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Severe and complex youth depression: Clinical and historical features of young people attending a tertiary mood disorders clinic

Brief Report

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Abstract

Aim: The concept of severe and complex youth depression has evolved from clinical experience. Here we conducted a file audit study to evaluate supporting data for the construct.

Methods: A retrospective file audit was undertaken with 84 consecutively discharged patients over six-months from Orygen's Youth Mood Clinic (YMC; 50% female).

Results: Over a third (36.9%) were disengaged from vocation and education, with exposure to traumatic events common (84.5%). Almost all patients (91.7%) reported past 2-week suicidal ideation at clinic entry. Hospital emergency departments were the most frequent referral source (31.0%). Most (72.6%) had received previous mental health treatment. Multimorbidity was frequently observed. The presence of a substance use disorder, or ≥3 comorbidities were both associated with a greater likelihood of prior suicide attempt.

Conclusions: These data highlight the clinical needs associated with severe and complex depression. Findings have implications for youth experiencing mood disorders attending tertiary and community mental health settings.

Keywords: Depression, youth, clinical services, early intervention

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Severe and complex youth depression: Clinical and historical features of young people attending a tertiary mood disorders clinic

Severe and complex youth depression has been conceptualised as severe major depressive disorder (MDD) as per DSM-5 diagnostic criteria (e.g., the number of MDD symptoms is substantially in excess of that required to make the diagnosis, symptoms are seriously distressing, unmanageable, and markedly interfere with social and occupational functioning), and accompanied by (i) suicidal thoughts and behaviours, in addition to (ii) the presence of comorbid non-anxiety mental disorders or symptoms (including personality disorders, substance use disorders, compulsive disorders, and autism spectrum disorder) and (iii) poor psychosocial functioning, with these symptoms frequently (iv) non-responsive to recommended first-line treatment, in youth 12-25 years (Davey & McGorry, 2019; Rice et al., 2017). Accordingly, severe and complex youth depression presents a significant clinical management challenge in the context of time-limited and episodic treatment, including treatment resistance to combined first- and second-line psychotherapy (e.g., CBT) and pharmacotherapy (e.g., fluoxetine) interventions (Emslie, Kennard & Mayes, 2011). While multimorbidity, suicide risk and accompanying functional impairment are commonly observed in depressed youth attending tertiary mental health settings as opposed to research trials (e.g., Davey et al., 2019; Goodyer et al., 2007), published data from clinical cohorts are limited. Further, there remains a lack of high-quality youth suicide prevention studies (Robinson et al., 2018), and this gap must be addressed given MDD is the most common psychiatric diagnosis among people lost to suicide (Hawton, Comabella, Haw, & Saunders, 2013).

The Youth Mood Clinic (YMC) at Orygen (Centre for Youth Mental Health, The University of Melbourne, Australia) provides time-limited outpatient treatment according to intake criteria for severity, risk and complexity (Rice et al., 2017). YMC provides psychiatry review, multidisciplinary psychotherapeutic care, engagement of caregivers and crisis planning to support symptom management and functional gain (Rice et al., 2016; Dempsey et al., 2018). In doing so, YMC is unique within Australia, though other international academic tertiary care centres seek to provide comparative comprehensive care for youth MDD (e.g., Brent et al., 2015; Osuch et al., 2019; Verduyn, 2011). Nonetheless, YMC provides an important development ground for treatment innovation.

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The aim of this study was to provide an overview of key clinical and historical features for young people provided YMC care. Given the established 2:1 female to male prevalence ratio of depression (Breslau et al., 2017; Essau et al., 2010), we sought to examine any symptomatic or demographic sex differences for the YMC cohort, in addition to associates of suicide attempt during care (e.g., multimorbidity and type of comorbidity). The goal of the study was to explore alignment of the YMC cohort with the construct of severe and complex youth depression, as outlined by Davey and McGorry (2019). Such work has direct research and clinical implications given renewed efforts at improving the identification and management of treatment resistant mood disorders (e.g., Dwyer et al., 2020; Gaynes et al., 2020), and the potentiality of improving youth-focussed intervention.

