No boundaries: a 2 year experience in a specialized youth mental health care program in the Netherlands

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Abstract
Aim: Young people around the age of 18 receiving mental health care usually face the transition from child and adolescent (CAMHS) to adult mental health services (AMHS) bringing the risk of disruption in continuity of care. Recognizing the importance of early intervention in this vulnerable life-period, this study aims to emphasize the importance of a client-centred approach and continuity of care for this age group. For a deeper understanding of the specific needs of this group, the working method of a Dutch youth mental health (YMH) team working in a secondary mental health care setting is described, including some clinical characteristics and treatment results of patients who accessed this service.

Methods: Data consist of a detailed description of the working method of the YMH team combined with clinical characteristics of all patients aged 15-25 years accessing the services of the YMH team over a two-year period.

Results: The YMH team incorporated suggestions of earlier research into a client centred treatment. Key elements were multidisciplinary meetings, transcending diagnosis, flexibility and collaboration with other care providers. Clinical records showed a complex patient population and significant treatment effect.

Conclusions: The group of emerging adults accessing the YMH team can be described as a patient group with a high diversity and complexity of disorders and problems. Continuity of care was met when patients turned 18, allowing treatments to be successfully performed by the same team of professionals using a client-centred approach.

KEYWORDS
adolescent, continuity of patient care, early intervention, mental health

1 | INTRODUCTION

Adolescence forms a period of high risk for the emergence of serious mental disorders (Singh, 2009). Approximately three-quarters of mental disorders emerge before the age of 25 (Kessler et al., 2005). Young people (aged 12 to 25) have the highest incidence and prevalence of mental disorders across the lifespan, and indeed mental disorders account for almost 50% of the total disease burden among young people (Pieris-Caldwell et al., 2007). Correspondingly, there is a growing body of literature that recognizes the importance and
effectiveness of early intervention in youth mental health (Corell et al., 2018; McGorry, 2015; McGorry et al., 2018).

The comprehensive mental health action plan 2013-2020 (World Health Organization, 2013) provides a framework for strengthening capacities in countries to address the mental health needs of children and adolescents. It encourages the adoption of a life-cycle approach in implementing mental health policies and strategies, taking into account the health and social needs at all stages of the life course. However, in many countries the mental health care system is rigidly divided into child and adolescent mental healthcare (CAMHS) and adult mental health care (AMHS). Transfer from CAMHS to AMHS usually takes place at 18 years. This division cuts right through the life-stage for youth as defined by the WHO, namely 15-25 years. A British multicentre study (Singh et al., 2010) even revealed that for the vast majority of service users, the transition from CAMHS to AMHS was poorly arranged, poorly carried out, and poorly experienced.

Bearing in mind the specific needs of youth, it should be noted that during this period, brain development has distinct features and plays a crucial role in further development. Longitudinal neuroimaging studies demonstrate that the adolescent brain continues to mature well into the 20s (Blakemore & Robbins, 2012; Johnson et al., 2009). This dynamic process influences behaviour and in this specific life-stage, decision-making and behaviour are highly dependent on the social and motivational context (Crone & Dahl, 2012).

Another characteristic of youth is that it is difficult to predict future development of mental (ill) health. Symptoms often fluctuate in severity, sometimes at a subthreshold level (Jones, 2013; Kessler et al., 2007; Yung et al., 1996), making it hard to diagnose a specific mental disorder. In addition, co-morbidities are highly prevalent, with percentages ranging from 60%, when referring to the presence of more than one psychiatric disorder (Pottick et al., 2014), to as much as 98%, when including also other presented psychosocial or environmental problems or needs (Social Exclusion Unit, Office of the Deputy Prime Minister, 2004). These characteristics show a high degree of complexity and variety in the development of psychopathology.

