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Out-of-home interventions for adolescents who were treated according to the Open Dialogue model for mental health care

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ABSTRACT

Background: The Open Dialogue approach (OD) emphasizes community-based psychiatric treatment for adolescents, but its success in achieving this is poorly documented.

Objective: To analyse out-of-home intervention usage in a national sample of adolescent psychiatric patients and determine if OD is linked to increased time until out-of-home intervention.

Participants and setting: The register-based cohort study included all adolescents aged 13–20 who received psychiatric treatment in Finland between 2003 and 2008. The research group ($n = 780$) included adolescents whose treatment was initiated in the Western Lapland catchment area, where OD covered the entire psychiatric service. The comparison group ($n = 44,088$) included the rest of Finland. National register data encompassed the period from treatment onset until the end of the 10-year follow-up or death. The primary outcomes of interest were the times to the first and second out-of-home intervention, including foster care, supportive housing, and hospitalization. The secondary outcomes included the clinical/demographic characteristics of adolescents treated out-of-home.

Methods: The hypothesis was tested via an inverse probability of treatment-weighted Cox hazard model, plus within- and between-group comparisons to analyse the secondary outcome.

Results: OD was associated with increased time to the first (adjusted hazard ratio [aHR]: 0.61, 95%CI: 0.52–0.72) and second (aHR: 0.75, 95%CI: 0.58–0.96) out-of-home interventions. In both service types, there was a subgroup of adolescents with repeated out-of-home interventions, who also demonstrated poorer long-term outcomes.

Conclusion: OD-based psychiatric services for adolescents are associated with fewer out-of-home interventions. The clinical significance of the findings warrants further research.

1. Introduction

In many Western societies adolescents may be placed and treated in a non-home setting to guarantee their safety and wellbeing. For example, if an adolescent lives in unfavourable circumstances where their parents are unable to guarantee their wellbeing, child

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protection agencies can place them in foster homes, institutions, or kinship care (Côté et al., 2018). Correspondingly, in acute psychiatric crises, psychiatric inpatient treatment may be required when adolescents express suicidal thoughts, or other thoughts and behaviour that exhibit a potential threat to their development and wellbeing (Hayes et al., 2018). However, even if out-of-home foster care placements (Li et al., 2019; Redding et al., 2000; Reddy & Pfeiffer, 1997) and psychiatric inpatient care (Hayes et al., 2018; Kennedy et al., 2020; Pfeiffer & Strzelecki, 1990) can be seen to fulfil their initial purpose of protecting adolescents' health, there are occasions when out-of-home psychiatric treatment (Bryson et al., 2017) and placements (Gao et al., 2017; Greeno et al., 2018; Greeson et al., 2012; Vinnerljung & Sallnäs, 2008) may actually exacerbate the initial challenges.

Negative consequences following placements outside the home may relate to the instability of placements (Hong et al., 2022; Konijn et al., 2019), changes in the familial social support system (Konijn et al., 2019; Strijker et al., 2008), disrupted attachment, and other experiences of loss (Greeson et al., 2012). It has been argued that the accumulation of such consequences may result in a negative spiral, affecting the person's ability to build secure attachments to new caretakers, and thus increasing the risk for problematic behaviour (Newton et al., 2000) and for more complex traumatization (Greeson et al., 2012). Such factors may explain why children placed outside the home demonstrate poor outcomes, including significant psychiatric symptomatology and other social difficulties over the lifespan as compared to their peers, beyond what might be explained by their sociodemographic characteristics (Côté et al., 2018; Greeno et al., 2018; Sariaslan et al., 2022). In addition, children and adolescents who are hospitalized to psychiatric inpatient or residential care are at high risk of being retraumatized due to coercive treatment practices (Bryson et al., 2017; Perers et al., 2022), and to the unfamiliar nature of the institutional setting (Haynes et al., 2011).