Method

Design, participants and setting

A medical file audit was undertaken based on the records of consecutively discharged YMC patients. Participants comprised 15- to 25-year-olds accepted for outpatient treatment at Orygen's YMC. Orygen is the youth-specific tertiary mental health service for a catchment of over 1 million people in the north-western suburbs of Melbourne (Brown, Bedi, McGorry & O'Donoghue, 2020). The single inclusion criterion was clients discharged from YMC over 6 months from January 2018 to June 2018 inclusive. The consecutive discharge approach ensured any clients lost to follow-up were included. This period aligned with available personnel resources to conduct the study. Reporting conformed to the STROBE guidelines for observational cross-sectional studies (Von Elm et al., 2007).

Procedure

A de-identified list of YMC patients meeting the inclusion criterion was provided by Orygen's Health Information Manager. A data extraction template guided the data extraction process, which occurred via two trained researchers accessing the electronic medical records of identified eligible cases. Five records were jointly extracted and coded to ensure consistency between the researchers, and regular supervision meetings were conducted throughout the data extraction process. Extracted data included familial and demographic history as identified within service registration and assessment documents, exposure to potentially traumatic events including bullying and sexual abuse (e.g., coded where terms 'bullying' [both current and historical] or 'sexual abuse' were expressly written in the medial record). Social isolation was coded according to specific mention of patients being 'socially

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isolated' or lacking social connection or social supports. Other extracted data included history of deliberate self-harm (coded upon mention of self-harm method and conceptualised as any physically self-injurious behaviour performed without reported intent to die), suicide-related behaviours (coded upon mention of suicide attempt with potentially fatal consequences accompanied by a reported intent to die), MDD symptoms (as assessed by Patient Health Questionnaire [PHQ-9] item scores ≥1 e.g., '*several days*' in past 2-weeks; Kroenke, Spitzer, & Williams, 2001), provisional diagnoses at clinic entry (as undertaken by consultant psychiatrist), medication at clinic entry, treatment history, and referral pathway. Ethical approval for this project was obtained through Melbourne Health (QA2019066).

Data analysis

Descriptive statistics characterised the sample. Data screening explored missing data and checked assumptions for continuous variables. Missing data were not replaced. Inferential statistics (*t*-tests, χ^2 tests of association) were used to evaluate group (e.g., sex) differences. Fisher's exact test was applied where expected cell sizes were <5. Odds ratios with 95% CIs were reported for associations between suicide attempt, comorbidity and substance use. Analyses were undertaken in IBM SPSS Statistics 26.0.

Results

Data were extracted for 84 patients. Screening indicated that all medical records were available (e.g., no missing files). With the exception of the PHQ-9 (where there were 14 cases without a complete PHQ-9), the remaining variables had mostly complete data (with a maximum of 2 missing cases observed on only two variables). Mean age of the sample was 18.9 (*SD*=3.1) years. The mean PHQ-9 score was 19.19 (*SD*=6.35).

Regarding demographics, Table 1 shows that males (70.7%) were significantly more likely than females (39.5%) to report marked social isolation. Most young people attending YMC reported family conflict (59.5%), and a substantial minority (36.9%) were not engaged in any formal education or training. Regarding risk factors, 84.5% of the sample had experienced a traumatic event, with females (25.6%) significantly more likely than males (4.9%) to report sexual abuse. Parental separation (51.2%) and bullying (38.1%) frequently occurred. Regarding clinical variables, 91.7% of the sample reported

past 2-week suicide ideation, with 54.8% experiencing a previous suicide attempt, most commonly overdose (44.0%) or hanging (19.0%).

Regarding referral pathway, most referrals were received from hospital emergency departments (31.6%), followed by GPs or private practitioners (17.9%), or youth-specific mental health (e.g., headspace) services (17.9%). In terms of previous treatment, the majority had previously accessed mental health care (72.6%), and most were prescribed an antidepressant at entry to YMC (51.2%).

All nine MDD symptoms were frequently reported, with depressed mood the most commonly reported symptom (95.8%) and psychomotor agitation/retardation the least frequently reported (73.2%; see Supplementary Table 1). Guilt was significantly more common in females (100%) than (81.1%) males (p=.007), though the remaining MDD symptoms were consistent by sex. Mood disorders were the most common baseline diagnoses (96.4%), with multimorbidity occurring frequently; 48.8%, 25.0% and 13.1% of the sample had two, three and four diagnoses at entry to clinic, respectively (see Supplementary Table 1).