In sum, the above emphasizes the potential of (early) intervention, focussing on the crucial developmental period of 15-25 years, to greatly enhance mental health, wellbeing and productivity of young people (McGorry et al., 2014). Virenze, a mental health care organization in the Netherlands, aimed to do so and established a multidisciplinary youth mental health (YMH) team in Maastricht. Within the context of emerging integrated youth health care worldwide (Hetrick et al., 2017), the YMH team brings together CAMHS and AMHS, providing secondary care (Tier 3) (Appleton, 2000) including treatment of complex conditions.

This article aims to gain a better understanding of the specific needs of help seeking youth between 15 and 25 years facing mental health problems, by describing both working method of the innovative YMH team and clinical characteristics of its population. To explore the effectiveness of the YMH team, treatment effects are analysed. By contributing to ongoing evaluation and program description within youth mental health care, the present paper is of importance in supporting systems transformation.

2 | METHODS

2.1 | Subjects

Clinical characteristics of 158 patients aged 15-25 years who had been referred to the YMH team in Maastricht by their general practitioner, school doctor, or other health care professionals, were collected from the patient files. Data were collected retrospectively for a two-year timeframe between July 2013 (start of the team) and June 2015. The data set was anonymous. The local internal scientific committee approved of the study.

2.2 | Working method of the team

The YMH team can be described as a hybrid multidisciplinary team consisting of professionals from CAMHS and AMHS, and with different fields of expertise. The team included psychologists, psychotherapists, family therapists, psychiatrists, running therapist and a psychiatric nurse practitioner, to ensure comprehensive care and meeting complex needs. Fields of expertise comprised Cognitive Behavioural Therapy (CBT), Eye Movement Desensitization and Reprocessing (EMDR), Schema Focused Therapy, Systemic therapy, Psychoanalysis, Mindfulness-Based Cognitive Therapy (MBCT), Acceptance and Commitment Therapy (ACT), Pharmacotherapy and sessions aimed at gaining competences (regarding ADHD or emotion regulation disorders). These therapies were offered individually and/or in a group setting. The YMH team provided both brief, less intense treatment as well as specialized treatment, or a combination of both. Weekly multidisciplinary meetings with a cross-developmental stage and trans-diagnostic approach led to a personalized treatment plan per patient. Different professionals within the team worked together to execute and evaluate the specific treatment plan, and if needed (mental health care) partners from other (primary care) facilities were involved. The YMH team hereby adhered to a client-centred approach.

Continuity of care was met when diagnoses or patient needs changed or when patients turned 18, allowing the complete treatment to be performed by the same, multidisciplinary team of professionals.

2.3 | Measures

Patient sociodemographic characteristics comprised sex and age. Clinical characteristics comprised diagnoses according to the Diagnostic and Statistical Manual of mental disorders (DSM-IV-TR) (American Psychiatric Association, 2000) on axis I, II and IV. DSM-IV-TR diagnoses and Global Assessment of Functioning (GAF) scores (American Psychiatric Association, 2000) were assessed by the clinician using the Structured Clinical Interview for DSM-IV-TR axis I and/or II disorders (SCID-I and/or II) (First et al., 2002; First et al. 1997) and if indicated, further instruments such as the Diagnostic interview for ADHD in adults, version 2.0 (DIVA 2.0) (Kooij & Francken, 2010) and Autism diagnostic observation schedule, second edition (ADOS 2) (Lord et al., 2012) were conducted. To assess the intellectual capacity if indicated,
the Wechsler Adult Intelligence Scale IV, Dutch version (WAIS-IV-NL) (Pearson assessment & information BV, 2012b) was used, which is shown to be a reliable and valid instrument (Pearson assessment & information BV, 2012a).

To explore treatment effects, pre- and posttreatment routine outcome measurement (ROM) as well as GAF scores were used. In the Netherlands, ROM is part of standard care to determine symptom reduction aiming to measure treatment effect. The Brief Symptom Inventory (BSI), the 53-item version, (Derogatis, 1993) is a standard ROM, which uses patients’ self-reports, validated for individuals from 18 years onwards. All measures were administered in Dutch.