It can be argued that there is a need for alternative approaches, with the aim of guaranteeing the stability of an adolescent's living environment, preferably by mobilizing resources from adolescents' existing social support systems. Systemic and dialogical approaches are conducted in line with this aim. As noted by Coulter et al. (2020), contemporary systemic approaches seek to foreground the service users' own expertise. Difficulties are seen as arising in the context of family and community networks, which are also viewed as potential resources for the resolution of those difficulties (Madsen, 2011, Låras et al., 2017). In this way, the service user's relationships with the wider network are emphasized, so that they, together with formal (e.g. professionals) and informal stakeholders (e.g. family members), can achieve sustainable change. This implies a significant shift in the role of social and/or mental care experts, who are positioned as facilitators in interpersonal processes. Systemic approaches thus elicit the resourcefulness and know-how of the service users and their network (Fook, 2002). In practice, these approaches encompass the practices labelled as, for example, Reclaiming Social Work (RSW), the Systemic Model, Signs of Safety (SoS), or Family Group Conferencing (FGC). One example of social network-oriented approaches in the context of mental health care is the need-adapted Open Dialogue (OD) approach (Seikkula, Alakare and Aaltonen, 2011). This has been presented as an alternative to institutional mental health care, as it emphasizes community-based and social network-oriented support based on service users' own preferences and ways of framing their experience of distress (Gooding, 2021).

OD includes several organizational and therapeutic principles on how mental health services are to be arranged and treatment conducted (Seikkula et al., 2003). Firstly, in OD-based services, immediate access to services is guaranteed whenever needed, and no pre-assessments or referrals are required. If expertise from other services is needed, professionals are invited to joint network treatment meetings, bringing together also family members and other relevant people in the service user's life. These meetings are usually organized at the person's home or in another environment of the person's own choice. In network treatment meetings premature conclusions, interpretations, and treatment decisions (regarding, for example, hospitalization and medication) are avoided. Instead, the same team takes responsibility for the entire treatment process, mobilizing network treatment meetings as frequently as required, and guaranteeing a dialogical response to the acute crisis. All perspectives and decisions emerging in network meetings are considered together with service users and their close networks. Thus, the primary task for professionals at the start of the treatment is not to determine the specific diagnosis or method of treatment; rather, the aim is to create a safe space where everyone can be heard and a mutual understanding of the challenging situation created. The promotion of a dialogical response to difficulties is viewed as promoting a sense of agency, while simultaneously enabling a more flexible integration of existing services, including methods to address mental health difficulties in a case-by-case manner (Bergström et al., 2018).

OD for severe mental health crises was systematically developed and studied in the 1980s and 1990s within the Western Lapland catchment area (Seikkula et al., 2003), consisting of the south-western parts of Finnish Lapland, with a population of approximately 60,000 in the 2020s. The studies conducted demonstrated good long-term outcomes, especially regarding long-term functional outcomes, together with a low inpatient care ratio as compared to standard services (Bergström et al., 2018; Seikkula et al., 2011). After organizational changes in the health care services in the late 1990s, the local psychiatric clinic for adolescents continued to deliver OD-based services for all adolescents aged 13–20 in need of mental health care within the region of Western Lapland (Bergström et al., 2022). In line with the main premise of OD, the adolescent clinic operated over organizational boundaries, the primary aim being to activate social networks to support adolescents undergoing crises, and to maintain psychological continuity of their care in a community setting. It was seen as important to enable a need-adapted and network-oriented response for adolescents and their families within their real-life environment before the situation developed to a point where out-of-home interventions would be needed. Hence, services were developed in collaboration with local schools, social services, and other operatives working with adolescents and their families.

No adolescent psychiatric ward was ever established in the region of Western Lapland. If necessary, hospital care for minors was arranged in collaboration with hospitals located in other regions. Overall, there is still a lack of information on the proportion of adolescents under OD who require inpatient psychiatric care. In a nationwide register-based study (Bergström et al., 2022) including all first-onset adolescents who received treatment in Western Lapland in the period 2003–2008, there were indications that on average, a shorter time was spent under hospital treatment in OD as compared to standard services; however, it remains possible that instead of

the intensive and network-oriented community-based outpatient care, the lack of psychiatric beds for adolescents was partially compensated for by other kinds of services, such as supportive housing and child protection services.

