Preventive Strategies for Borderline Personality Disorder in Adolescents

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Opinion statement

Personality disorder has been shown to be common in adolescence and most notable for its continuity with and similarities to adult personality disorder. This has legitimized the diagnosis of personality disorder, particularly borderline personality disorder, in adolescence. The first wave of indicated prevention (targeting those showing early signs and symptoms) and early intervention (those with full-syndrome disorder) studies for borderline personality disorder in adolescence are notable for challenging fears about diagnosing and treating borderline personality disorder in young people, and demonstrating that appropriate diagnosis and intervention can lead to clinically meaningful improvements for patients. However, dropout rates from these interventions are high and the specific role for individual psychotherapeutic interventions within treatment programs is unclear. Common elements of structured, high quality early intervention for borderline personality disorder might also be effective and applicable to a variety of treatment settings, independent of individual psychotherapy. Given the limited evidence base for pharmacotherapy as a primary treatment for borderline personality disorder in adults, this form of treatment cannot be recommended in adolescents.

Introduction

The past two decades have seen increasing evidence establishing that personality disorder (aka personality pathology) is also a significant form of psychopathology

in adolescence [1••]. Personality disorder in this age group has been found to be continuous with personality disorder in adults and to be more notable for its

similarities in terms of phenomenology, structure, stability, validity, and morbidity. This knowledge has legitimized the diagnosis of personality disorder, particularly borderline personality disorder, in adolescence and has now been integrated into national guidelines for the management of borderline personality disorder [2, 3•], Section III of the DSM-5 [4], and will likely enter the

ICD-11 [5]. It has also given rise to the first wave of intervention studies for borderline personality disorder in this age group [6••]. These studies are most notable for challenging fears about the diagnosis and treatment of personality disorder in young people, demonstrating that appropriate diagnosis and intervention leads to clinically meaningful improvements for patients.

A lifespan developmental view of personality disorder in young people

Normal and abnormal personality have been shown to be part of a continuum and to change across the life course as a result of the interaction between heritable characteristics and environmental influences [1••]. Studies demonstrate that individuals' relative trait levels increase in consistency from infancy. Personality pathology is moderately stable during childhood, increases in stability from teenage to emerging adulthood and changes more slowly thereafter. Crucially, there is no sudden increase in trait stability in the transition from the teens into the 20s [7]. Studies in children and adolescents have also demonstrated a similar higher order structure to the personality dimensions that have been found in adulthood [8], and specific measures of personality pathology in children and adolescents and adults [9, 10] yield equivalent results. Longitudinal studies support the continuity of individual differences from early childhood to young adulthood [11] in the general population, but these longitudinal associations are only weak to moderate. Moreover, personality pathology in childhood and adolescence has been shown to be associated with clinical distress and/or psychosocial impairment, making it clinically significant, and early recognition of such pathology has the potential to alter its life course trajectory.

Personality disorder features appear to peak in the early teens and decline linearly from mid-teens to the late 20s [12]. Some of this decline is due to decreases in impulsivity, attention seeking and dependency, and increases in social competence and self-control that reflect normative change. Personality disorder features are moderately stable in adolescence, and this is similar to comparable studies in adults conducted over similar intervals. Adolescents with elevated personality disorder scores tend to have elevated personality disorder features during early adulthood, suggesting continuity of personality disorder from adolescence to adulthood, and one-fifth of individuals experience increases in personality disorder features over this time period. Overall, these findings suggest that child and adolescent personality pathology is the strongest predictor of young adult personality disorder, over and above common mental state disorders.

Borderline personality disorder can be diagnosed in young people

There is general agreement that personality disorder has its origins in childhood and adolescence, and this was made explicit in the operational definitions of the categorical personality disorders that were introduced in DSM-III [13].

Nonetheless, sections on disorders of childhood and adolescence in the DSM-5 [4] and ICD-10 [14] still make no mention of personality disorder [1••].

