDG 2021-24: Guidance on classification of medical devices, 2021. Saatavilla: *https://health.ec.europa.eu/system/files/2021-10/mdcg_2021-24_en_0.pdf*.

41. Fimea. Ohjelmisto lääkinnällisenä laitteena. Ohjelmistot. Saatavilla: fimea.fi/laakinnalliset_laitteet/mita-ovat-laakinnalliset-laitteet-/erikoislaiteryhmat/ohjelmistot.

42. *https://teknologiateollisuus.fi/healthtech/terveysteknologia-osana-terveysalaa/saadokset/laakinnallisten-laitteiden-saantely/* HFLIsMS.

43. Hamari L, Parisod H, Pakarinen A, Skogberg M, Aromaa M, Leppänen V, Salanterä S. Digitaalisten terveys- ja hyvinvointisovellusten kehittäminen, arviointi ja raportointi: Qvalidi 2019 -tarkistuslistan kehittäminen ja sisältö. Hoitotiede 2020; 32: 52-66.

44. Euroopan parlamentti ja neuvosto. Regulation (EU) 2016/679 General Data Protection Regulation (GDPR). Annettu 27.4.2016. Saatavilla: *http://data.europa.eu/eli/reg/2016/679/2016-05-04*.

45. Buttazzoni A, Brar K, Minaker L. Smartphone-based interventions and internalizing disorders in youth: Systematic review and meta-analysis. Journal of Medical Internet Research 2021; 23: e16490.

46. Dülsen P, Baumeister H. Internet- and mobile-based anxiety and depression interventions for children and adolescents: efficacy and negative effects - a systematic review and meta-analysis. European Child & Adolescent Psychiatry 2025; 34: 101-121. DOI: 10.1007/s00787-024-02404-y.

47. Eilert N, Wogan R, Leen A, Richards D. Internet-delivered interventions for depression and anxiety symptoms in children and young people: Systematic review and meta-analysis. JMIR Pediatrics and Parenting 2022; 5: e33551. DOI: 10.2196/33551.

48. López-Soler C, Vicente-Escudero JL, López-López JA, Alcántara M, Martínez A, Castro M, Fernández V, Sánchez-Meca J. Effectiveness of internet-delivered psychological treatments for children and adolescents with anxiety and/or depressive disorders: Systematic review and network meta-analysis. International Journal of Clinical Health Psychology 2024; 24: 100487.

49. Townsend C, Humpston C, Rogers J, Goodyear V, Lavis A, Michail M. The effectiveness of gaming interventions for depression and anxiety in young people: systematic review and meta-analysis. BJPsych Open 2022; 8: e25.

50. Ma Q, Shi Y, Zhao W, Zhang H, Tan D, Ji C, Liu L. Effectiveness of internet-based self-help interventions for depression in adolescents and young adults: a systematic review and meta-analysis. BMC psychiatry 2024; 24: 604–613. DOI: 10.1186/s12888-024-06046-x.

51. Noh D, Park H, Shim M-S. Website and mobile application-based interventions for adolescents and young adults with depression: A systematic review and meta-analysis. Journal of Korean Academy of Psychiatric and Mental Health Nursing 2023; 32: 78–91. DOI: 10.12934/jkpmhn.2023.32.1.78.

52. Noh D, Kim H. Effectiveness of online interventions for the universal and selective prevention of mental health problems among adolescents: A systematic review and meta-analysis. Prevention Science 2023; 24: 353–364. DOI: 10.1007/s11121-022-01443-8.

53. Wu Y, Fenfen E, Wang Y, Xu M, Liu S, Zhou L, Song G, Shang X, Yang C, Yang K, Li X. Efficacy of internet-based cognitive-behavioral therapy for depression in adolescents: A systematic review and meta-analysis. Internet Interventions 2023; 34: 100673.

54. Giovanelli A, Sanchez Karver T, Roundfield KD, Woodruff S, Wierzba C, Wolny J, Kaufman MR. The Appa Health App for youth mental health: Development and usability study. JMIR Formative Research 2023; 7: e49998. DOI: 10.2196/49998.

55. Christ C, Schouten MJE, Blankers M, van Schaik DJF, Beekman ATF, Wisman MA, Stikkelbroek YAJ, Dekker JJM. Internet and computer-based cognitive behavioral therapy for anxiety and depression in adolescents and young adults: Systematic review and meta-analysis. Journal of Medical Internet Research 2020; 22: e17831. DOI: 10.2196/17831.

56. Espinosa V, Valiente RM, García-Escalera J, Chorot P, Arnáez S, Schmitt JC, Sandín B. Efficacy of a transdiagnostic internet-based program for adolescents with emotional disorders: A randomized controlled trial. Behaviour Research and Therapy 2024; 179: 104560.

57. Leech T, Dorstyn D, Taylor A, Li W. Mental health apps for adolescents and young adults: A systematic review of randomised controlled trials. Children and Youth Services Review 2021; 127: 106073.

58. Wright B, Tindall L, Hargate R, Allgar V, Trépel D, Ali S. Computerised cognitive–behavioural therapy for depression in adolescents: 12-month outcomes of a UK randomised controlled trial pilot study. BJPsych Open 2020; 6: e5.

59. Miller I, Peake E, Strauss G, Vierra E, Koepsell X, Shalchi B, Padmanabhan A, Lake J. Self-guided digital intervention for depression in adolescents: Feasibility and preliminary efficacy study. JMIR Formative Research 2023; 7: e43260. DOI: 10.2196/43260.

60. Wanniarachchi VU, Greenhalgh C, Warren J. Adolescents' and youths' perceived barriers and facilitators to engaging with digital mental health interventions for depression and anxiety: A scoping review. Internet interventions 2025; 42: 100884. DOI: 10.1016/j.invent.2025.100884.

