



ORIGINAL ARTICLE

Acceptability, engagement and exploratory outcomes and costs of a co-designed intervention to support children of parents with a mental illness: Mixed-methods evaluation and descriptive analysis

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Abstract

Children whose parents have a mental illness are much more likely to experience mental health problems and other adverse long-term impacts. Child-centred psychosocial interventions can be effective, but not much is known about how to design and implement them in different settings. A pre-post, mixed methods, single-arm evaluation of a co-designed social support intervention with parents and children (4–18 years) measured parents' mental health (PHQ-9), perceived social support (ENRICH), parental self-efficacy (PSAM) and children's mental health (SDQ), quality of life (KIDSCREEN-27), and child service use (CAMHSRI-EU) at baseline and 6 months. Qualitative data were gathered at 6 months to explore parents' and children's experience with the intervention. Twenty-nine parents and 21 children completed baseline and follow-up questionnaires; 22 parents and 17 children participated in interviews. Parents' depression (MD -1.36, SD 8.08), perceived social support (MD 1, SD 5.91), and children's mental health potentially improved, and children's service use and costs potentially reduced (€224.6 vs. €122.2, MD 112.4). Parental self-efficacy was potentially reduced (MD -0.11, SD 3.33). The sample was too small to perform statistical analysis. Favourable themes emerged describing the high satisfaction with the intervention, parents' improved understanding of the impact of their mental health problems on children, and improvements in parent–child relationships. This study contributes to an emerging evidence base for co-designed child-centred interventions to prevent the transgenerational transmission of poor mental health.

KEYWORDS

child mental health, co-designed support, family mental health, mixed-method evaluation, prevention

INTRODUCTION

Children of parents with a mental illness are much more likely to experience adverse long-term development, health, and well-being outcomes (Abel et al., 2019; Shonkoff & Garner, 2012; Weissman et al., 2016). Affecting one in four children (Abel et al., 2019), supporting this population should be considered a high

priority to reduce the substantial human suffering and high economic costs linked to those long-term consequences (Hope et al., 2021; Waldmann et al., 2021).

Findings from several systematic reviews and meta-analyses of evaluations of psychosocial interventions targeting children and families with parental mental illness show that they can potentially improve parent–child relationships, parental and children's mental health (Bee

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et al., 2014; Lannes et al., 2021; Siegenthaler et al., 2012; Thanhäuser et al., 2017). Common components of these interventions include improving families' understanding of and communication about mental health, whilst following strengths-based and child-focused approaches. Increasingly, the importance of mobilising and strengthening families' social support network for this population is being argued (Reupert et al., 2022; Stiawa & Kilian, 2017). For example, a range of early intervention programmes have been developed recently focusing on mobilising children's social support (Foster et al., 2016; Goodyear et al., 2009; von Doussa et al., 2023). Evidence about whether those can improve children's mental health is inconsistent and appears strongly dependent on contextual factors, such as setting and delivery methods (Foster et al., 2016; Nicholson et al., 2015). Especially as most interventions that incorporate social support, focusing on strengths-based and child-centred principles, have been implemented and evaluated in Australia, questions remain about their transferability to other settings. This article reports on an evaluation of a co-designed intervention to support children whose parents are in treatment for their mental illness in a Western part of Austria. The set-up of the study (called the 'Village project'), which included the co-design of the intervention working collaboratively with local stakeholders, its funding and approach are explained in detail elsewhere (Goodyear et al., 2022; Zechmeister-Koss et al., 2022). Briefly, the codesign process involved six workshops over 6 months with altogether 26 local stakeholders involved in planning, providing, or commissioning mental health services (including practitioners, service provider managers, and local government representatives) as well as parents and adult children with lived experience of mental illness in the family. Participants were chosen to reflect a diverse range of characteristics and professional backgrounds with regard to field (e.g., nursing), sector (e.g., non-profit), population they served (e.g., adults), function (e.g., lead), and gender. These workshops (attended by an average 16 participants) included several guided activities that brought together the evidence base of interventions in this field, the experience of families, practitioners and managers and the understanding of the local system enablers and barriers to develop the intervention.

About the intervention

The intervention drew on evidence-based models of family-focused practice (Beardslee et al., 2003; Goodyear, Hill, et al., 2015; Solantaus et al., 2009) and social support (Goodyear et al., 2009) and followed social-psychologically informed principles of empowerment- and strengths-based approaches, drawing from person-centred counselling, motivational interviewing, self-determination and trauma sensitivity (Goodyear

et al., 2022; Zechmeister-Koss et al., 2022). Components of the intervention, which targeted parents in treatment for their mental illness with children aged 4 to 18 years, included understanding children's everyday life; mapping children's social networks, discussing how to address identified social support needs building on and strengthening children's and families' networks (Goodyear et al., 2022; Zechmeister-Koss et al., 2022). Whilst the intervention was delivered to families, in agreement with the family, people who played a supportive role in children's lives (e.g., wider family, friends, practitioners) were invited to meetings and conversations. The intervention was delivered by trained community practitioners (named 'village facilitators', VF) with backgrounds in social work, psychology, teaching, or family-focused practice, who received ongoing supervision and support. Practitioners working in adult mental healthcare settings, including psychiatrists and psychologists, were trained to conduct the initial 'screening', enquiring about children and referring to the intervention. The number and durations of sessions depended on the availability, preferences and needs of families. Sessions were planned to be in-person but with the occurrence of the Covid-19 pandemic also offered online and over the phone. On average, parents and children had 5–6 phone calls and an equal number of in-person or online meetings with VFs, which lasted on average 30 min. During the first one or two sessions, the VF explored together with the parent(s) the child's everyday life, existing support, and unmet needs. The subsequent one to two sessions were held with the child present (or, in case of older children, with the child alone) and focused on understanding the children's perspective about their daily lives, and their support needs. This was then followed by conversations between the VF, the parent and child (or in case of older children, the child alone) about how to enhance the network to support the child's everyday life. Sessions with children involved using age-appropriate language and—for younger children—play and drawing activities to develop visual maps of their social networks. Examples of actions that were agreed upon to enhance children's social support included: facilitating access to leisure or school activities; increasing time with other family members; bringing in volunteers to help with household tasks and looking after the children; redefining household responsibilities; referring to psychological support or other support offers.