2.4 Procedure and analysis

Clinical data mentioned above were extracted from the patient files, compiled and analysed statistically using IBM SPSS Statistics software for Windows, version 23.0 (IBM Corp., Armonk, N.Y., USA). Firstly, to investigate clinical characteristics, frequencies were run on all disorder categories. To explore treatment effect, a repeated measures design was used comparing patients’ symptoms and functioning at the beginning and end of treatment by performing a paired samples t-test on pre- and post- BSI (mean score) and GAF measures. Furthermore, to investigate if there is a specific need for care based on sex, a split-plot ANOVA was conducted with sex as the independent variable and pre and post BSI scores as repeated measured dependent variable. The same was done for GAF as dependent variable. For all analyses, statistical significance was set at \( P < .05. \)

3 RESULTS

Between July 2013 and June 2015, the YMH team saw 158 patients with a mean age of 19 years when first accessing the team (range 15-25 years, \( SD = 2.40. \)) For 139 patients, including 55 males and 84 females, diagnoses were available. The most common clinical disorders were anxiety disorders, mood disorders, and disorders usually first diagnosed in infancy, childhood or adolescence (Figure 1). Anxiety disorders were somewhat distributed over the different disorders within this category, with generalized anxiety disorder and post-traumatic stress disorder occurring more often. Among mood disorders mainly depression was found. Of the disorders usually first diagnosed in infancy, childhood or adolescence, ADHD diagnoses were by far the most common, making up about two thirds of these diagnoses. Missing diagnoses were due to deferred decisions or end of treatment before the diagnosis was finalized.

About 7% of patients were diagnosed with a personality disorder, including cases of axis II comorbidity. It should be noted that in 48 cases there was a deferred diagnosis, typically on axis II, additional to a disorder already diagnosed. About 66% of the patients had more than one clinical disorder, and when including axis IV co-morbidity, this percentage even reaches 98%. On average patients received 2.22 clinical diagnoses plus 1.83 diagnoses on axis IV.

As shown in Table 1, almost all patients presented axis IV problems, and almost half of all patients showed two or more factors. The two most common axis IV factors, each seen in about two-thirds of the patients, were educational problems and problems with a primary support group.

A considerable number of patients, almost 10%, was found to have a low IQ and received the diagnosis of mental retardation or borderline intellectual functioning for the first time.

By June 2015, 116 patients were no longer in treatment. From 93 patients begin and end measures of GAF scores were available. Missing end scores are mostly explained by patients deciding to discontinue treatment, or due to unforeseen factors like for example moving. A paired samples t-test indicated that there was a significant difference between the GAF scores pre- treatment (\( M = 54.15, SD = 7.22 \)) and post- treatment (\( M = 65.61, SD = 10.33 \)), shown in Table 2. To investigate sex differences a split-plot ANOVA was conducted with pre- and post-GAF scores from males and females. The main effect of time was significant, \( F(1, 91) = 6.36, MSE = 50.46, P < .001, \) as was the effect of sex, \( F(1, 91) = 7.66, MSE = 100.26, P = .007. \) The interaction of these two factors was not significant, \( F(1, 91) = .06, MSE = 50.46, P = .808. \) Females generally showed lower pre- scores (meaning lower levels of functioning) compared to males, but there was a comparable improvement in GAF in both groups.

![Figure 1](attachment:image.png)
The same analysis was carried out on the BSI scores. Because the BSI only applies to patients of 18 years and onwards, both begin and end measures of the BSI were available for 45 patients (see Table 2). Again, the main effect of time was significant, $F(1, 43) = 6.36$, $MSE = .14$, $P < .001$, as was the effect of sex, $F(1, 43) = 6.36$, $MSE = .34$, $P = .015$. The interaction of these two factors was not significant, $F(1, 43) = 2.29$, $MSE = .14$, $P = .138$. This means that pretreatment, females generally scored higher (meaning worse) compared to males on the BSI, but over time, symptoms improved for both groups.