Borderline personality disorder usually presents clinically during the transition between childhood and adulthood and has the potential to disrupt the complex developmental tasks associated with this phase of life and the achievement of adult role functioning. Yet, diagnosing personality disorder prior to age 18 years remains controversial [15]. The DSM-5 and ICD-10 do not prohibit personality disorder diagnosis in adolescence, except for antisocial personality disorder. Actually, DSM-5 requires only 1 year of personality disorder the features, which is likely to be too short a period to distinguish a mental state from a trait disorder accurately. ICD-10 describes it as “highly unlikely” that personality disorder will be diagnosed before 16 – 17 years of age, but offers no scientific justification for this. Nonetheless, accurate diagnosis is hampered in both systems by the lack of developmentally appropriate personality disorder criteria or illustrations of current criteria consistent with adolescent behavior [16].

For many clinicians the diagnosis of borderline personality disorder remains off-limits in this age group, in spite of the scientific evidence in support of its validity in young people [15]. Many clinicians avoid diagnosing borderline personality disorder on the grounds of ‘protecting’ patients from the stigma associated with the label [6••]. However, given current knowledge, it is critical to provide clinicians with information that will help them to make clinically appropriate diagnoses of borderline personality disorder without fear of stigmatizing patients, as failure to recognize or diagnose borderline personality disorder limits appropriate intervention and risks inappropriate and/or harmful intervention.

Borderline personality disorder can be detected in young people presenting for clinical treatment [17] and shows similar stability to borderline personality disorder in adults [18]. The rate of borderline personality disorder in adolescents and young adults might be as high as 3 % in the community [19, 20] and 22 % in psychiatric outpatients [17, 18]. In adolescent psychiatric patients, borderline personality disorder typically co-occurs with mood, anxiety, eating, substance use, dissociative [21, 22], and other personality disorders [22]. Borderline personality disorder is associated with significantly lower psychosocial functioning than is found in adolescents with other psychiatric disorders [21, 22].

The heritability of borderline personality disorder is estimated to be 0.67 [23], which is similar to or higher than heritability estimates for other major psychiatric disorders. General *risk factors* for borderline personality disorder include adverse childhood experiences such as childhood abuse and neglect, maladaptive parenting, low socioeconomic status, maternal inconsistency, attachment disorganization, and early maternal separation before the age of 5 years [24–28].

In addition to temperamental features and personality pathology, other *precursors, signs, and symptoms* associated with borderline personality disorder in adolescence and adulthood include disturbances in attention, emotional regulation, and disruptive behavior. These especially include childhood or adolescent conduct disorder, oppositional defiant disorder, ADHD, substance use disorder, non-suicidal self-injury, anxiety, and depression [28, 29•, 30–37]. These findings suggest that similar or identical phenomena are perhaps misleadingly characterized as mental state pathology in children and later re-

labeled as personality pathology in adult life [29•]. It would be advantageous for the purposes of prevention of borderline personality disorder to recognize that many aspects of these childhood or adolescent psychopathologies are actually trait-like, such as impulsivity, affective instability, or hyper-aggression [38]. Therefore, borderline personality pathology should be considered among the differential diagnoses in adolescents and young adults presenting with these common disorders. This also suggests a role for non-mental health clinicians, such as pediatricians and family physicians, in the early detection of borderline personality disorder.

Prevention and early intervention for borderline personality disorder

The influential Institute of Medicine report on the prevention of mental disorders [39] set out a framework that has made it possible to apply the above knowledge, derived from important developmental and etiological studies, in order to inform prevention and early intervention for borderline personality disorder [6••]. A particular advantage of this approach is that it is not specifically concerned with the etiology of disorders, as complete elucidation of causal mechanisms is unnecessary for prevention. The main requirement is to identify 'risk factors' for persistence or deterioration of problems, rather than the 'onset' or incidence of disorder per se.

Latterly, a more sophisticated understanding of developmental pathways and these persistence or deterioration factors has emerged. This has led to a move away from a principally psychosocial model of the etiology of personality disorder, governed by a restricted view of the role of childhood adversity, to a lifespan developmental model [40] that recognizes the interactions among a wide variety of biological, psychological, and socio-cultural factors. Risk factors, such as adverse childhood experiences, have been found to be weaker and less specific for borderline personality disorder than previously recognized [29•], being common to a range of mental disorders. Insights from developmental psychopathology have underscored the numerous pathways to the development of borderline personality disorder (equifinality) and various outcomes for those with borderline personality pathology (multifinality) [41].