METHODS

Study design

The evaluation adopted a before-after, single-arm, mixed-methods design. The design was chosen in consultation with local stakeholders, during which it became clear that flexibility in the recruitment and data



collection procedures was required to achieve an uptake of the intervention among managers, practitioners, and families. We adhered to the Consolidated Standards of Reporting Trials (Schulz et al., 2010) where applicable.

The choice of outcome measures and questions was informed by two programme theories, one for family-focused practice and one for mobilising social support network, which was developed based on the literature and expert interviews during the co-design phase of the intervention (Bauer, Best, et al., 2021, Bauer, Stevens, et al., 2021). The programme theories provided a logic of how interventions were expected to lead to intermediate and final outcomes and served as a framework for the evaluation in line with national (UK) guidance by the Medical Research Council on evaluating complex interventions (Skivington et al., 2021). For example, they led to including several measures expected to be on the path to improved child mental health, such as parents' communication about mental health, parental self-efficacy, stigma and child self-esteem. Graphs of programme theories are shown in Appendix S1.

Data collection

Quantitative data collection

The following scales used were used for measuring changes in parent's outcomes: the Patient Health Questionnaire (PHQ-9) (Spitzer et al., 1999), ENRICH social support inventory (Kendel et al., 2011), and Parenting Self-Agency Measure (Dumka et al., 1996). Additional structured questions included those about: received diagnoses; perceived mental health impact, knowledge, and communication; help-seeking intentions and experiences; and satisfaction with the intervention.

Parents also completed the following scales for *all* their children 4 to 18 years, including children invited to participate in the intervention, as well as their siblings: Kidscreen-27 (Ravens-Sieberer et al., 2014), a measure for children's quality-of-life; the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997), a measure for children's mental health; and the Children and Adolescent Mental Health Services Receipt Inventory European Version (CAMHSRI-EU) (Kilian et al., 2009) which is an adapted version of the Client Service Receipt Inventory (CSRI) (Beecham, 1992, 2000) measuring children's service use. The latter asks parents about whether and how frequently the children used services and support over the past 3 or 6 months, such as health and social care or other welfare services.

Questionnaires completed by children who participated in the intervention included the Kidscreen-27, the SDQ, CAMHSRI-EU, ENRICH social support inventory, as well as questions reflecting items from the Internalised Stigma of Mental Illness Scale (Ritsher

et al., 2003) and questions about parents' mental health, communication, help-seeking, caregiver burden, and satisfaction with the intervention.

Qualitative data collection

All parents and children who participated in the intervention and still available at follow-up were invited to take part in an in-depth, semi-structured interview to explore their experiences with the intervention. Interviews were conducted in-person, or where this was not feasible (e.g., because of lockdown restrictions) online or over the phone by a junior researcher (author 5) with master's degrees in social science, who received supervision and methodological support from two senior researchers (author 1, author 7), supporting a sensitive interview style with vulnerable groups through ongoing reflections.

Data analysis

Quantitative analysis

Data were exported from Qualtrics software (Version XM, Provo, UT) into Microsoft Excel (Version 16.64) where they were cleaned and translated before transferring them into Stata version 17 (StataCorp., 2021) for final cleaning and analysis. Scores and summary variables were created for outcomes measured with standard scales. Baseline and follow-up files for parent and children-reported responses were merged into one file, and pairs of parent-child data were created. Descriptive analysis was conducted for all variables producing means and proportions. Due to the small sample size ($n < 30$), we did not conduct statistical analysis as planned. An exception is the parent-reported data for all children, i.e., children who participated in the intervention and their siblings, where we had a large enough sample to apply t-tests to test if changes were significant ($p < 0.05$). Clustered standard errors were performed to take into account that several children had the same parent.

To estimate costs linked to children's service use, unit costs were assigned to service data and aggregated across services to derive total costs per child. The unit costs were taken from national reimbursement tariffs, tariffs from local government, and expert consultation. For service use and costs reported over a period shorter than 6 months, this was extrapolated to 6 months. Costs are presented in Euros at 2021 prices.

Qualitative analysis

Transcripts were translated into English and exported into NVivo version 12. Thematic analysis was applied, coding data first by topic areas and then – following a



more deductive approach – refining codes based on topics from programme theory and initial findings from the quantitative and workforce evaluation. The coding framework is shown in Appendix S2, S3.

Ethical considerations and procedure

Ethical approval was obtained from the ethics committee of the Medical University Innsbruck (No. 1197/2019). Parents had to be above 18 years, in treatment for their mental illness at one of the study sites, and at least one child aged 18 years or younger. If parents agreed to be part of the study, the VF would discuss which of their children, aged 4 to 18 years, might participate in the study. In line with local ethics requirements, children 4 to 8 years were asked for verbal assent, whereas children 8 to 13 years were asked for written assent and children older than 13 years were asked for written consent. Parents gave written informed consent for themselves and their children.