Overall, there is a need for service-level research on how well OD fulfils the premise of community-based home treatment for adolescents with mental health difficulties as compared to standard psychiatric care. This study aimed to address this by analysing the usage ratio and elapsed time to out-of-home interventions among adolescents treated according to the Open Dialogue model of mental health care.

2. Methods

2.1. Design

Data for this longitudinal register-based cohort study were obtained from Finnish national social and health care registers covering all adolescents aged 13–20 who received first-time psychiatric treatment in Finland during the period 1 January 2003 to 31 December 2008. The research group (OD) ($n = 780$) included all adolescents whose treatment commenced in the Western Lapland catchment area, this being the only region in Finland where OD covered the entire psychiatric service for adolescents at the time of the inclusion years. The comparison group (CG) ($n = 44,088$) consisted of all adolescents whose mental health treatment commenced outside Western Lapland.

Data were gathered from Finnish national social and health care registers by the Finnish register authorities during 2020–2021. The data consisted of all available register entries until 31 December 2018, thus enabling a continuous 10-year follow-up time from the initiation of psychiatric treatment for all adolescents.

According to previous studies, OD facilitates the mobilization of social networks to support the in-home care of acute mental health crises in a need-adapted manner (Bergström et al., 2018), and this should be reflected in a decrease in the total usage ratio of out-of-home interventions. Thus, we hypothesized that longitudinally, psychiatric treatment commenced under OD would be associated with (i) increased time to the first out-of-home intervention after the onset of psychiatric treatment and (ii) increased time to the second out-of-home intervention after discharge from the first out-of-home intervention.

2.2. Measures and variables

The baseline and outcome variables were formed by combining information from different registers. For each adolescent, the onset time was defined according to their first entry in the register of psychiatric services for adolescents. The follow-up time was set as death or else a point 10 years (3650 days) from onset, whichever occurred first. The baseline variables were *age at the onset of psychiatric treatment*, *gender*, *days in foster care prior to psychiatric treatment*, and *primary psychiatric diagnoses* (ICD-10 F-codes). Given the service-dependent diagnostic practices in operation, plus a cautious approach towards premature diagnosis of adolescents within the Finnish health care system, for the purpose of evaluating the diagnostic distributions, adolescents were considered to have a certain diagnosis if there was at least one entry documenting that diagnosis within the first year of follow-up. This approach takes into account the possibility of delayed or evolving diagnoses, allowing for a more accurate assessment of diagnostic patterns in this population.

The primary outcomes of interest were times (in days) to the first and second out-of-home intervention (institutional or other placement outside the home, supportive housing, or psychiatric inpatient treatment). The time to the first event was calculated by subtracting the date of initiated psychiatric treatment from the start date of the first foster care placement or first admission to supporting housing services or first inpatient admission or date of death, whichever occurred first. The time to the second out-of-home intervention was calculated by subtracting the end date of the first out-of-home intervention from the start date of the next out-of-home intervention or the date of death, whichever occurred first. If the adolescent did not experience any out-of-home intervention and had survived from the initiation of treatment to the end of the 10-year follow-up, the time was defined as 3650 days. Prior formations of outcome variables, duplicate register entries resulting from, for example, hospital transfers, were identified and combined with the initial register entry.

The secondary outcome variables included the frequency and average length of out-of-home interventions during the 10-year follow-up. We also conducted a within-group comparison on the clinical and demographic characteristics of those who experienced an out-of-home intervention during the follow-up as compared to those who did not, by applying longitudinal outcome variables (mortality, and the usage of mental and social services in and at the end of the 10-year follow-up) from a previous study (Bergström et al., 2022).

2.3. Statistical methods

Group characteristics were compared by using Chi-square and Student's *t*-tests. For the primary outcome analysis, the observable differences in baseline characteristics were adjusted via a stabilized inverse probability of treatment weighting (SIPTW). According to a previous study using the same sample, only 5 % of adolescents in the OD group received a psychiatric diagnosis within the first year of onset, as compared to 65 % in the comparison group (Bergström et al., 2022). This phenomenon was due to the main premise of OD, in which diagnoses are not required for psychiatric treatment to be arranged. Due to the different diagnostic procedures, we were unable to fully adjust for the diagnostic distribution. Thus, we used Cox hazard regression analysis to identify the primary diagnoses with the highest hazard ratios for out-of-home-interventions to be included in the model.

