

14. From research to reality: digital parent training for managing disruptive behaviour in children

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INTRODUCTION

Behavioural problems in early childhood represent a significant public health challenge with lasting impacts on individuals, families, and society. These problems are often unrecognised in primary healthcare settings, highlighting the critical need for evidence-based screening tools to support early identification and psychosocial interventions. Early parent training interventions aimed at strengthening parenting skills and preventing the escalation of children's disruptive behaviour can serve as cost-effective strategies to reduce the burden on mental health services and promote psychosocial well-being.

This chapter presents the development, research, and implementation of Voimaperheet – a model combining early detection of children's behavioural problems and an evidence-based, digitally assisted parent training programme designed to fit the primary healthcare system in Finland.

The chapter examines the rationale for early parent training interventions and the challenges in identifying and supporting children with behavioural problems. It presents the structure, content, and effectiveness of the Voimaperheet parent training programme, based on evidence from randomised controlled trials and implementation research. In addition, the chapter presents the benefits of a digitally delivered intervention to provide children's mental health services. Finally, it discusses opportunities for integrating such interventions into routine services. Through this case study, we aim to demonstrate how scientifically validated interventions can be translated into sustainable public health strategies, and how targeted, early interventions may serve as part of a broader social investment-intervention framework.

BACKGROUND

Untreated mental health problems in children and young people and the related psychosocial problems in families are a challenge to both public health and society as a whole. In Finland, the “wellbeing services counties” are in charge of social and healthcare services. Mother and child health clinics offer preventative healthcare services for children and families. Originally, they were founded to prevent physical public health issues. However, based on the Health Care Act (338/2011), they need to respond to their clients’ increasing psychosocial needs. This includes prevention of mental health problems and early detection of mental health disorders.

Anxiety and depression during pregnancy; behaviour, concentration and hyperactivity challenges in children below school age; and anxiety in school-age children are some of the issues that the primary healthcare services must respond to. This allows for the prevention of health problems and related human suffering and costs in the future.

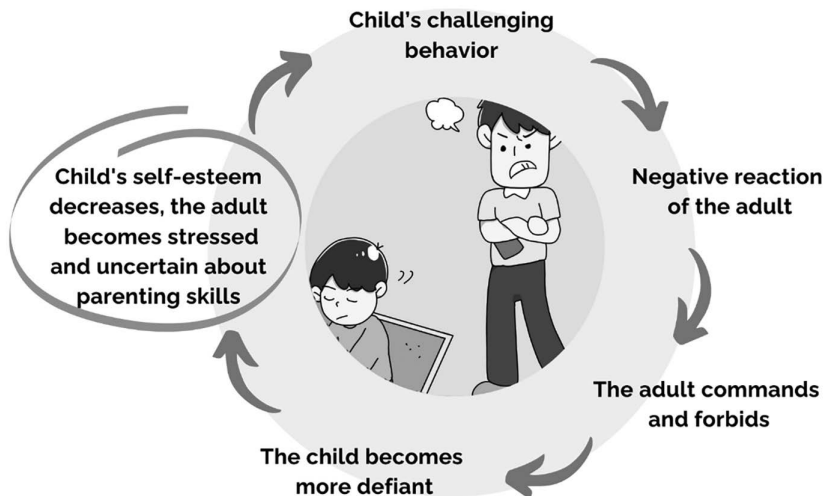
Many genetic and environmental factors impact a child’s behaviour. The environment has a great impact on the positive development of a child. In the life of a child, various protective factors, such as sufficient care and attention, age-appropriate challenges and demands, good general health, and an environment that supports the child’s development in other ways, are vital. The life of a child can also include behavioural risk factors, such as genetic developmental issues, an unstable environment, child neglect, and issues faced by the parents, such as mental health or substance abuse problems or challenges of parenting. The child’s behaviour is also impacted by various situational factors. They can be related to environmental stimuli, the child’s energy levels, nutrition, etc. It is important to understand that the behaviour of a child cannot be explained by one single factor.

When trying to understand behavioural problems in a child, it is important to be aware of children’s normal psychosocial development. Issues should not only be treated as behavioural problems or disorders when any variations from normative development are based on expert assessment. These assessments may include various symptom questionnaires, a survey of the problems the child experiences, and more detailed interviews with and assessments of the child and family. Parents may find the child’s behaviour problematic even if no behavioural problems or disorders have been clinically diagnosed. This may lead to the interaction within the family becoming negative, which in turn may increase the strain on daily life and create a tense atmosphere. Such negative interaction patterns can reinforce problematic behaviours through negative cycles, where both the child and the parents escalate their responses, further increasing family stress (Patterson, 1982). The following diagram illustrates

how parent training can change the interaction from negative towards positive (Figures 14.1 and 14.2).