RESULTS

Figure 1 shows the number of participants invited into the study, those who declined or dropped out, and those participating at baseline and/or follow-up, including those who participated in the qualitative interviews. Table 1 presents the characteristics of parents and children who participated in the study. Most parents had severe mental illness and were unemployed, single mothers.

Quantitative results

Engagement and satisfaction with the intervention

As shown in Table 2, all or almost all parents reported very positively about the intervention, reporting that they and their children had received the help they needed and would be able to ask for help in the future. Parents reported that they could talk openly about their children's needs during sessions and that they and their children were actively listened to. Children's responses were more mixed and not all children felt they had not been listened to, or that the intervention supported them.

Changes in mental health knowledge, communication, and stigma

Table 3 presents changes in parents and children in their understanding of the (parent's) mental health

problems, how they talked about those in- and outside the family, how they sought help for those and in stigma.

At follow-up, a *lower* proportion (34% vs. 47% at baseline) of parents agreed or strongly agreed that they would have liked more information about their mental health problems and additional help for those in the past 6 months (38% vs. 74% at baseline) (Table 3). At follow-up, a *higher* proportion (55% vs. 28% at baseline) reported that they asked for but could not get help. At baseline, other common reasons for not seeking help included also that they did not know who to ask (41%) and that support was too expensive (19%), whereas at follow-up a common reason was that there was no adequate support offer (36%).

The data suggest some improvements in mental health communication between parents and children: the proportion of parents who never talked about their mental health problems with their children in the past 6 months reduced from 40% to 31%, and the proportion who talked more than 5 times in past 6 months about their mental health problems increased from 26% to 35%. At follow-up, a greater proportion also believed that their children understood them well when they talked to them about their mental health problems.

Overall, for children, responses did not indicate changes in mental health knowledge or communication from baseline to follow-up. Most children (75%) knew at baseline that their parents were receiving treatment for their mental health problems, and half of the children knew the name of the parent's condition. At follow-up, a slightly *higher* proportion of children (36% vs. 30%) said that they never talked with their parents about their mental health problems and that they never talked about their feelings when they talked about their parent's mental health (21% vs. 26%). Indicating a possible positive change, a lower proportion of children at follow-up than at baseline (23% vs 39%) said that no one explained to them what was going on when the parent was unwell.

Responses suggested a high level of stigma among parents and children, which did not change over time. For example, at baseline, just under two-thirds of parents blamed themselves for or felt that other people blamed them for their mental health problems, and two-thirds of children reported that they avoid telling others about their parents' mental health problems. At follow-up, a slightly higher proportion of children reported they felt ashamed (16% vs. 8%) or felt that people treated them differently (10% vs. 7%) because of the parent's mental health problem.

Children's household chores

There was a reduction in children-reported caregiver burden related to household chores (Table 3). A *higher* proportion of children at follow-up versus baseline (41%