In short, results show a complex patient population with significant improved functioning post treatment.

| TABLE 1 | Factors on axis IV present in the patient group |
|---------|-----------------------------------------------|
| Factors on axis IV | Total of patients | Patients (%) | Total of diagnoses | Diagnoses (%) |
| Any psychosocial and environmental problem | 129 | 92.81 | 244 |
| Problems with primary support group | 85 | 61.15 | 85 | 33.46 |
| Problems related to the social environment | 29 | 20.86 | 29 | 11.42 |
| Educational problems | 89 | 64.03 | 89 | 35.04 |
| Occupational problems | 17 | 12.23 | 17 | 6.69 |
| Housing problems | 6 | 4.32 | 6 | 2.36 |
| Economic problems | 13 | 9.35 | 13 | 5.12 |
| Problems related to interaction with the legal system/crime | 2 | 1.44 | 2 | 0.79 |
| Other psychosocial and environmental problems | 3 | 2.16 | 3 | 1.18 |
| No diagnosis/factor on axis IV | 10 | 7.19 | 10 | 3.94 |

Note: Percentage reflects occurrence of factor/problem in patients of the Youth Mental Health team. Numbers add up to more than 100% due to co-morbidities.

| TABLE 2 | BSI and GAF measurements pre and post treatment |
|---------|-----------------------------------------------|
| N | pre M (SD) | post M (SD) | P-value |
| GAF | 92 | 54.15 (7.22) | 65.61 (10.33) | .001** |
| BSI | 45 | 1.01 (.62) | .46 (.45) | .001** |

Note: $M =$ mean, $SD =$ standard deviation. $GAF =$ Global Assessment of Functioning. $BSI =$ Brief Symptom Inventory.

*significant at a $P < .01$ level.

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4 | DISCUSSION

This study reported on the working method of an innovative specialized YMH team located in the Netherlands and on its patient characteristics, thereby supporting systems transformation.

4.1 | Working method

The working method of the YMH team demonstrated that, by being able to complete treatment within the same team of professionals and working transdiagnostically, continuity of care was met around the age of 18. The YMH team adhered to a client-centred approach by being flexible to adjust treatment to the complexity and changing needs of this patient group.

The above described complexity fits secondary mental health care, and seems an important follow-up to easy access services, like the integrated youth mental healthcare service Headspace in Australia (Hetrick et al., 2017), or @ease in the Netherlands (McGorry & Mei, 2018): indeed 40% of Headspace users are too complex and need referral to specialized services.

4.2 | Patient characteristics

Our findings support the need for a client-centred approach. Main diagnoses in the current study reflect previous research with anxiety, mood and behavioural disorders as most common diagnoses (Rickwood et al., 2014; Merikangas et al., 2010; Costello et al., 2005; Cooper & Singh, 2000; Tohen et al., 2000).

Our findings are in line with other studies of youth (15 to 25 years) where the percentage of patients with co-morbidities range from 60% (vs 66% in the present study), when comorbidity refers to the presence of more than one psychiatric disorder of mental healthcare service users (Pottick et al., 2014), to as much as 98% (as in the present study), when also other psychosocial or environmental problems or needs presented were included (Social Exclusion Unit, Office of the Deputy Prime Minister, 2004). Axis II diagnoses were often deferred. Therefore, our patients might have had more disorders than ascertained at that moment, making it likely that diagnoses remained underreported. This finding stresses the high complexity of mental health in youth and the need to use an array of expertise within a YMH team as well as organizations outside direct mental health care.

The high number of Axis IV factors reported is understandable since this is the age where people usually attend school or study elsewhere. Moreover, at this phase of life around puberty, individuals may encounter more relational problems with parents or family. An Australian study (Rickwood et al., 2014) found that a
considerable number of patients accessing specialized mental health care, reported relationships (11.4%) or school/work (6%) as main reason for seeking help. The "Breaking the Cycle" report (Social Exclusion Unit. Office of the Deputy Prime Minister, 2004) also lists homelessness, problems regarding education or work, crime, and poor housing as typical problems youth face. It seems likely that psychological problems or disorders are linked to psychosocial and environmental problems where effects and interaction in both directions are probable. Therefore, cooperating with, for example, care services that aim to support youth in daily life is of great value as these services can directly target the two most common axis IV factors in our study, namely educational problems and problems with a primary support group, each of which are seen in about two-thirds of the patients here.