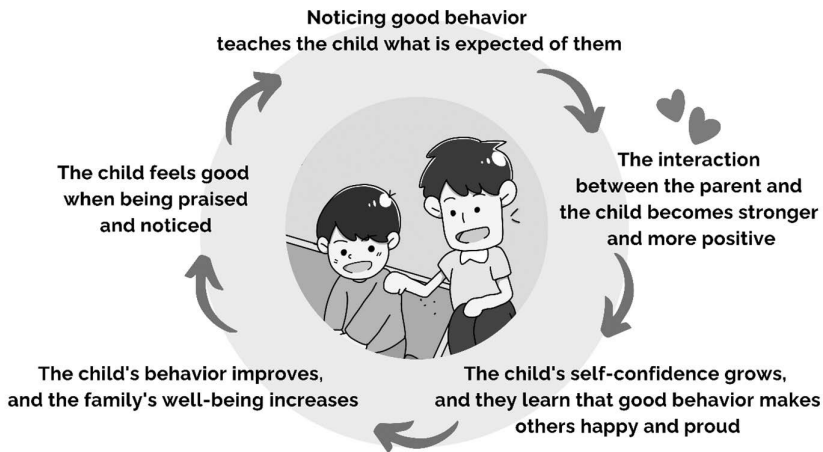
According to the latest International Classification of Diseases (ICD-10), behaviour problems in children and young people are classified into oppositional defiant disorders and conduct disorders. Repeated or continuous irritability, aggression, defiance, and asocial behaviour which differs from the behaviour of other children of the same age is typical of both disorders. Oppositional defiant disorders and conduct disorders also cause issues in various everyday settings, e.g., at home, in early childhood education, or at school. Oppositional defiant disorder in children below school age typically includes irritability, defiance, disobedience, and objections. As the child grows older, conduct disorders typically include aggression, increased asocial behaviour such as lying and stealing, and sometimes even robberies and hurting others (Working Group set up by the Finnish Medical Society Duodecim et al., 2018).

Many longitudinal studies show that different evolutions can be identified in conduct disorders (Bevilacqua et al., 2018). These are: behavioural symptoms limited to childhood, long-term behavioural symptoms which begin in early childhood, and behavioural symptoms which begin in youth. In general, behavioural issues tend to be more common in boys than in girls. Studies



Source: Authors' own, based on G.R. Patterson's (1982) coercive family process theory.

Figure 14.1 Example of a negative parent-child interaction cycle



Source: Authors' own, modified from G.R. Patterson's (1982) coercive family process theory.

Figure 14.2 Example of a positive parent-child interaction cycle

show that approximately 34% of boys and 10% of girls suffer from behavioural symptoms which are limited to childhood. Meanwhile, approximately 8% of boys and 5% of girls suffer from long-term behavioural symptoms that begin in early childhood (Odgers et al., 2007). Various studies show that children whose long-term behavioural symptoms begin in early childhood face the greatest risk of later psychiatric morbidity, substance abuse, crime, and marginalisation (Odgers et al., 2007; Sourander et al., 2007; Gutman et al., 2018).

It is estimated that approximately 20% of children in the age group that is seen by child health clinics have psychological symptoms, and approximately 10–30% of families require special support (Sourander, 2001; Gyllenberg et al., 2014). Longitudinal studies from childhood into adulthood have shown that behavioural problems in childhood have a strong link to many health problems, mental health disorders, suicide rates, crime, and marginalisation (Sourander et al., 2007).

