

Advances in community treatment of eating disorders: home treatment for child and adolescent anorexia nervosa[†]

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Abstract

Over recent decades, for young patients with anorexia nervosa (AN), efforts have been made to develop alternative treatments at home to reduce long hospital stays or to avoid admissions altogether. This article explores the motivation for developing home treatment for this specific patient group as an advance in community treatment. Two main routes of home treatment have been developed: home treatment as an "add-on" to outpatient treatment and "stepped-care" home treatment after short inpatient treatment. Both treatment approaches are discussed in this article. Pilot studies with small sample sizes have provided evidence for the safety, feasibility and success of both home-treatment approaches for AN in children and adolescents with the help of their families. Home treatment is emerging as a promising strategy for avoiding hospital admissions and reducing the duration of hospital stays. However, even though the existing research so far is promising, further validation through rigorous multi-centre, randomised, controlled trials with larger sample sizes and comprehensive follow-up assessments is warranted.

Keywords: anorexia nervosa, eating disorder, child and adolescent, parental involvement, home treatment, community-based treatment

Abbreviations: AN = anorexia nervosa; ED = eating disorder; FBT = family-based therapy; IPT = inpatient treatment; RCT = randomised controlled trial; OPT = outpatient treatment; DPT = day-patient treatment

1. Background

Home treatment is a comprehensive approach to treating individuals with mental disorders by providing direct support within a patient's home environment. Emerging in response to the need for a reduction in the cost and burden associated with expensive and often prolonged inpatient treatment (IPT), home treatment has gained enormous popularity within recent decades (1–3). Moreover, the development of psychiatric home treatment aimed at mitigating the adverse effects of extended hospital stays has been particularly pronounced among children and adolescents (4). Home treatment involves regular and frequent visits to a patient's home, realised by a multidisciplinary team, with active engagement of family members, typically spanning a duration of three to six months and ensuring 24/7 availability for potential crises (for example, (1, 5)).

Home treatment programmes specifically for child and adolescent psychiatric disorders have been developed since the 1980s (for example, (6)). These programmes aim to care for patients in acute psychological crises with the objective of averting IPT (for example, (2, 7–10)) or, alternatively, as a stepped-care approach subsequent to hospital stays to transition from IPT to outpatient treatment (OPT) to shorten inpatient stays and stabilise progress (for example, (11, 12)). Both methods of home treatment, acute OPT to prevent IPT and a stepped-care intervention to shorten IPT, have demonstrated success for emotional and behavioural disorders (for example, (13)). Additionally, home treatment is associated with greater cost-effectiveness, increased patient satisfaction and a decline in admissions or reduction in the length of IPT (2, 5, 11, 14).

Data regarding eating disorders (EDs) are limited. In addition to the small number of individuals with anorexia nervosa (AN) included in a broader randomised controlled trial (RCT) investigating various child and adolescent psychiatric disorders (11), to our knowledge, only a few single case and pilot studies of adolescents with AN have investigated the effectiveness of home treatment for patients with from EDs (8, 12, 15, 16). Consequently, despite the promising results from these first reports and the apparent safety of this treatment strategy, home treatment for EDs remains an experimental approach that has not yet been integrated into any national ED guideline. Furthermore, to our knowledge, this technique has thus far been applied only within the treatment of children and adolescents with AN, with limited application to individuals with other EDs or adults. Given the scarcity of reports on home treatment programmes for a broader spectrum of individuals with EDs, this article concentrates on summarising the existing results and depicting the initial experiences of implementing home treatment for children and adolescents specifically dealing with AN.

[†] This topic and the results of the pilot studies have been extensively described in the following chapter: Zielinski-Gussen I, Dahmen B, Herpertz-Dahlmann B. Home Treatment for Eating Disorders. In: Robinson P, Wade T, Herpertz-Dahlmann B, Fernandez-Aranda F, Treasure J, Wonderlich S (eds.) *Eating Disorders An International Comprehensive View*. Springer. London, UK (2022).

2. Motivation for developing a home treatment programme for child and adolescent AN patients

For children and adolescents with AN, OPT is the preferred approach in numerous healthcare systems. Nevertheless, over the last decade, a notable rise in the number of child and adolescent patients with AN admitted to hospital has been observed in various European countries, including the UK (17), with a further escalation during the COVID-19 pandemic (18-21). In the USA, the demand for residential treatment for AN patients has significantly increased, partly because IPT in the USA typically focuses on short-term medical stabilisation (22).