Such findings suggest that prevention programs based upon narrowly defined mental disorders are unlikely to achieve their aims [6••]. This is especially so for universal (population based) prevention programs, where to the authors' knowledge, borderline personality disorder has never been measured as an outcome. Selective (risk factor based) prevention approaches are also unlikely to succeed using current knowledge because of the diverse (multifinal) outcomes for specific risk factors. Therefore, *indicated prevention* has been suggested as the only form of prevention that is currently feasible [6••]. This targets young people with the abovementioned precursor signs and symptoms of borderline personality disorder, i.e., those showing early signs and symptoms of the disorder.

Indicated prevention and early intervention and programs for borderline personality disorder have been developed in Australia [42, 43] and the Netherlands [44]. Both programs take a dimensional approach to borderline personality disorder symptoms, combining both subsyndromal (<5 DSM-5

borderline personality disorder criteria; *indicated prevention*) and syndromal disorder (>5 DSM-5 borderline personality disorder criteria; *early intervention*), and allowing for co-occurrence of other disorders. Findings from these programs, one other psychosocial treatment program [45], and one pharmacotherapy study [46] constitute the main randomized controlled treatment trials for borderline personality disorder in adolescents. These programs should be differentiated from conventional borderline personality disorder treatment programs that are applied to individuals who have established complex and severe borderline personality disorder, but who happen to be less than 18 years old. Treatment for this latter group is akin to standard 'late' intervention in adults with established borderline personality disorder.

Randomized controlled treatment trials for adolescent borderline personality disorder

Cognitive Analytic Therapy (CAT)

CAT is a time-limited, integrated therapy that uses an object relations informed approach to cognitive therapy. The Helping Young People Early (HYPE) program [43] in Australia compared the effectiveness of adding up to 24 sessions of CAT or manualized good clinical care (GCC) to the comprehensive HYPE service model of care in 78 out-patients aged 15 – 18 years who fulfilled two to nine of the DSM-IV criteria for borderline personality disorder. At 24 months, there was no significant difference between the outcomes of the treatment groups on the pre-chosen measures, but patients allocated to CAT improved more rapidly. No adverse effect was shown with either treatment [42]. Interestingly, in a quasi-experimental study comparing the effectiveness of the two treatment groups in this RCT with historical treatment-as-usual (TAU) [47], both HYPE treatments were more effective than TAU, with HYPE plus CAT being the most effective.

A second study [48] investigated the safety of specialist first-episode psychosis treatment plus specialist HYPE early intervention for borderline personality in relation to deterioration in psychosis, aggression, self-harm and suicidality, and feasibility in relation to the completion of therapy phases. Sixteen patients meeting DSM-IV-TR criteria for first-episode psychosis and borderline personality pathology (≥ 4 DSM-IV criteria) were randomized either to specialist first-episode psychosis treatment alone or specialist first-episode treatment plus the HYPE specialist early intervention for borderline personality, and were followed up at the end of treatment and 6 months later. Specialist first-episode psychosis treatment plus specialist early intervention for borderline personality was an acceptable and safe treatment and showed an encouraging pattern of improvement on outcome measures for the combined treatment group.

Emotion Regulation Training (ERT)

ERT is a 17 session adjunctive, group-based skills training and individual and family psychoeducation program that is based upon Systems Training for Emotional Predictability and Problem Solving (STEPPS) for adult borderline personality disorder [49]. Two studies have been published by the ERT group. The first was a randomised controlled pilot study of 43 youth aged 14 – 19 years across five mental health centers, comparing ERT plus TAU with TAU alone [44].

Post-treatment there was a significant reduction in borderline personality disorder symptoms in both treatment groups, but no significant difference in improvement between groups. A second study [50] used the same design and randomised 109 adolescents (73 % with borderline personality disorder) to ERT plus TAU or TAU alone. Again, there were no between group differences on the primary outcomes. The two groups improved equally on borderline personality disorder symptom severity, general psychopathology and quality of life.