61. Do R, Lee S, Kim J-S, Cho M, Shin H, Jang M, Shin M-S. Effectiveness and dissemination of computer-based cognitive behavioral therapy for depressed adolescents: Effective and accessible to whom? Journal of Affective Disorders 2021; 282: 885-893. DOI: 10.1016/j.jad.2020.12.177.

62. Wickersham A, Barack T, Cross L, Downs J. Computerized cognitive behavioral therapy for treatment of depression and anxiety in adolescents: Systematic review and meta-analysis. Journal of Medical Internet Research 2022; 24: e29842.

63. Topooco N, Byléhn S, Dahlström Nysäter E, Holmlund J, Lindegaard J, Johansson S, Åberg L, Bergman Nordgren L, Zetterqvist M, Andersson G. Evaluating the Efficacy of Internet-Delivered Cognitive Behavioral Therapy Blended With Synchronous Chat Sessions to Treat Adolescent Depression: Randomized Controlled Trial. Journal of Medical Internet Research 2019; 21: e13393. DOI: 10.2196/13393.

64. Howes ST, Gorey KM, Charron CM. Relative effectiveness of online cognitive behavioural therapy with anxious or depressed young people: Rapid review and meta-analysis. Australian Social Work 2023; 76: 547–561.

65. Garrido S, Millington C, Cheers D, Boydell K, Schubert E, Meade T, Nguyen QV. What works and what doesn't work? A systematic review of digital mental health interventions for depression and anxiety in young people. Frontiers in Psychiatry 2019; 10: 759.

66. Zhu S, Wang Y, Hu Y. Facilitators and barriers to digital mental health interventions for depression, anxiety, and stress in adolescents and young adults: Scoping review. Journal of medical Internet research 2025; 27: e62870. DOI: 10.2196/62870.

67. Lehtimäki S, Martic J, Wahl B, Foster KT, Schwalbe N. Evidence on digital mental health interventions for adolescents and young people: Systematic overview. JMIR Mental Health 2021; 8: e25847.

68. Wozney L, McGrath PJ, Gehring ND, Bennett K, Huguet A, Hartling L, Dyson MP, Soleimani A, Newton AS. eMental healthcare technologies for anxiety and depression in childhood and adolescence: Systematic review of studies reporting implementation outcomes. JMIR Mental Health 2018; 5: e48.

69. Vestin M, Jokinen J, Blomqvist I, Dennhag I. Participants' evaluation of an internet-based group compassion-focused therapy program for young people in Sweden. Frontiers in Psychiatry 2025; 16: 1548320. DOI: 10.3389/fpsyg.2025.1548320.

70. Lindqvist K, Mechler J, Falkenström F, Carlbring P, Andersson G, Philips B. Therapeutic alliance is calming and curing - The interplay between alliance and emotion regulation as predictors of outcome in internet-based treatments for adolescent depression. Journal of Consulting and Clinical Psychology 2023; 91: 426-437. DOI: 10.1037/ccp0000815.

71. Tindall L, Toner P, Mikocka-Walus A, Wright B. Perceptions of and opinions on a computerized behavioral activation program for the treatment of depression in young people: Thematic analysis. Journal of Medical Internet Research 2021; 23: e19743. DOI: 10.2196/19743.

72. Topooco N, Berg M, Johansson S, Liljethörn L, Radvogin E, Vlaescu G, Nordgren LB, Zetterqvist M, Andersson G. Chat- and internet-based cognitive–behavioural therapy in treatment of adolescent depression: randomised controlled trial. BJPsych Open 2018; 4: 199–207. DOI: 10.1192/bjo.2018.18.

73. Rogers J, Gladstone T, Van Voorhees B, Bunge EL. The role of human support on engagement in an online depression prevention program for youth. Social Sciences 2021; 10: 285. DOI: 10.3390/socsci10080285.

74. Wozney L, Huguet A, Bennett K, Radomski AD, Hartling L, Dyson M, McGrath PJ, Newton AS. How do eHealth programs for adolescents with depression work? A realist review of persuasive system design components in internet-based psychological therapies. Journal of Medical Internet Research 2017; 19: e266. DOI: 10.2196/jmir.7573.

75. Anttila K, Anttila M, Välimäki M. A web-based adolescent depression support system: feedback and implications for the future. Informatics for Health & Social Care 2020; 45: 111-129.

76. Bossenbroek R, Poppelaars M, Creemers DHM, Stikkelbroek Y, Lichtwarck-Aschoff A. Trajectories of symptom change in school-based prevention programs for adolescent girls with subclinical depression. Journal of Youth and Adolescence 2022; 51: 659–672.

77. Neil AL, Batterham P, Christensen H, Bennett K, Griffiths KM. Predictors of adherence by adolescents to a cognitive behavior therapy website in school and community-based settings. Journal of medical Internet research 2009; 11: e6. DOI: 10.2196/jmir.1050.

78. Clarke AM, Kuosmanen T, Barry MM. A systematic review of online youth mental health promotion and prevention interventions. Journal of Youth and Adolescence 2015; 44: 90–113. DOI: 10.1007/s10964-014-0165-0.

79. Metsäranta K, Kurki M, Valimaki M, Anttila M. How do adolescents use electronic diaries? A mixed-methods study among adolescents with depressive symptoms. Journal of Medical Internet Research 2019; 21: e11711. DOI: 10.2196/11711.

80. Anttila KI, Anttila MJ, Kurki MH, Välimäki MA. Social relationships among adolescents as described in an electronic diary: A mixed methods study. Patient Prefererence and Adherence 2017; 27: 343–352. DOI: doi: 10.2147/PPA.S126327.

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