The propensity scores for weights were calculated via multivariable logistic regression, including the treatment group (OD/CG) as a

dependent variable, and gender, age at onset, primary diagnoses with highest hazards, and days in foster care prior to initiation of treatment as covariates. The propensity scores were used to calculate the SIPTWs for each case. SIPTW Cox regression was then used to test main hypothesis. To test whether OD is associated with a longer time to the second out-of-home intervention after discharge from the first out-of-home intervention, the propensity scores for SIPTW were further adjusted for the type and length of the first out-of-home intervention. The latter regression model included only cases with one or more out-of-home interventions. The proportional hazards assumption was confirmed through graphical assessment. Finally, adjusted hazard ratios (aHR) were used to evaluate the direction and size of the effect. *P* values of <0.05 were considered to be statistically significant.

The SIPTW Cox regression was performed via Stata 17, and the remainder of the analyses via SPSS 28 for Windows.

3. Results

3.1. Sample characteristics

The average annual incidence of new patients was 18/1000 persons of the same age in OD and 15/1000 persons of the same age in CG. The mean age at the time of onset in adolescent psychiatric services was 16.1 years in OD and 16.3 years in CG. In OD, 68 % of the patients were female, while in CG the figure was 64 %. In OD, a lower proportion of patients had been placed outside the home prior to the initiation of psychiatric care, and the average time spent in foster care was shorter (Table 1).

In line with the main premise of OD-based services, the proportion of psychiatric diagnoses within the first follow-up year was significantly lower in OD as compared to CG, as follows: for any F-diagnosis, 5 % vs. 65 %; for F1, 1 % vs. 3 %; for F2, 1 % vs. 4 %; for F3, 3 % vs. 28 %, and for F4, 1 % vs. 23 %. Out of these diagnoses, the statistically significant ($p < 0.001$) hazards for out-of-home interventions were highest for psychosis (hazard ratio [HR]: 5.2 (95%CI: 4.9–5.5) and substance abuse disorder (HR: 2.8, 95%CI: 2.8–3.3), followed by depression (HR: 1.7, 95%CI: 1.6–1.7). Since the propensity scores including depression would have made the SIPT weights unstable due to the difference in diagnostic procedures, the diagnostic distribution for SIPTW was adjusted only for psychosis and substance abuse disorder. Having applied this procedure there were no further differences in the baseline characteristics, and the sample sizes of both groups remained the same (Table 1).

3.2. Primary outcome

In the OD group, 27 (4 %) and in the CG group 1952 (4 %) adolescents had been placed outside the home at the start of their psychiatric treatment. These were thus censored from the time-to-first- event analysis.

Table 1
Demographic and clinical characteristics.