Despite IPT still being considered the gold standard in many European countries for severe AN (23, 24), young patients often perceive hospitalization as coercive, leading to potential delays or even refusals of hospital admissions (25). Additionally, even though IPT is often effective at stabilising weight, it frequently fails to successfully modify specific ED behaviours, such as the "drive for thinness" (26). A considerable number of adolescents with AN face IPT readmission within one year of their previous hospital treatment (27, 28). Furthermore, prolonged IPT contributes to severe social impairments in patients with AN by separating them from their family and peer groups (29).

Recently, efforts have been made to create alternatives to (long) IPT. Therapeutic approaches from the USA and the UK have shown that involving parents in treatment significantly improves therapeutic success when treating children and adolescents with EDs. The best evidence of a successful outcome with this approach is from so-called family-based therapy (FBT), which was primarily developed as an outpatient approach for young patients suffering from AN (30). FBT is based on the idea that the caregivers of patients take on crucial co-therapeutic functions and take the lead in refeeding their children. Controlled studies have demonstrated that in the short term, compared to individual OPT, FBT is more effective in achieving weight gain (31), although its greater effectiveness in long-term outcomes is less evident (32). Furthermore, a recent pilot study demonstrated that outpatient FBT seems to be a safe and feasible treatment alternative for two-thirds of adolescent AN patients eligible for IPT (33). The success of involving parents, as demonstrated by FBT, has had a significant impact on the development and establishment of new therapeutic approaches.

In addition to improving OPT to prevent IPT, stepped-care approaches have been implemented for patients with severe AN to shorten IPT stays, using a gradual transition to less intensive treatment settings such as day-patient treatment (DPT) settings (34, 35). In an RCT with adolescent patients, following a short IPT stay for somatic stabilisation, the treatment effects of DPT were comparable to continued IPT (34). A year after the start of DPT, a similar increase in weight and mental development was observed compared to that observed after IPT (34). A follow-up study revealed even more positive outcomes after 2.5 years: DPT patients had significantly greater weights and lower rates of rehospitalisation than IPT patients (36). Furthermore, DPT has been indicated to be more cost-effective and superior to IPT for specific outcomes, such as psychosexual development and mental health (34, 37). Factors such as more intensive and earlier involvement of the family, along with active practice in the patients' familiar environments, were identified as crucial for achieving a more favourable outcome (38). However, despite the lower rehospitalisation rate than that following IPT, the rehospitalisation rate of DPT is still considered high, with approximately 30% of patients experiencing rehospitalisation within 2.5 years (39). Despite the early involvement of the family being considered a successful element of the treatment, parents as well as patients communicated challenges in the "difficult" transition from the hospital to the home environment. This aspect is of particular interest as it is generally known that factors responsible for the sustainment of specific AN behaviours are entrenched within everyday habits in patients' home environments (40). Thus, changes can be best achieved within the patients' community and family environments. Given the promising effects of more intense and early involvement of the family for children and adolescents with AN and active promotion of healthy eating within the direct patient environment, the necessity of developing specific home treatment programmes has been emphasised multiple times for this patient population (34, 41).

3. Home treatment programmes for children and adolescents with AN

3.1. Integrating home treatment as an "add-on" to outpatient FBT

The Department of Child and Adolescent Psychiatry at the University of Zurich, Switzerland, as well as independently the Department of Psychiatry of the University of Pittsburgh, United States, have directed their efforts towards enhancing existing OPTs to prevent IPT (8, 15, 16). This work suggests that home treatment could serve as a supportive "add-on" to outpatient FBT. In this approach, additional home treatment sessions are delivered to adolescent patients who undergo manualised FBT for AN (42). This treatment programme starts immediately after referral and lasts 10 to 16 weeks, incorporating, depending on the program, one to four individual home treatment sessions per week alongside regular FBT sessions (8, 16). Each session lasts approximately 60 minutes, with the frequency of home appointments tailored to the individual needs of the patients and their families. Active participation of at least one significant person from the patient's environment (for example, a parent or sibling) is required during each session (8).

As well as the certified FBT supervisor, who offers monthly supervision, the home treatment team contains a trained nurse and an FBT therapist (8). Within the work of the Department of Child and Adolescent Psychiatry at the University of Zurich, the home treatment sessions are exclusively conducted by a trained home treatment healthcare nurse who participates in at least one FBT session in which the goals for the home treatment are established (for example,

support in meal preparation or meal supervision). Home treatment nurses undergo specific training in FBT for adolescents with AN (42) and receive specialised training in home treatment strategies, encompassing general communication and mealtime support strategies (8, 15). In addition to their initial participation in the FBT session, the home treatment nurse regularly communicates with the FBT therapist throughout the treatment period, either in person or by phone or email.