Our findings show a relatively high percentage of low intellectual capacity, indicating the importance of awareness and screening of intellectual disability. While patients are usually screened for axis I and II disorders, intelligence is only tested after an indication or possibly stagnation of therapy. From previous research, it is well recognized that people with intellectual disability are more likely to suffer from mental health disorders compared to individuals with normal intellectual abilities and that those individuals with dual diagnoses may benefit from adapted treatment approaches (Hodapp et al., 2006).

4.3 | Treatment effect

To explore the effectiveness of the YMH team, treatment effects were analysed for the whole group of patients as well as for the two sex groups separately. Our results indicate an overall positive and significant improvement of patient symptoms given their BSI score (rated by the patient) and improved functioning, as indicated by higher GAF scores (rated by the clinician) at the end of treatment compared to the beginning. Although the BSI scores are only available for 18 years onwards, it is encouraging that results of the GAF scores are in line with the results of the BSI scores, as GAF was also administered for those patients younger than 18 years. Thus, both patients and professionals experienced improvement after therapy and patients' BSI scores seem to reach a comparable level to the general population (Beurs, 2006). These are excellent results given the complexity of problems and they support the integrated, client-centred approach of the YMH team.

Analysis of the two sex groups separately, does not seem to call for an immediate need for a sex-specific approach. Our patient group consisted of 40% males vs 60% females, which is a common finding in clinical samples (Rickwood et al., 2014; Vessey & Howard, 1993). Our results indicate that males started out with lower clinical scores, reporting less severe self-reported symptoms, than females. An explanation for the gender difference in clinical scores at the start might be that males, although suffering from possibly strong symptoms, are less likely to disclose mental health problems related to social stigma in line with their stereotypical roles. Females are more willing to disclose distressing information to others (Ward et al., 2007; World Health Organization, 2001) and ask for help. Even though the clinical scores initially differ, males and females show comparable improvement rates according to patients' own ratings and professionals' assessment.

4.4 | Limitations

Our findings are limited by the lack of a comparison group. Superiority of the YMH team approach could be demonstrated by comparing patients of a specialized YMH team to patients of mental health institutions that do not offer a special service for this group and adhere to standard CAMHS and AMHS procedures. A follow up study measuring long-term effects would be further enlightening. Furthermore, continuity would be necessary not only for treatment but also for diagnostic instruments and outcome measures to ensure quality and effectiveness in youth mental health (Kwan & Rickwood, 2015).

In summary, our description of the working method of the innovative YMH team and the clinical characteristics of its population, support the importance of continuity of care around the critical age of 18 and demonstrates beneficial effects of the described client-centred approach.

4.5 | Practical recommendations

This paper concludes by offering practical recommendations for YMH psychiatry in practice, based on the study results. Firstly, comorbidities in patients are common and they and their interaction should be considered including all diagnoses and other areas of concern. This includes special attention for intellectual disability since this has implications for choice of treatment and its effect. Our results suggest that due to co-morbidities, a multidisciplinary and comprehensive approach addressing the multitude and combination of disorders and problems seems more appropriate for youth, than working with separate care paths with specialized teams for different disorders.

Secondly, results suggest that YMH should include particular attention to psychosocial and environmental problems as they are closely linked to each other and call for an integral approach to understand and treat them. This also applies to educational problems, which are extremely frequent in this group and have far-reaching consequences for the individual.

It is important that YMH programs with continuous care around the age of 18 receive more attention and become the standard rather than the exception. Clinical disorders in youth do not respect age or diagnostic boundaries.

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