EFFECTIVE EARLY TREATMENT OF BEHAVIOUR PROBLEMS

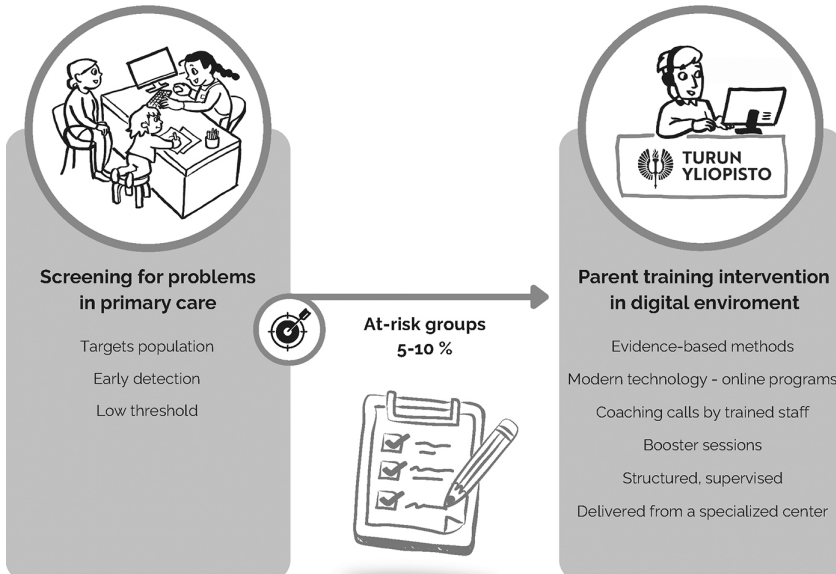
Disruptive behaviour problems in childhood can be effectively addressed by early parent training interventions which teach parents how to identify,

manage, and prevent these problems (Piquero et al., 2016). Parents are provided with skill training and modelling, and they are taught how to reinforce good behaviour. These strategies and skills also strengthen the child's emotional, cognitive, and social development (Kazdin, 1997). Strong evidence based on randomised controlled trials (RCTs) has shown that parent training is effective and that the gold standard treatment is improving parenting skills and reducing disruptive childhood behaviour (Eyberg et al., 2008; Kaminski & Claussen, 2017). However, only a minority of parents who would benefit from parent training actually receive it (Kazdin & Blasé, 2011). The most significant barriers to participation include financial costs, practical factors such as where they live and transport to appointments, waiting times, and the social and personal stigma associated with mental health problems in children (Reardon et al., 2017). Digitally assisted interventions may help to increase the reach of these programmes, reduce stigma, and overcome the practical barriers to participation.

DEVELOPING THE VOIMAPERHEET MODEL

The Research Centre for Child Psychiatry at the University of Turku was founded in 2009. Initially, the centre focused on epidemiological research into mental health problems, but the need for intervention studies was also identified. The researchers at the centre knew that basic behaviour problems in children were often not detected or treated, and families only received treatment when the problems had become more severe, continued over a long period, and put stress on the child, the family, and the staff at daycare or school. The treatment that was offered was random, and it was not based on effective, evidence-based methods. Effective, evidence-based parent training was rarely provided. The families' situation was worsened by the fact that healthcare services were not offered in all parts of the country, there were often long distances to travel to access healthcare, and by other barriers to accessing treatment. The Research Centre began a collaboration with a Canadian research group that had created and studied a parent training intervention which was carried out using remote methods, namely workbooks and phone calls (McGrath et al., 2011; Lingley-Pottie et al., 2013). As a result of the development work carried out by our research group and multilevel adaptation of the Canadian programme, we created a parent training programme which was placed on a digital platform.

Working with child health clinics, we developed a model based on population-based screening. At this time (in 2010), it was decided in the Government Decree on maternity and child health clinic services that the extensive health examination would be carried out on four-year-olds rather than five-year-olds, and the focus was shifted to identifying psychosocial problems in families,



Source: Authors' own.

Figure 14.3 The Voimaperheet model: from screening to intervention

which created an opportunity for our research group to offer child health clinics as a simple method for identifying high-risk groups. Many child health clinics lacked a validated method for identifying the family's psychosocial well-being and the child's strengths and difficulties, behaviour, emotional life, hyperactivity, and prosocial relationships. The Voimaperheet model is the first evidence-based method implemented in Finland that combines early detection of behaviour issues carried out at child health clinics with a parent training intervention carried out via the internet and by phone (Figure 14.3).

THE VOIMAPERHEET CHILD HEALTH CLINIC QUESTIONNAIRE

The purpose of the Voimaperheet child health clinic questionnaire is to give child health clinic nurses a simple method which makes it easier to survey a family's psychosocial problems. The method helps nurses to identify families whose children have behaviour issues which put pressure on the family's daily life and who could benefit from parent training. The questionnaire collects background information on the parent and child and also includes a section on

the child's strengths and difficulties (Strengths and Difficulties Questionnaire SDQ) as well as an irritability questionnaire (Affective Reactivity Index – Parent Report ARI-P).