	Non-matched sample			Inverse probability of treatment-weighted sample		
	OD <i>n</i> = 780	CG <i>n</i> = 44,088	<i>p</i>	OD <i>n</i> = 780	CG <i>n</i> = 44,088	<i>p</i>
Baseline characteristics						
Age (mean (sd))	16 (2)	16 (2)	0.01	16 (2)	16 (2)	0.42
Gender, female	531 (68 %)	28,148 (64 %)	0.01	492 (63 %)	28,180 (64 %)	0.63
Foster care prior to onset (yes)	45 (6 %)	3511 (8 %)	0.02	54 (7 %)	3505 (8 %)	0.29
Days in foster care prior to onset (mean (sd))	59 (380)	70 (387)	0.42	67 (411)	69 (387)	0.86
Psychosis within first treatment year	<5 (<1 %)	1754 (4 %)	<0.001	30 (4 %)	1727 (4 %)	0.92
Substance abuse within first treatment year	<5 (<1 %)	1154 (3 %)	<0.001	20 (3 %)	1138 (3 %)	0.98
Out-of-home interventions						
Hospital admissions			<0.001			<0.001
None	675 (86 %)	31,232 (71 %)		639 (82 %)	31,256 (71 %)	
1	67 (9 %)	6935 (16 %)		99 (13 %)	6929 (16 %)	
2	11 (1 %)	1968 (5 %)		17 (2 %)	1964 (5 %)	
3 or more	27 (4 %)	3953 (9 %)		26 (3 %)	3939 (9 %)	
Average in hospital (days) (mean(sd)) ^a	59 (106)	105 (242)	<0.001	52 (92)	104 (242)	<0.001
Involuntary admissions	36 (5 %)	4710 (11 %)	<0.001	47 (6 %)	4437 (10 %)	<0.001
Foster care placements (any)	61 (8 %)	4390 (10 %)	0.04	76 (10 %)	4380 (10 %)	0.86
Average in foster care (mean (sd)) ^a	760 (614)	727 (614)	0.70	872 (729)	728 (614)	0.09
Institutional foster care placements	47 (6 %)	3378 (8 %)	0.09	60 (8 %)	3371 (8 %)	0.96
Average in institutional foster care (mean (sd)) ^a	479 (504)	486 (445)	0.91	492 (472)	486 (444)	0.46
Other foster care placements	33 (4 %)	2525 (6 %)	0.07	42 (5 %)	2519 (6 %)	0.59
Average in other foster care (mean (sd)) ^a	616 (515)	722 (468)	0.17	860 (513)	614 (515)	0.02
Involuntary foster care placements	8 (1 %)	736 (2 %)	0.16	9 (1 %)	734 (2 %)	0.27
Supportive housing	15 (2 %)	2329 (5.3 %)	<0.001	17 (2 %)	2321 (5 %)	<0.001
Average in supportive housing (mean (sd)) ^a	195 (506)	195 (368)	0.99	140 (405)	194 (368)	0.53

sd: standard deviation.

^a including only adolescents with the out-of-home intervention in question during follow-up.

As hypothesized, treatment commenced under OD was a statistically significant predictor ($p < 0.001$) of increased time to an out-of-home intervention (adjusted hazard ratio [aHR]: 0.61, 95%CI: 0.52–0.72) as compared to CG.

Out of those adolescents who were discharged from their first out-of-home intervention, 57 (36 %) in OD and 7607 (48 %) in CG were re-admitted or re-placed outside the home at some point during the follow-up. OD was associated at a statistically significant level with an increased time to a second out-of-home intervention after discharge from the first out-of-home intervention (aHR: 0.75, 95% CI: 0.58–0.96, $p < 0.05$).

3.3. Secondary outcomes

Out of all adolescents who came to the treatment during one calendar year, on average 3.6 per 1000 same aged adolescents of the catchment area (95%CI: 3.0–4.3) in OD and 5.1 per 1000 same aged adolescent in rest of Finland (95%CI: 4.8–5.3) in CG were treated outside the home at some point in the 10-year follow-up. Over the entire follow-up, the proportion of adolescents who had out-of-home interventions was significantly lower in OD as compared to CG.

There were higher re- and involuntary admission rates to psychiatric inpatient treatment in the CG than under OD. In the CG there were also statistically significantly more adolescents receiving supportive housing during the follow-up (Table 1). OD and CG showed no statistically significant differences in out-of-home placements to an institution or other foster care, or in the total time spent in foster care.

Tables 2 and 3 present the within-group comparisons of those who had been hospitalized and/or placed outside the home during follow-up. In both groups (OD and CG) those who had received hospital treatment were also more likely to have one or more placements outside the home (Table 2). Overall, adolescents who had received out-of-home interventions showed on average more use of psychiatric services, including outpatient visits and use of psychiatric medication, indicating overall greater symptom severity. These adolescents were also more likely to be still receiving treatment and disability allowances at the end of the 10-year follow-up. In the CG, adolescents who were hospitalized or who had one or more placements outside the home were also more likely to have died from suicide during the 10-year follow-up, as compared to those whose treatment was conducted entirely in the community setting. In OD there were no statistically significant differences in the mortality ratio between those who were placed or hospitalized outside the home as compared to those who were not (Tables 2 and 3).