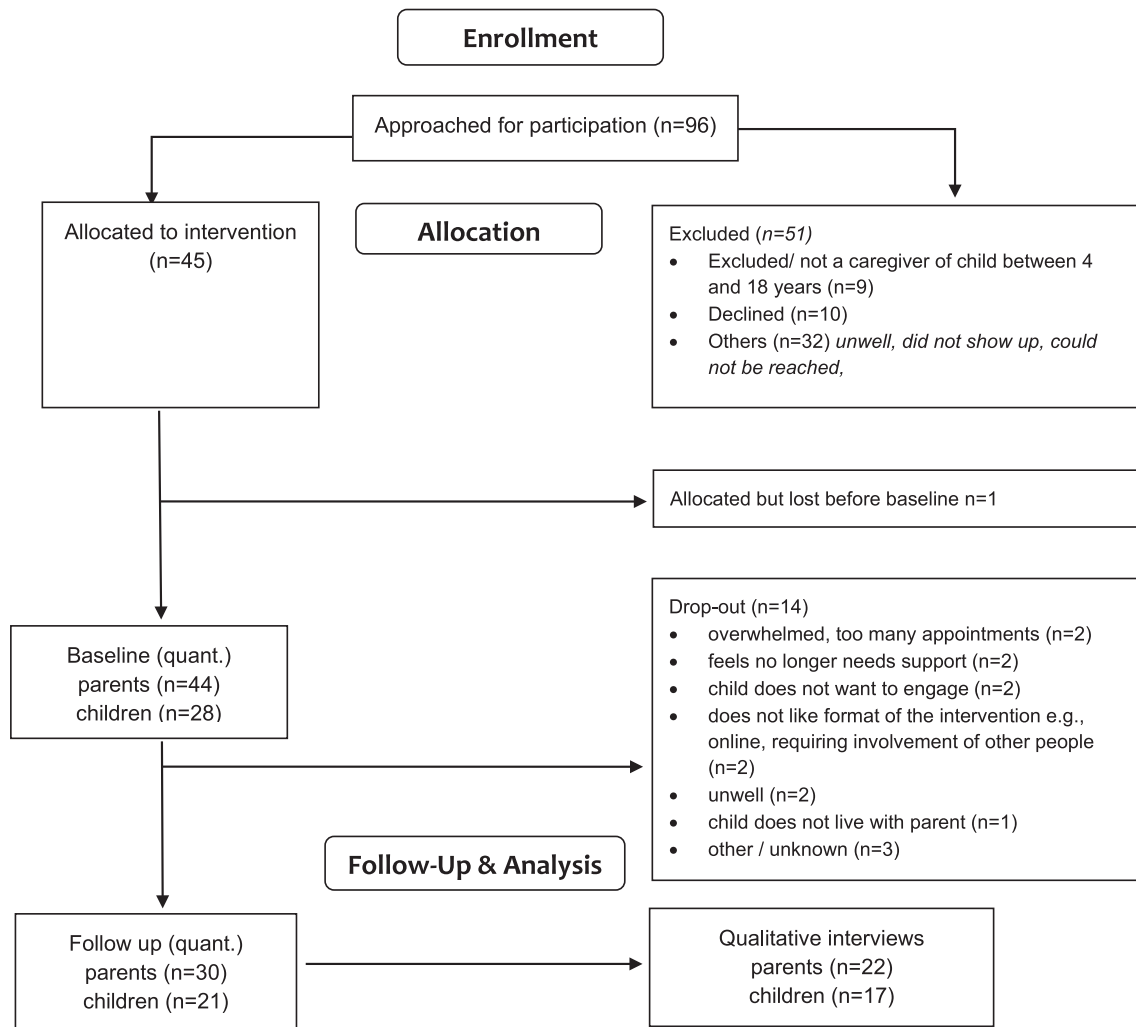


FIGURE 1 Number of families approached, allocated to intervention, assessed at baseline/follow-up, interviewed.

vs. 18%) reported that they *never* felt in the past 6 months that they had to look after everything in the household because their parent was unwell (Table 3). Similarly, at follow-up, a lower proportion of children (62% vs. 86%) reported that they had to take on more chores at home compared with other children their age.

Children's mental health and quality-of-life

According to parents' reports, the mental health of those children who participated in the intervention improved, but not for their siblings (Table 4): At baseline, 59% of children who participated in the intervention had abnormal or borderline scores, whilst at follow-up less than half (27%) scored in the abnormal or borderline range. This was not the same when siblings who did not participate in the intervention were included in the sample: 39% of children had abnormal or borderline scores at baseline, whereas 48% had abnormal and borderline scores at follow-up. This suggests that positive changes might have only occurred in children who

participated in the intervention, according to parents' reports. Similarly, the parent-reported children's quality of life appeared to improve slightly for the children who participated in the intervention but reduced for their siblings.

Parent's mental health, social support, and parental self-efficacy

Table 4 also shows that parents' depression potentially reduced (MD -1.36 , SD 8.08,) and their perceived social support increased (MD 1, SD 5.91); their parental self-efficacy or agency reduced (MD -0.11 , SD 3.33) (Table 4). None of these relationships were significant.

Children's service use and costs

Children who participated in the intervention had higher service use and costs compared with the whole group of children (which included siblings who did not participate

**TABLE 1** Demographic information for the participants (parents and children) at baseline, all participants versus those who dropped out.

Characteristics of parents at baseline	All participants <i>N</i> = 43	Participants who dropped out <i>N</i> = 14
	Mean/ <i>n</i> %	Mean/ <i>n</i> %
Parents		
Gender: Female	84	86
Education: Higher education	32	50
Employment: Employed	61	50
Marital status: Partner/Married	25	21
Number of children	2	2.1
Age	41 (<i>n</i> = 32)	43 (<i>n</i> = 11)
Self-reported mental health condition and impact at baseline, all participants		
Mental health condition		
Depression	66%	
Anxiety	32%	
Post-traumatic stress disorder	30%	
Addiction	20%	
Bipolar	20%	
Personality disorder	20%	
Eating disorder	16%	
Impact of mental health condition: Strong or very strong	80%	
Impact of the Covid-19 pandemic on wellbeing: Strong or very strong	66%	
Children		
Gender: female	39%	56%
Living with (both) parents	65% (<i>n</i> = 17)	56%
Age	13 (<i>n</i> = 25)	11
Impact of the Covid-19 pandemic on wellbeing: Strong or very strong	44%	

in the intervention) (Table 5). The most used services were community health services and school social workers. Whereas total costs per child who participated in the intervention reduced from €224.6 at baseline to €112.4 at follow-up, total costs per child for all children, including siblings who did not participate in the intervention, increased from €102.4 to €198.6.

Qualitative results

As shown in Figure 1, out of 30 parents and 21 children available at follow-up, 22 parents and 17 children agreed to participate in the qualitative interviews. Themes are presented below, and some are supported by illustrative quotes to demonstrate interpretations.

Motivation and hesitations to engage with the intervention

Parents described the difficulties they had engaging with the intervention at the start because they had

been in crises or admitted to inpatient facilities, they had not felt that they were unwell enough to need the support, or their children did not want to participate. Some parents and children had been unsure what the intervention was about and felt they had not received sufficient information from the referring practitioner. Some felt that the intervention could have been promoted more positively to them, whilst others had reservations because the intervention was part of a research study. Reasons that motivated parents to participate included that the intervention was for their children. Some parents mentioned their own curiosity about the intervention and said they had 'intuitive' feelings that it might be something different and useful. "I thought it was cool because they [the VFs] are arranging for everyone to be part of a network. And nothing like that ever happened before. Or at least not something where it is about everyday life." (mother#8). Children's attitude towards the intervention were at times influenced by how their parent's responded. "Dad is usually not enthusiastic about such things, but he immediately said: 'Yes, let's do it (...)' (daughter, 17 years).