THE DIGITALLY SUPPORTED VOIMAPERHEET PARENT TRAINING INTERVENTION

The Voimaperheet parent training intervention is based on consultation methods which have been in use for a long time, and which have been deemed effective. The programme is carried out on a website which has been designed for this purpose. The Voimaperheet intervention differs from other mental health treatment programmes offered in a digital environment in that it also contains personal coaching over the phone, which is a key part of the intervention. Coaching over the phone with a professional family coach allows goal-oriented and personalised work to solve the problems the family is facing and reach the goals they have set. Under the guidance of a family coach, the parent practices skills that strengthen their parenting, such as positive interaction and rewarding, sharing attention, pre-empting transitions, planning everyday situations, collaborating with daycare staff, and managed restraint of the child (Figure 14.4). (Sourander et al., 2016; Sourander et al., 2018).

The family coach contacts the families every week at a time that suits the families best. During the intensive coaching phase, the family's functioning often improves considerably. In order to maintain these skills, we offer a booster call after the basic phase, as well as revision via digital tools. To ensure programme fidelity, the coaches are supervised and regularly monitored to make sure they adhere to the protocol. Alongside supervision and staff performance evaluations, this provides systematic quality assurance. The Voimaperheet parent training intervention is produced centrally at the Research Centre for Child Psychiatry, and it does not rely on any healthcare resources. This also allows us to guarantee the treatment programme's high quality and method fidelity (Sourander et al., 2016; Sourander et al., 2018).

THE VOIMAPERHEET STUDY

Our groundbreaking study was the first RCT (2010–2014) to use a digitally assisted parent training programme after young children with disruptive behaviour problems had been identified through population-based screening. A total of 464 parents of 4-year-old children were randomised into the Voimaperheet intervention group ($n=232$) or an education control (EC) group ($n=232$). The 11-week digitally assisted parent training intervention is composed of parent training materials delivered via an interactive platform and weekly coaching over the phone. The RCT showed that the parent training



Source: Authors' own.

Figure 14.4 Central themes in the Voimaperheet parent training intervention

intervention group demonstrated significant improvements between the baseline and the 24-month follow-up in the child's disruptive behaviour and other psychopathology measures, and in parenting skills when they were compared with the EC group (Sourander et al., 2016; Sourander et al., 2018).

This study was unique in that it included a large number of preschool children with high levels of disruptive behaviour problems who were screened from the general population when they attended their annual medical check-ups at 4 years of age. The findings provided valuable guidance for planning effective psychosocial services at an early stage: i.e., population-based interventions for preschool children who are at a high risk of facing later adversities. Another important finding of our study was that the intervention group made significantly less use of child mental health services than the EC group during the follow-up period. The study revealed the effectiveness and feasibility of a digitally assisted parent training programme offered to parents of preschool children with disruptive behavioural problems screened from the general population. The findings emphasised that identifying children at risk in the community at an early stage enabled us to provide an effective parent

training programme for a large number of families, including many who would not have participated in clinic-based services.

THE IMPLEMENTATION STUDY OF THE VOIMAPERHEET MODEL

After the RCT study, we implemented the Voimaperheet intervention in primary healthcare settings to see how it would work in the real world. In our implementation study, we compared the treatment characteristics and effectiveness of the Voimaperheet parent training intervention between the families who received the intervention when it was implemented as normal practice in child health clinics and the families who received the same intervention during the randomised controlled trial. The implementation group comprised 600 families who were recruited in the Voimaperheet intervention between January 2015 and May 2017 in a real-world implementation. The RCT intervention group comprised 232 families who were recruited between October 2011 and November 2013. There was no difference in the changes in the children's psychiatric problems or the parenting skills when the implementation and RCT groups were compared. The children's psychiatric problems improved, including externalising and internalising problems and callousness. Parents reported that their parenting skills had improved, and they demonstrated less distress in dealing with their children at the 6-month follow-up. The web-based and telephone-assisted Voimaperheet parent training intervention was effectively implemented in real-world settings (Sourander et al., 2022a).

We also studied the programme's feasibility in the treatment of behaviour problems in children aged 3–8 in a social care context at Special Family Counselling Centres during the COVID-19 pandemic. The centres worked as part of a network with other organisations, such as schools, social services, and child protection, and were administratively part of social services. The study showed that the parent training programme was effective when it was used in a specialist clinical setting during the pandemic. The programme led to significant improvements in children's externalising symptoms at 6 and 12 months after baseline. It improved most of the psychopathology symptom domains we measured, including parent-reported externalising, internalising, hyperactivity and peer problems, irritability, and prosocial behaviour. The participants reported significant improvements in parenting skills as well as child psychopathology and functioning. Satisfaction was high, and dropout rates were low (Sourander et al., 2022b; Sourander et al., 2024). Based on these findings, the Voimaperheet intervention seems promising for broader scaling in the context of social services.