4. Discussion

This longitudinal register-based study aimed to evaluate how adolescents' mental health treatment commenced under Open Dialogue-based (OD) mental health services fulfilled one of the main premises of approach; community-based mental health treatment for young people and their families in their own living environments. The results supported the main hypotheses, indicating that via an OD-based service arrangement it is possible to mobilize care teams and social networks such that there are fewer out-of-home interventions than under treatment commenced under the standard mental health care service. The findings are consistent with previous studies, in which OD has been associated with significantly lower hospital admission rates in the treatment of psychosis than under standard psychiatric care (Bergström et al., 2018). There were no statistically significant differences in foster care placements; however, the results indicated that via OD, adolescent mental health services can be provided without a regional adolescent psychiatric ward, and without increasing the overall usage ratio of institutional foster care placements or other out-of-home interventions.

Table 2
Demographic and clinical characteristics of those with one or more hospital admissions.

	Open Dialogue Group		<i>p</i>	Comparison Group		<i>p</i>
	Hospital admission (s) <i>n</i> = 97	No hospital admissions <i>n</i> = 683		Hospital admission (s) <i>n</i> = 11,985	No hospital admissions <i>n</i> = 32,103	
Gender, male	31 (32 %)	218 (32 %)	0.99	4513 (38 %)	11,427 (36 %)	<0.001
Age (mean (sd))	16.2 (2)	16.3 (2)	0.69	16 (2)	16.1 (2)	0.002
Primary diagnoses during follow-up						
F10–19	15 (16 %)	7 (1 %)	<0.001	2112 (18 %)	863 (3 %)	<0.001
F20–29	18 (19 %)	7 (1 %)	<0.001	3401 (28 %)	612 (2 %)	<0.001
F30–39	62 (64 %)	85 (12 %)	<0.001	8278 (69 %)	11,246 (35 %)	<0.001
F40–47	48 (50 %)	89 (13 %)	<0.001	5864 (49 %)	11,297 (35 %)	<0.001
Other	57 (59 %)	53 (8 %)	<0.001	7175 (60 %)	8936 (28 %)	<0.001
Foster care placements during follow-up	17 (18 %)	44 (6 %)	<0.001	2139 (18 %)	2251 (7 %)	<0.001
Psychiatric medication	82 (85 %)	286 (42 %)	<0.001	10,631 (89 %)	18,213 (57 %)	<0.001
<i>N</i> of outpatient visits (mean (sd))	74 (77)	18 (30)	<0.001	81 (110)	24 (41)	<0.001
Death	<5 (<5 %)	8 (1 %)	0.46	362 (3 %)	358 (1 %)	<0.001
Suicide	<5 (<5 %)	<5 (<0.7 %)	0.513	205 (2 %)	127 (0.4 %)	<0.001
Disability allowance at the end of the follow-up	23 (24 %)	32 (5 %)	<0.001	2924 (25 %)	1962 (6 %)	<0.001
Treatment contact at the end of the follow-up	61 (63 %)	178 (26 %)	0.001	7046 (59 %)	9708 (30 %)	<0.001

Table 3
Demographical and clinical characteristics of those with one or more foster care placements.

	Open Dialogue group		p	Comparison group		p
	Foster care placement(s) n = 61	No foster care placements n = 719		Foster care placement(s) n = 4390	No foster care placements n = 39,698	
Gender, male	21 (32 %)	40 (32 %)	0.66	1679 (38 %)	14,261 (36 %)	<0.001
Age	15 (1)	16(2)	<0.001	14 (1)	16 (2)	<0.001
Primary diagnoses during follow-up						
F10–19	6 (10 %)	16 (2 %)	<0.001	705 (16 %)	2270 (6 %)	<0.001
F20–29	<5 (<8 %)	24 (3 %)	0.98	527 (12 %)	3486 (9 %)	<0.001
F30–39	9 (15 %)	138 (19 %)	0.39	2077 (47 %)	17,447 (44 %)	<0.001
F40–47	18 (29 %)	119 (17 %)	0.01	1813 (41 %)	15,348 (39 %)	<0.001
Other	16 (26 %)	94 (13 %)	0.005	2772 (63 %)	13,339 (34 %)	<0.001
Hospital treatment during follow-up	17 (28 %)	80 (11 %)	<0.001	2139 (49 %)	9846 (25 %)	<0.001
Psychiatric medication	31 (51 %)	337 (47 %)	0.55	3122 (71 %)	25,722 (65 %)	<0.001
N of outpatient visits (mean (sd))	29 (32)	24 (44)	0.4	46 (70)	39 (72)	<0.001
Death	<5 (<8 %)	9 (1 %)	0.79	108 (3 %)	612 (1 %)	<0.001
Suicide	<5 (<8 %)	<5 (<0.7 %)	0.61	42 (1 %)	290 (0.7 %)	<0.001
Disability allowance at the end of the follow-up	<5 (<7 %)	51 (7 %)	0.87	503 (12 %)	4383 (11 %)	0.32
Treatment contact at the end of the follow-up	19 (31 %)	220 (31 %)	<0.001	1872 (43 %)	14,882 (38 %)	<0.001