**TABLE 2** Satisfaction with the intervention: parents and children.

		% or mean
Parents (<i>n</i> =29) felt that...		
... child(ren)'s needs were addressed in	Several areas	79%
	Mainly one area	21%
... they could talk openly about child(ren)'s needs	(Strongly) agree	100%
	Don't agree	0%
... they were actively listened to	(Strongly) agree	100%
	Don't agree	0%
... their child(ren) was/were actively listened to	(Strongly) agree	100%
	Don't agree	0%
... people attending meetings showed they cared	(Strongly) agree	96.5%
	Don't agree	3.5%
... they received the help they needed	(Strongly) agree	96.5%
	Don't agree	3.5%
... going forward they know how to ask for support for her/him and child(ren)	(Strongly) agree	96.5%
	Don't agree	3.5%
Children (<i>n</i> =21) felt that...		
... all areas important for them were talked about	Several areas	75%
	None, don't remember	25%
... they were able to talk about everything they wanted	(Strongly) agree	90%
	(Strongly) disagree	10%
... they were understood	(Strongly) agree	90%
	(Strongly) disagree	10%
... they were listened to	(Strongly) agree	71%
	(Strongly) disagree	29%
... they were very well supported	(Strongly) agree	85%
	(Strongly) disagree	15%
... that project helped with day-to-day life (roles, responsibilities)	(Strongly) agree	67%
	(Strongly) disagree	33%
... that project helped doing things important to them or they enjoy doing	(Strongly) agree	71%
	(Strongly) disagree	29%

Engagement and relationship with the project and village facilitators

Parents described how the VFs initiated phone calls and appointments, reminded them of appointments, and offered flexibility with regard to timing and location, all of which were above and beyond their expectations. Parents explained how this had enabled and motivated them to engage with the intervention. “[I was called] on the same day (that she went to the referring practitioner) ... I still have that in my head now... I was really impressed.” (mother#4). They also described how important it was for them that VFs had offered their sessions whilst accompanying them and their children to daily activities, which had facilitated trust and made them value the offer. Some described how children got very attached to the VFs. Children also described their affection for the VFs, whom they enjoyed spending time with, even when they had had reservations or felt shy at the beginning.

However, parents also reported that the intervention required a level of commitment that could be difficult to maintain for them and their children, especially when mental health problems were getting worse. For children,

the need to attend appointments was sometimes ‘exhausting’. At the same time, parents felt the duration of the intervention needed to be longer for them to implement the required changes. Older children also reflected on how they would have needed more time to open up. Parents described how the Covid-19 pandemic had interrupted the intervention. Some felt that the online delivery of the intervention was not what they wanted because it was not ‘personal’.

Principles and components of the practice

Parents described how the VFs explaining to their children about their mental health problems had been very helpful. They felt this had taken a weight off their shoulders, and provided relief for the children, who felt less guilty and worried about their parents. “I think that she [daughter] actually got a good explanation for the first time for what is going on in my head.” (mother#7). Parents felt that they learned more about their children's feelings. They commented positively on elements of the approach such as its playfulness, and the focus

**TABLE 3** Mental health knowledge, information, communication, help-seeking and stigma: parents and children.

	Baseline (<i>n</i> = 43)	Follow-up (<i>n</i> = 29)
Parents report that...		
... they talked about their mental health problems with their children (in the past 6 months)		
Never	40%	31%
1–2 times	23%	17%
3–5 times	12%	17%
>5 times	26%	35%
... their child(ren) understand(s) about their mental health problems when they talk to them		
A lot	12%	30%
Not so much	15%	15%
Not sure	58%	30%
Some more than others	15%	25%
... they would have liked more information about their mental health problems		
(strongly) agree	47%	34%
(strongly) disagree	53%	66%
... they wanted additional help for their mental health problems but could not get it (in past 6 months)		
74%	38%	
Because...		
they did not want to ask	28%	27%
they asked but could not get it	28%	55%
they did not know who to ask	41%	9%
there was no support offer	13%	36%
the support offer was too expensive	19%	9%
another reason	38%	36%
... they give themselves the fault, or feel that other people give them the fault for their mental health problem	63%	59%
	Baseline (<i>n</i> = 28)	Follow up (<i>n</i> = 21)
Children report that...		
... they know that parents are getting treatment for their mental health problem		
75%	73%	
... they know the name of their parent's mental health problem		
43%	46%	
... they talked about their mental health problems with parent (in past 6 months)		

TABLE 3 (Continued)

	Baseline (<i>n</i> = 43)	Follow-up (<i>n</i> = 29)
Never	32%	36%
1–2 times	32%	32%
3–5 times	11%	9%
>5 times	25%	23%
... when they talked with their parent they also talked about his/her (child's) feelings		
Never	26%	21%
Rarely/sometimes	53%	57%
Often	16%	21%
Very often	5%	0%
...no one explains them what is going when they are worried because parent is unwell		
39%	23%	
... they wanted additional help but could not get it (in past 6 months)		
6%	9%	
... they feel it is their fault that parent has mental health problems		
21%	18%	
... they think that parent's mental health problems can be caught like a flu		
11%	9%	
... they feel ashamed that their parent has mental health problems		
8%	16%	
... they feel that other people ignore them or treat them differently because their parent has mental health problems		
8%	10%	
... they avoid telling others about their parent's mental health problem		
70%	64%	
... they felt they had to ensure everything is looked after in the household because parent was unwell (in past 6 months)		
Never	18%	41%
Sometimes	54%	29%
Often	18%	12%
Very often	11%	18%
... chores they did more than other children in past 6 months		
86%	62%	
... those included		
looking after siblings	39%	50%
looking after parent	21%	25%
helping parent to take their medication	4%	13%