To summarise, our implementation studies are valuable, as research into the implementation of digital mental health interventions in routine care is

scarce. There is also a lack of effectiveness studies when digital parent training programmes are implemented in real-world practice. The great majority of adult psychiatric disorders begin in childhood or adolescence (Sourander et al., 2009). Therefore, research into the implementation of effective, evidence-based treatments in real life plays a key role in child mental health service research (Sourander et al., 2008). The implementation of the Voimaperheet is in line with the National Mental Health Strategy and Programme for Suicide Prevention 2020–2030, which emphasised sufficient available resources for primary health and social services to provide mental health support for children. The programme also proposes strengthening the support for parenting and age-appropriate support for children in their local environments, such as child health clinics, and other social and healthcare services (Ministry of Social Affairs and Health, 2020).

At the national level, a new legislative reform, the therapy guarantee for children and young people, specifically addresses the implementation of evidence-based psychosocial interventions for children in primary healthcare and social services (Ministry of Social Affairs and Health, 2025). This guarantee is closely related to the treatment of children's behavioural problems and the implementation of the Voimaperheet programme. This would be a cost-effective investment which could also prevent serious mental health problems and marginalisation. The strategy of using population-based screening of children at an early age to offer parent training using digital technology and telephone coaching could be a promising national public health strategy for providing early intervention through primary healthcare for a variety of mental health problems in children.

FUTURE INTERVENTION RESEARCH AND DEVELOPMENT

In future, it is essential to investigate what works for different families and who will benefit most from interventions. This knowledge will help prioritise individuals for certain interventions and allow for the referral of others to different types of services and for the creation of personalised interventions (Shriver & Allen, 2008). Parent training programmes can be delivered in both guided and unguided formats. Guided interventions are proven to be more effective and tend to have higher user satisfaction and engagement rates due to the added support and personalised feedback. Unguided interventions, on the other hand, can be a good option for those who prefer self-paced learning or have milder issues (Kaminski et al., 2008). There is also a need for all families to have access to equal and easily available services in their own language. Behavioural problems in childhood are common, both among the native population and among immigrant preschool children. Getting help is challenging for

immigrant families, and supporting parenting in these cases requires cultural sensitivity. Finnish research has not studied parental guidance for immigrant families and the long-term aim is to develop low-threshold, culturally sensitive digital services for the primary healthcare system that support the well-being and psychosocial functioning of families with children under school age.

Regarding personalisation, the benefits of personalisation and the appropriate dosage of the intervention required to achieve effectiveness are not known (Nye, Delgado, & Barkham, 2023). The implementation gap refers to the difference between the current knowledge of what works and how it works, and the application of this knowledge in real-world practice. We also need to know how the intervention should be modified to improve its efficacy, namely by taking into account the individual characteristics of the children and their parents. It is important to look at childhood psychopathology, such as comorbidity profiles, functioning levels, and severity. We must also look at how parents deal with problems, such as how harsh, negative, or abusive they are towards the child. It is also important to study the content of the interventions, such as the structure of the programme and the coaching and guidance provided. Personalised digital tools can provide multiple benefits that help overcome well-known problems in digital interventions, such as increasing the effectiveness of interventions and reducing costs and drop-out rates (Kaminski et al., 2008).

CONCLUSIONS: FROM EFFECTIVE INTERVENTIONS TO SYSTEM-LEVEL IMPACT

The Voimaperheet model offers a rare example of a well-researched digitally assisted early intervention for addressing disruptive behaviour in young children. The model combines population-based screening at child health clinics with parent training delivered through digital platforms and personal weekly phone coaching—an approach that has proven effective in both clinical trials and real-world settings. Moreover, implementation studies show sustained impact across different mental health service systems, including primary care and social services, even under exceptional conditions such as the COVID-19 pandemic.

Despite this strong evidence, the integration of the Voimaperheet model into the national service system has faced typical challenges: fragmented implementation, regional inequality, and lack of system-level guidance. These are not merely logistical problems but reflect deeper structural weaknesses in how psychosocial interventions are selected, resourced, and sustained within the Finnish welfare state.

By providing early evidence-based support to families, the Voimaperheet parent training programme can be seen as an effective intervention that prevents more serious problems.

In the future, psychosocial interventions need clear plans for their national implementation, and policies should consider these interventions not only as ways to treat problems but as part of a strong prevention system—one that helps maintain the sustainability of the welfare state in light of the population's psychosocial well-being and financial pressures. In this sense, the Voimaperheet model exemplifies how the investment-intervention framework proposed in this book can guide both research and policy towards a more balanced and resilient welfare architecture.

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