At the onset of the home treatment intervention, ED-maintaining factors at both the family interaction level (for example, parental criticism) and the individual patient level (for example, frequent self-weighing) are evaluated by the FBT therapist (8, 15). Following this assessment, the precise goals for the home treatment programme (for example, complete caregiver responsibility for meal preparation) are determined through a collaborative process involving the caregivers, the patient, the FBT therapist and the home treatment nurse. Subsequently, the supervised home treatment nurse provides the home treatment intervention, addresses crucial issues (for example, disregarding agreements related to meal supervision), participates in family meals and provides guidance to the patient and their caregivers on overcoming specific interaction challenges (for example, family communication during mealtimes, food preparation).

The primary goal of these home sessions, which are conducted in addition to outpatient FBT, is to offer practical support to caregivers, strengthening their ability to refeed their child. Additionally, they aim to enhance both the family's and the patient's resilience factors and support resources, such as assisting patients to be reintegrated in their social lives (for example, engaging in hobbies, socialising and eating with friends).

3.1.1. Pilot results

To assess the feasibility and efficacy of the proposed supplementary home treatment in conjunction with FBT for adolescents with AN, a pilot study with a waitlist control design was conducted (8). The study included all adolescents with AN that were referred to the involved outpatient clinic between 2017 and 2019. Among the participants, 45 patients underwent FBT combined with home treatment and 22 patients exclusively received FBT while awaiting additional home treatment.

The results showed that both treatment cohorts exhibited noteworthy weight gain after the three-month intervention. Moreover, the number of patients who met the diagnostic criteria for AN and exhibited ED psychopathology decreased in both groups after three months of treatment. However, the group receiving home treatment combined with FBT demonstrated a greater body mass index increase. Additionally, the menstrual cycle resumed in a greater percentage of the female patients receiving home treatment, which is a significant measure of recovery in AN. Remarkably, none of the individuals in the combined treatment group required transfer to IPT, whereas three patients in the control group (13.6%) required hospital admission within the three-month period.

The findings suggest that incorporating home treatment as an adjunct to FBT is a feasible and effective approach for treating AN in adolescents, augmenting the impact of FBT. However, a follow-up study is essential to explore long-term effects and the results should be validated through an RCT, which is currently ongoing (43).

Moreover, the Department of Psychiatry of the University of Pittsburgh has also initiated a pilot study adding home treatment to FBT (16, 44).

3.2. Home treatment with a stepped-care approach following IPT

The research team at the Department of Child and Adolescent Psychiatry of the University of Aachen, Germany, devised a stepped-care home treatment approach for adolescents with severe AN admitted for IPT (12). In this stepped-care strategy, patients undergo an initial inpatient stabilisation period lasting five to eight weeks for somatic and psychological stabilisation, followed by 12 to 16 weeks of home treatment. Persistent severe ED behaviour (for example, inability to eat independently or daily purging), inadequate weight gain during the inpatient stabilisation phase or the presence of ongoing serious psychiatric or somatic comorbidities (for example, severe self-injurious behaviour or suicidality) at the intended discharge time preclude the initiation of home treatment; in such cases, IPT is continued. A distinctive feature of home treatment is that the same therapists who care for the patient during the inpatient stay continue the treatment at home. This significantly facilitates the introduction of treatment, as the therapeutic team is already familiar to the patient and family, making it easier for many families to "open the door" to the therapists.

The inpatient stabilisation phase is considered the first step within this stepped-care approach. This phase entails optimal preparation for patients and their caregivers to manage their EDs at home. Alongside participating in a dedicated psychoeducational group, caregivers actively participate in their child's treatment. While the children are still in the hospital, parents or primary caregivers engage in joint family meals and shared psychotherapeutic sessions. During family meals, a nutritional therapist or nurse assists parents in supporting their children during subsequent meals at home. Unlike FBT, joint family meals are practised multiple times until caregivers (and the patient) have gained sufficient experience. As patients achieve medical stability, they gradually spend more time at home. Caregivers supervise and support the patients in adhering to meal plans and refraining from weight-reducing practices (for example, excessive exercising). Towards the end of the inpatient stabilisation period, the practical implementation of

home treatment and the individual goals of this therapy are discussed with the patients and their families. By the time of discharge, patients must independently consume all meals with support from their then trained caregivers, and the target weight should be determined and communicated.