TABLE 3 (Continued)

	Baseline (<i>n</i> = 43)	Follow-up (<i>n</i> = 29)
preparing meals	25%	28%
cleaning/looking after house	54%	75%
shopping food or other essentials	29%	88%
organising transport to school or leisure activities	7%	25%
organising doctors' visits	4%	25%

and attention on the children's perspectives and feelings. Parents described how their children enjoyed the attention and how it provided them with something to look forward to and not feel alone or isolated as a family. Parents reflected on how their experience with this approach was very different from what was usually offered to them. "I often thought to myself: Why didn't the social worker from the child and youth welfare services ever do that? Not one of them ever spent an hour talking to my child." (mother#8).

Parents commented positively on the tools or equipment used during sessions, such as the children's books that explained about mental health, which they thought had worked well for their younger children, whilst the calendars and diaries had worked well for the older children. Children themselves, especially the younger ones, commented positively on the play, crafting, toys, and books, which they remembered to be fun. Older children explained how the network activity, or the activity diary had given them more of a structure to their days, helped them to think what was important to them, and feel reminded and appreciative of the people in their lives who could support them.

The age-appropriateness of parts of the intervention was a concern for some parents, who either felt that children were too young to have conversation about mental health, or too old to engage with some of the activities or be positively influenced by them. Problems were also reported with engaging the wider social network, as parents did not want to overwhelm or confront family members of friends, and sometimes reported negative experiences when they tried to confirming their fears.

Changes in parents' help seeking behaviour and confidence

Parents described how the intervention had motivated them to accept help. "At the beginning we thought we did not need a support system ... [or] professional help. Because of the 'Village project' we see this a bit differently now: If I would be in a crisis again, (...) I would see if

someone could come into the family. I never thought before that I would do that." (mother#10). Parents reported how they were also more confident and knowledgeable, asking for the help they needed. Some parents reported feeling more confident in various aspects of life, including finding work. "Because, at first, I did not trust myself with anything. This has improved. I can even imagine going back to work at some point." (father#21).

Changes in mental health literacy, communication and relationship between parents and children

Parents reported feeling less guilt and shame and started accepting their mental illness. Children also reported how they started to understand their parent's mental health problems better. Parents reported how the intervention allowed them to communicate with and listen to their children more effectively. This included communicating more openly about feelings and emotions, asking their children how they were doing, and taking more time to explain their own feelings and thoughts. Parents described how they had improved their skills to focus on the children. Children reported how they perceived changes in their parents as something positive and helpful.

Changes in social networks and support

Parents and children described how they liked the support from people they had met and the activities they accessed because of the intervention. This included the support from volunteers, who visited them in their homes, provided friendship and emotional support, and helped looking after the household and children. Some older children reflected positively about their experiences with additional leisure activities set up by the VF, as well as an internet forum where they could exchange information or experiences with other children whose parents had mental health problems.

Some parents reported that having additional connections with the VFs through the intervention meant their family felt less isolated from others. For example, when mentioning to friends or acquaintances that there was an intervention that supported them and their children, those friends and acquaintances became interested in the topic and wanted to get involved and help. Parents also described how they started to have better relationships with their friends and family. "Because, before I didn't really want to talk to anyone. I wasn't one of those [people] who like to talk to [other] people (...) and that has really changed." (mother#3). They reported that VFs had shown them how they could practice communicating more effectively with others and value each other's relationships more and focus on children's needs. Parents

**TABLE 4** Parent-reported outcomes at baseline and follow-up.

Outcome measure	Baseline, mean (SD)	Follow-up, mean (SD)	Mean diff (SD)	<i>p</i> -Value
PHQ-9 ^a (<i>N</i> =29)	10.82 (5.80)	9.46 (5.16)	-1.36 (8.08)	–
PSAM ^a (<i>N</i> =29)	9.57 (2.63)	8.68 (2.16)	-0.11 (3.33)	–
ENRICH ^a (<i>N</i> =29)	18.93 (5.18)	19.93 (4.44)	1 (5.91)	–
For children who participated in the intervention ^b : (<i>N</i> =15 at baseline; <i>N</i> =11 at follow-up)				
SDQ score (total)	13.4 (7.6)	11.8 (6.0)	-1.58 (N/A)	–
SDQ Emotional sub-scale	3.94 (2.79)	4.45 (2.25)	0.52 (N/A)	–
SDQ Conduct sub-scale	2.81 (2.17)	1.91 (1.92)	-0.90 (N/A)	–
SDQ Hyperactivity sub-scale	4.63 (2.78)	3.64 (2.38)	-0.99 (N/A)	–
SDQ Peer sub-scale	1.67 (1.91)	1.82 (1.54)	1.15 (N/A)	–
SDQ Pro-social sub-scale	7.50 (2.16)	8.82 (1.89)	1.32 (N/A)	–
% children with abnormal or borderline score	59	27	27 (8.60)	–
For all children of parents who participated in the study: (<i>N</i> =41 at baseline; <i>N</i> =40 at follow-up)				
SDQ score (total)	12.44 (7.35)	12.95 (6.23)	0.51 (N/A)	0.737
SDQ Emotional sub-scale	3.74 (2.91)	3.95 (2.51)	0.21 (N/A)	0.726
SDQ Conduct sub-scale	2.66 (2.07)	2.33 (1.93)	-0.34 (N/A)	0.442
SDQ Hyperactivity sub-scale	3.88 (2.74)	4.45 (2.64)	0.57 (N/A)	0.342
SDQ Peer sub-scale	2.05 (1.93)	2.23 (1.75)	0.18 (N/A)	0.685
SDQ Pro-social sub-scale	7.79 (2.47)	7.73 (2.47)	-0.06 (N/A)	0.912
% children with abnormal or borderline score	39	48	13 (6.12)	–
Kidscreen-27 (total score), for children who participated in the intervention ^b (<i>N</i> =15 at baseline; <i>N</i> =11 at follow-up)	114.8 (12.82)	115.4 (15.75)	0.56 (N/A)	–
Kidscreen-27 (total score), for all children of parents who participated in the study (<i>N</i> =41 at baseline; <i>N</i> =40 at follow-up)	114.9 (15.30)	111.3 (18.37)	-3.65 (N/A)	0.333