Mentalization-Based Treatment for Adolescents (MBT-A)

In this study, 80 adolescents (73 % with borderline personality disorder) presenting to mental health services with self-harm and comorbid depression were randomly assigned to either MBT-A or TAU. MBT is a psychodynamic psychotherapy program with its origins in attachment theory and was delivered as a year-long program involving weekly individual MBT sessions and monthly mentalization-based family therapy. TAU was not manualized. Both groups showed significant reductions in self-harm and risk taking behavior, with MBT-A being more effective than TAU in reducing self-harm and depression. This superiority was explained by improved mentalization and reduced attachment avoidance and reflected improvement in borderline personality disorder features

Omega-3 Fatty Acid Supplementation

The only randomized controlled pharmacotherapy trial for borderline personality disorder in adolescents is a post hoc subgroup analysis of a double-blind, randomized controlled trial of long-chain omega-3 polyunsaturated fatty acids (PUFAs) ('fish oil') for youth who met ultra-high risk criteria for psychosis [46]. In this study, 15 non-psychotic individuals with borderline personality disorder (mean age 16.2 years, [SD 2.1]) were randomized to either 1.2 g/day omega-3 PUFAs or placebo. Eight borderline personality disorder participants were randomly assigned to be treated with omega-3 fatty acids, while seven received placebo. The intervention period was 12 weeks. Study measures included the Positive and Negative Syndrome Scale (PANSS), the Montgomery-Åsberg Depression Rating Scale (MADRS), and the Global Assessment of Functioning (GAF). Fatty acids in erythrocytes were analyzed using capillary gas chromatography. At baseline, erythrocyte omega-3 PUFA levels correlated positively with psychosocial functioning and negatively with psychopathology. By the end of the intervention, omega-3 PUFAs significantly improved functioning and reduced psychiatric symptoms, including a summary score comprising PANSS items related to borderline personality disorder (suspiciousness, tension, poor impulse control), compared with placebo. The magnitude of group differences were large (PANSS total score $d=0.91$; PANSS borderline personality disorder symptoms $d=0.99$; GAF score $d=1.59$; MADRS score $d=0.95$). Side effects did not differ between the treatment groups.

There are no randomized controlled trials of psychosocial or pharmacotherapeutic treatment for mental state pathology, such as mood and anxiety disorders, among adolescents with borderline personality disorder.

Conclusions

Based upon the above psychosocial treatment trials, indicated prevention and early intervention appear to be effective for adolescents and young adults with

borderline personality disorder features. All interventions, including TAU, resulted in improvement on the primary outcomes. However, it is noteworthy that dropout rates from these interventions were universally high. What is not clear from the abovementioned studies is the role that specific psychotherapeutic interventions might play.

MBT-A was found to be superior to TAU and both forms of the HYPE intervention (HYPE+CAT and HYPE+ good clinical care) were superior to TAU, albeit in a quasi-experimental study. ERT did not demonstrate benefits over and above TAU in two studies, suggesting that this might not be a useful adjunct to TAU. Both MBT-A and HYPE are structured interventions with individual and family components, and these might be necessary elements for superior treatment outcome. Chanen and colleagues have outlined some of the common features of structured early intervention for borderline personality disorder [6●●], and these might be applicable to a variety of treatment settings (see Fig. 1).

However, it is also possible that the choice of control treatment might complicate the interpretation of these studies and it should not be assumed that TAU means the same thing or has the same effect across all studies. Various control conditions have been employed in psychotherapy trials in borderline personality disorder. There is increasing evidence that the choice of control treatment in psychotherapy studies might lead to different effect size estimates [51]. This is highlighted by more recent randomized controlled trials for borderline personality disorder in adults [52–54] and one of the above trials in adolescents [42], which compared specific models of treatment for borderline

- Assertive, ‘psychologically informed’ case management integrated with the delivery of individual psychotherapy
- Capacity for ‘outreach’ care in the community
- Flexible timing and location of intervention
- Active engagement and inclusion of families or carers
- Using a consistent, common and ‘plain language’ model across all aspects of care
- Psychoeducation for patients, families, carers, schools, and others involved in the with the young person using non-pejorative, non-blaming language
- Integration of general psychiatric care within the same team, with specific assessment and treatment of co-occurring psychiatric syndromes (‘comorbidity’), including the use of pharmacotherapy, where indicated for such syndromes
- Crisis team and inpatient care, with a clear model of brief and goal-directed inpatient care
- Access to a psychosocial recovery program
- Individual and group supervision of staff
- A quality assurance program.