The second step of this treatment approach is initiated by the home treatment phase (12–16 weeks). Given that the risk of relapse is typically highest in the period immediately after discharge (45), the implementation of home treatment follows a diminishing pattern. In the initial phase (weeks 1–8 post-discharge), the multidisciplinary team conducts three to four weekly visits to the patient's family home. The multidisciplinary team includes an individual therapist (child and adolescent psychiatrist or psychotherapist), an experienced nurse, a nutritional therapist and other specialists (for example, social workers, occupational therapists, physiotherapists). Weekly supervision by an experienced child and adolescent psychiatrist ensures team cohesion. Each professional has a specific therapeutic role within the home treatment programme, tailored to the family's needs, whether through nutritional advice or assistance because of family conflicts. To meet specific needs, the different professionals (for example, nutritional therapists for severe eating problems, social workers for severe problems in structuring a day with age-appropriate activities) visit the families. The psychotherapist attends every week for continued psychotherapy (enhanced cognitive behavioural therapy, CBT-E). One session per week must be planned with both the patient and family together. During these initial two months, the focus is on promoting weight gain by addressing ED symptoms and aiding parents in managing food intake.

The subsequent phase (weeks 9–16 post-discharge) primarily aims to support the patients and their caregivers in rebuilding social connections (for example, engaging in activities with friends, participating in age-appropriate events and gradually attending school), fostering patient autonomy and, if needed, initiating additional support through community services (for example, youth welfare services). Initially (weeks 9–12), therapists typically maintain two home appointments per week, reducing to one visit per week in the final phase of home treatment (weeks 13–16). In addition to regular home visits, patients participate in weekly group therapy sessions. As well as addressing AN-specific concerns, these sessions delve into the practical challenges of everyday life with AN (for example, engaging in social activities with friends). The programme also offers a 24/7 hotline for medical or crisis intervention.

In summary, this home-based stepped-care treatment approach aims to provide direct and increased support for patients and caregivers in their home environments, facilitating their reintegration into age-appropriate activities. The ultimate goal is to restore normal participation in adolescent as well as family social lives, along with normalising nutrition, weight, cognitions, self-esteem and (eating) behaviour.

3.2.1. Pilot results

Between 2017 and 2019, a pilot study was conducted to examine the trajectory and one-year follow-up of this stepped-care approach for patients with severe AN (12). The inclusion criteria comprised patients with AN admitted for IPT for the first or second time (with the majority having undergone unsuccessful OPT), patients residing with at least one parent and within a one-hour commute from the hospital, patients lacking severe mental or physical comorbidities, and patients possessing an IQ of at least 80.

The sample consisted of 22 adolescent patients, all of whom exhibited significant weight gain from admission to the initiation of the home treatment programme. In one patient, home treatment was prematurely terminated due to persistent severe ED symptoms and IPT was successfully continued. The remaining 21 patients showed a continued weight increase during the home treatment phase which was sustained from the end of home treatment to the one-year follow-up. Importantly, no serious adverse events were reported, underscoring the safety of this approach. Evaluation further revealed a marked improvement in ED behaviour and general psychopathology as well as high treatment satisfaction (12). The reduction in ED psychopathology paralleled improvements observed in a stepped-care DPT approach for adolescents with AN (34). Additionally, patients' motivation for change significantly increased during treatment and remained stable up to the one-year follow-up (46). Furthermore, parents demonstrated enhanced skills in managing their child's ED throughout treatment, coupled with a decrease in perceived burden and depressive symptoms (12, 47).

It was concluded that this stepped-care approach, which involves home treatment following brief IPT, appears to be a safe and promising strategy for shortening IPT stays and potentially enhancing longer-term outcomes in adolescent AN patients. However, these findings need confirmation through a RCT with a more extensive sample size. Currently, a large multicentre RCT with more than 150 patients is being conducted (funded by the Federal Joint Committee, Germany [G-BA innovation fund], grant number 01VSF20006).

4. Conclusion

In the realm of treating adolescents with AN, home treatment has emerged as a promising strategy for averting hospital admissions and reducing the duration of hospital stays. Nevertheless, the existing body of related research remains limited, necessitating further validation of the aforementioned outcomes through larger controlled investigations. Rigorous RCTs with substantial sample sizes and comprehensive follow-up assessments are imperative to corroborate

these pilot findings, extending beyond AN to encompass the broader spectrum of EDs.

Furthermore, specific questions regarding the application of the different home treatment programmes still need to be explored in depth. One example is the question of whether specific patients or families might profit more from home treatment programmes, while others might not. Another interesting research question concerns the impact of this treatment setting on other family members. Next to the primary caregiver burden of, and skills in, handling the child's ED, the impact on the siblings should be assessed. Also, the satisfaction and workload of the members of the multidisciplinary home treatment teams should be assessed in detail to determine the feasibility of this alternative treatment setting.

The goal of establishing these new and tailored home treatment settings for child and adolescent AN as a progress in community treatment should be to further improve the prognosis for this debilitating disorder. More children and adolescents should be considered cured before entering adulthood and, if possible, no longer have any effects of ED symptoms in later life.

Declarations of interest

The authors declare that they have no conflicts of interest.

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