Abbreviation: SD, Standard deviation.

^aPaired *t*-test.

^bSD=N/A when not available for unpaired *t*-test; for sample sizes <30, statistical tests were not performed.

described how being put in touch with student volunteers helped them and their children with various aspects of their family life. "... since the student was with me, it just got better for me because she took a lot off my shoulders [like] playing with the kids [so] I was also able to cook, I was able to go to my therapy." (mother #3). Some parents described how building on the idea of and knowledge gained from the intervention, they had started to create their own small neighbourhood networks or applied similar principles of neighbourly exchanges to their existing relationships with neighbours.

Some older children described that the intervention had helped them in coordinating the support from different people when the parent was in hospital because of their mental illness. This included help looking after siblings, or with household tasks. Some reported how relationships with other people changed and how they were able to talk more openly with others, including about their parents' mental health problems. "It [the intervention] gave me a bit of an idea of how to (better) communicate with other people" (son, 16 years).

However, some parents described the difficulties they had discussing their mental health problems with and

seeking support from families and friends. One parent described how she was not able to talk with anyone in her or her children's network about her mental health problem and how friends and family members had withdrawn from her when asked to be part of the intervention. "She [her friend] was at this network meeting and now she is no one (...) I tried to tell her for a while that it was difficult and so on, and she was totally overburdened with it." (mother #5).

DISCUSSION

Findings from this exploratory mixed-method evaluation show that a child-centred social network intervention was highly valued by families who engaged with the intervention. Importantly, the sample characteristics show that the study was able to recruit a high-risk group, i.e., children of single parents with severe mental illness with lower socio-economic status (Abel et al., 2019). The group of families who participated in the intervention included parents, who, at the beginning of the intervention, did not want help or to talk

**TABLE 5** Average service use and costs linked to parent-reported children's service use (in €, 2021 prices, 6 months period).

	Number of visits, mean (SD)			Costs, mean (SD)		Follow-up – Baseline, mean diff.
	Baseline	Follow-up	Follow-up – Baseline, mean diff.	Baseline	Follow up	
Parent-reported service use and costs for children who participated in intervention (<i>n</i> = 16)						
Hospital emergency	0.1 (0.2)	0 (0)	–0.1 (0.2)	13.1 (58.7)	0 (0)	–13.1 (58.7)
Hospital inpatient	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Hospital outpatient	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Community health service (clinician)	1.4 (1.7)	1.8 (3.2)	0.4 (3.6)	46.6 (57.6)	60.0 (105.7)	13.3 (119.6)
Social worker	4.8 (11.5)	2.2 (6.8)	–2.6 (14.2)	135.8 (325.6)	62.3 (192.5)	–73.6 (401.1)
School psychologist	0.4 (1.8)	0.0 (0)	–0.4 (1.8)	29.0 (129.5)	0 (0)	–29.0 (129.5)
School social worker	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total average cost				224.6 (363.9)	122.2 (233.8)	–102.4 (467.6)
Parent-reported service use (<i>N</i> = 41) and cost for ALL children						
Hospital emergency	0.1 (0.2)	0.1 (0.4)	0.0 (0.5)	15.1 (61.5)	21.1 (114.8)	6.0 (119.9)
Hospital inpatient	0 (0)	0.1 (0.8)	0.1 (0.8)	0 (0)	72.4 (596.1)	72.4 (596.1)
Hospital outpatient	0.05 (0.3)	0.1 (0.4)	0.05 ^a (0.5)	3.3 (18.6)	6.6 (30.1)	3.3 ^a (36.0)
Community health service (clinician)	0.7 (1.5)	1.6 (4.2)	0.9 (4.3)	23.4 (49.5)	52.8 (138.2)	29.5 (144.0)
Social worker	1.7 (6.8)	1.5 (5.5)	–0.2 (9.1)	48.1 (192.5)	42.3 (156.9)	–5.9 (256.5)
School psychologist	0.1 (0.9)	0.1 (0.3)	0.0 (0.1)	6.7 (62.1)	3.3 (21.8)	–3.3 (66.2)
School social worker	0.2 (1.9)	0 (0)	–0.2 (1.9)	5.9 (54.6)	0 (0)	–5.9 (54.6)
Total average cost				102.4 (230.1)	198.6 (699.1)	96.2 (747.6)

Abbreviation: SD, Standard deviation.