Fig. 1. Key elements of a team-based, integrated early intervention for borderline personality disorder [6●●]

personality disorder with equally well structured and organized treatments. These structured control treatments surprisingly performed as well or nearly as well as the index treatment. There is also evidence from an RCT for adults with personality disorder [55] that TAU might act as a *nocebo* condition [56]. The 'nocebo' phenomenon, originally described in medication trials, refers to potentially harmful effects arising from a placebo [57].

Given the limited evidence base with regard to pharmacotherapy for borderline personality disorder in adults [58], this form of treatment cannot be recommended in adolescents. However, the above pilot study suggests that long-chain omega-3 PUFAs should be further explored as a viable treatment strategy, with excellent tolerability and low associated risk in young people with borderline personality disorder.

In the absence of evidence regarding the pharmacotherapeutic treatment for mental state pathology among adolescents with borderline personality disorder, it is recommended that physicians follow conventional treatment guidelines for these disorders. This should include carefully defined treatment goals, regular review, and cessation of medication if treatment is ineffective. Polypharmacy and intentional overdose using prescribed medication are common clinical hazards when prescribing for adolescents with borderline personality disorder.

Future directions

While studies support the legitimacy of diagnosing borderline personality disorder in young people, they also point to similar failings in our current diagnostic systems when applied to adolescents. Agreement on personality disorder phenotypes and a more robust classification system would have direct benefits for improving the precision of preventive and early interventions and strengthen the integration of the diversity of psychopathology typically found in young people [59]. The DSM-5, section III alternative personality disorder system has incorporated the evidence for personality disorder in young people, removing age-related caveats for its diagnosis, and the same is proposed for the ICD-11 [60]. Both classifications recognize the dimensional nature of personality disorder across the lifespan and, further, ICD-11 provides a category of *personality difficulty* that reflects *sub-threshold* personality pathology, which might assist clinicians who are unsure of or hesitant to use a personality disorder diagnosis with young people.

Recognition of personality pathology in childhood and adolescence will enable prevention, earlier detection and implementation of evidence-based interventions aimed at altering the life course trajectory of personality disorder [6••]. To date, no treatment for adolescent or adult borderline personality disorder has led to robust functional outcomes for individuals [61•]. Prevention and early intervention for personality disorder ought to focus upon improving functioning and adaptation and preventing iatrogenic harm.

Preventive and early interventions will need to be relatively simple to enable their broad-based delivery. Consequently, they are unlikely to involve more complex individual psychotherapies. Rather, the focus will need to be on effective elements of intervention, such as those in Fig. 1, along with basic skills and competencies that can be widely disseminated.

Finally, an alternative to the diagnostic category approach to prevention and early intervention is to develop a range of risk syndromes, or warning signs for the development of a range of disorders [62, 63••]. Key to this cross-diagnostic, *clinical staging* [64] approach is eschewing diagnostic categories and arbitrary age restrictions in favor of a focus on the severity and persistence of symptoms, the need for care, and the proportionality of any intervention [6••].

Compliance with Ethics Guidelines

Conflict of Interest

Andrew Chanen declares grants paid to Orygen Youth Health Research Centre from National Health and Medical Research Council, Victorian Health Promotion Foundation and Colonial Foundation, not related to this article. Katherine Thompson declares no conflict of interest.

Human and Animal Rights and Informed Consent

This paper cites previously published studies conducted by Andrew Chanen [17, 18, 21, 22, 42, 46–48] that have been approved by local Research and Ethics Review Committees.

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