It should be noted that a decrease in out-of-home-interventions does not necessarily imply a favourable outcome, especially if the situation in the home is challenging, or even life-threatening. Nevertheless, if out-of-home interventions can be safely decreased overall, this could potentially bring many benefits to individuals and society, including significant cost savings and a lessening of the well-known risk factors associated with out-of-home interventions. These include the instability of placements and living environments, disrupted attachment patterns, and coercive psychiatric treatments, as well as other negative factors associated especially with institutional settings. It can therefore be further hypothesized that by emphasizing and resourcing more systemic approaches, a decrease in out-of-home interventions may mediate in the previously-reported favourable outcomes and potential cost savings of OD-based approaches in the treatment of young people with mental health difficulties (e.g. Bergström et al., 2022; Buus et al., 2019).

In line with above observations, adolescents with out-of-home interventions demonstrated poorer long-term outcomes as compared to adolescents who were treated entirely in a community setting. Nevertheless, in addition to the potential iatrogenic effects associated with out-of-home interventions, it is essential to consider that the decision to utilize such interventions may have been influenced by underlying factors or characteristics of the adolescents, which could also impact their long-term outcomes. As within-group also indicated, individuals with more severe mental health conditions or complex psychosocial challenges might have been more likely to receive out-of-home interventions. Due to potential confounding by indication and observational nature of this study, the clinical significance and causality of the observed associations require further studies with a more robust design.

5. Limitations

The Finnish registers enabled the inclusion of all adolescents who received psychiatric treatment in Finland within a predetermined timeframe. The results thus offered ecologically valid information on out-of-home placements and psychiatric inpatient treatment after the initiation of psychiatric care. Finnish registers are also considered to be valid and reliable sources of information (Miettunen et al., 2011). Even though they were not developed for research purposes and some inaccuracies may occur, the data sources should include information on all out-of-home placements and inpatient hospital treatment periods during the follow-up years.

There are nevertheless some limitations. First of all, it is possible that there are unobservable regional differences affecting the findings, independently of the particular treatment approach. We were not able to control for these factors, given that OD covered the entire region. Thus, replication from another catchment area where OD is comprehensively implemented would be required to ensure generalizability of the findings.

Secondly, we were not able to fully ensure the comparability of the groups, since diagnoses were not regularly used under OD, and we lacked other reliable measurements on onset symptom severity. Nevertheless, this limitation was compensated for by focusing on nationwide observation in which we non-selectively included all adolescents who required mental health services in Finland in the predetermined timeframe. At the same time, it should be noted that even though we were able to reliably adjust for observable baseline characteristics and for those primary diagnoses with the highest hazard for the outcomes of interest, there remain possibilities for residual confounding. Future research should also consider including and controlling for more detailed demographical characteristics of adolescents and their families.

6. Conclusion

The Open Dialogue approach for adolescents is associated with a lower usage ratio of out-of-home interventions as compared to

treatment commenced under standard care. This has the potential to bring cost savings and to lessen many negative effects associated with out-of-home interventions; however, due to limitations in the data, the clinical significance of these findings merits further studies.

Declaration of competing interest

None.

Data availability

The authors do not have permission to share data.

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