^a*p*-values <0.1 (*t*-test, including clustered standard errors).

with others about their mental health problems. Due to small sample sizes, it was not possible to identify statistically significant changes in parents' or children's outcomes. Despite trends towards positive outcomes for the families who participated, it is important to recognise that a large majority of parents rejected the intervention when invited by their treating practitioner. A situational analysis conducted at the beginning of the study (Zechmeister-Koss et al., 2020) highlighted high levels of mental health stigma, reinforced by traditional religious and politically conservative beliefs, a lack of prevention-orientation in the health and social care system, and dominance of inpatient treatment organised in medical hierarchies. These contextual factors are likely to make it particularly difficult to implement social network interventions of this kind, which rely on multi-disciplinary collaborative working, and on trusting relationships between practitioners, families and community members (Bauer, Stevens, et al., 2021). For example, the hesitancy by parents to engage in interventions is influenced by their perceived negative consequences of participation including a fear of the

loss of custody of their children (Montgomery, 2005). In our study, parents' willingness to participate was strongly influenced by how well the referring practitioners explained to them the intervention and its value. Not all parents received good information. Other studies have shown that in health systems that are focused on adults and oriented around the medical model of care, practitioners struggle to promote or deliver interventions focused on the child, families' strengths and social determinants of mental health (Allchin et al., 2020; Goodyear, Obradovic, et al., 2015). Other qualitative results indicate that several factors promoted the acceptability of the intervention to parents. Their perception was that the offer was different from other services in that it focused on their daily lives, the child's perspective and whole families and their networks. The flexibility, adaptability and frequency of contact provided by the VFs helped to maintain the motivation of families to both get involved and continue to participate in the intervention.

Our findings suggest the importance of several mechanisms, which we had hypothesised to be on the



pathway to achieving positive mental health outcomes in children and parents. They include improved family communication about mental illness, improved family relationships (as parents understand their children's needs better), mobilised social support (and reducing perceived burden or pressure), reduced families' isolation. We also identified additional mechanisms that might be important to some children or families such helping them to create more structure and routines to their lives. We also found social capital outcomes that can be achieved for some families when modelling social support (Bauer, Stevens, et al., 2021). Although the study could not confirm casualties, the theory-informed approach towards evaluation was useful in explaining the likely contribution of the intervention to changes in children's and parents' mental health and mechanisms to achieving those, in line with guidance on the evaluation of complex interventions (Skivington et al., 2021). A range of recent evaluations have identified similar mechanisms, increasing the validity of our findings, and thus the underlying programme theories, across settings (Goodyear et al., 2022; Marston et al., 2016; Maybery et al., 2019) Nevertheless, our study's limitations need to be highlighted. Despite substantial efforts, we were not able to recruit a larger number of families into the study. In addition to the above-mentioned implementation barriers, this was partly due to Covid-19 pandemic-related recruitment shortages as some of the sites did not run their regular services, thus reducing the number of families invited to participate in the study. Parents were generally cautious about online participation, which was reflected in drop-out numbers. As described, despite substantial efforts to include the voices of children such as through introducing child-friendly and age-appropriate assent and consent forms, questionnaires, topic guides and interview techniques, it was difficult to gather information from this population. Cultural norms around privacy and the orientation of the healthcare system towards medical institutions were factors that seemed to influence the ability to undertake the research. Future research would be required to understand those factors and inform capacity-building between practice and research so that this kind of research can be usefully conducted. Social desirability bias cannot be excluded: As parents developed friendly relationships with the VFs, it is possible that they reported positive results to express their gratitude. Finally, whilst our study suggests the potential feasibility and acceptability of applying tools such as the CSRI to measure children's service use, there are currently major limitation towards conducting economic evaluations in this field due to lack of appropriate unit costs (Zechmeister-Koss et al., 2023). Incorporating economic modelling into studies to extrapolate short- to long-term outcomes and economic consequences should become standard in areas of intergenerational mental health.

CONCLUSIONS

Our study sought to contribute to an emerging evidence base for how to best develop and implement a preventative intervention that seeks to break the well-established cycle of intergenerational transition of poor mental health. Working with local stakeholders was an important driver for ensuring the implementation was feasible and acceptable to those delivering it in the care systems. Whilst surfacing the substantial challenges of implementing and evaluating such an intervention, our study also highlighted the need for such supports, as efforts to prevent families continuing to suffer in silence.

RELEVANCE TO CLINICAL PRACTICE

A high proportion of people using nurse-led or -supported adult mental health services, are parents, whose children are at much higher risk than other children to develop mental health problems. Currently, opportunities are missed to support children of parents in treatment for their mental illness early on. If adequately funded and supported, mental health nurses can have an important role in leading and supporting the integration of interventions that seek to promote children's mental health and ultimately reduce the risk of intergenerational transmission of poor mental health. This article contributes to an emerging evidence base about how to cost-effectively support this population, by mobilising social support, improving families' mental health communication, a flexible, frequency and continuity in approach and a focus on children's and families' daily lives and needs are important. It also highlights many challenges of offering this approach in health systems that are strongly medically focused. New roles, such as those of the village coordinators, might be developed within the nursing workforce to bridge gaps between families, services and communities. Furthermore, it suggests the role of theory-informed, participatory approaches in developing, implementing and evaluating such interventions that require cross-sector responses.

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CONFLICT OF INTEREST STATEMENT

The authors declare there are no conflicts of interest relevant to the manuscript.



DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICAL APPROVAL

Ethical approval was obtained from the ethics committee of the Medical University Innsbruck (No. 1197/2019).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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