When suicide attempt was examined relative to multimorbidity, there was no association with the presence of ≥1 (p=.120), or ≥2 (p=.206) comorbidities. However, 90.7% (10/11) of those with ≥3 comorbidities had a previous attempt relative to 49.3% (36/73) of those with 0-2 comorbidities (Fisher's exact p=.010). Relative to diagnosis, mood, anxiety, or neurodevelopmental disorders at clinic entry were not associated with previous suicide attempt (p's>.05). In contrast, diagnosis of a substance use disorder was associated with a six-fold increase in the likelihood of a previous suicide attempt OR=6.35, 95% CI 1.32–30.49, $\chi^2(1,84)=6.50$, p=.011 (Figure 1A). Further, relative to those without a history of suicide attempt, those with a previous attempt were more likely to experience suicide daily ideation at clinic entry (Figure 1B; Fisher's exact test p=.012).

Discussion

The present cohort of young people attending YMC exhibited symptoms consistent with severe and complex depression, evidenced by marked distal and proximal suicide risk, comorbidities, functional impairment and childhood maltreatment or trauma exposures. Contrary to the 2:1 epidemiological ratio of MDD among women relative to men (Breslau et al., 2017; Essau et al., 2010),

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MDD symptoms were largely consistent by sex, and equivalent numbers of consecutive male (*n*=42) and female (*n*=42) patients observed. The majority of YMC patients had been previously engaged with mental health treatment. While a proportion of young people are known to experience limited engagement with therapy and early treatment discontinuation (e.g., Seidler et al., 2020; Watson, Mehra, Hawke, & Henderson, 2019), given that a high percentage (72.6%) of the present cohort received prior mental health care, many YMC patients may therefore have exhibited insufficient treatment response (or treatment resistance) to recommended first- and second-line interventions (e.g., NICE, 2019). This underscores the urgent need for novel youth-specific treatment approaches to mood disorders in adolescents and emerging adults (e.g., Osuch et al., 2019).

Davey and McGorry (2019) conceptualised severe and complex depression as being often non-responsive to first-line treatments (e.g., CBT, fluoxetine), and challenging to manage in solo-practice settings, requiring a multidisciplinary team approach offering expertise across psychiatric, social, family, educational, and vocational domains. While approaches used by YMC include psychotherapeutic case management with embedded psychiatry review, integration of psychosocial recovery interventions including evidence-based group therapy and reengagement with education (Cotton et al., 2011), and support and engagement with caregivers (Rice et al., 2016; Dempsey et al., 2018), scope remains for treatment innovation.

Although the timing between event exposure (e.g., childhood versus adolescence) and MDD symptom onset are a limitation of the present dataset, relatively high levels of relational trauma were observed in the present cohort relative to other studies (c.f. Copeland et al., 2007; Finkelhor et al., 2009). Childhood maltreatment is associated with elevated suicide risk among inpatients (Pompili et al., 2014) and among youth cohorts in the general community (Angelakis, Austin, & Gooding, 2020; Rice et al., 2018), with cumulative (e.g., four of more) maltreatment exposure types enhancing the risk of suicide attempt by a factor of 12.2; Adjusted OR 95% CI 8.5 - 17.5 (Felitti et al., 1998). Of note, young people experiencing MDD and suicide risk with a background of trauma exposure respond better when caregivers are integrated into treatment (Diamond, Creed, Gillham, Gallop, & Hamilton, 2012), though in practice with emerging adults (e.g., 18-25 years), parent integration into treatment may not be overly feasible (e.g., Peters et al., 2021). Taken together with the relatively high rates of social isolation

(particularly amongst males within the present study), and the likely assumptions these young people may hold regarding others, exploration and application of relational psychotherapy intervention models that go beyond standard cognitive behavioural approaches appears indicated.

Interpersonal treatment approaches that encourage clinician 'relational curiosity', using the therapeutic relationship as a vehicle for interpersonal (and broader) recovery may help in collaborative efforts to identify and address relational factors perpetuating MDD symptoms (Fonagy, Campbell, & Bateman, 2017; Liang et al., 2020). Coupled with behaviourally-based interventions – which some research suggests are more effective, easier and engaging for young people experiencing severe mood symptoms to master and apply than cognitive-focussed intervention (Hetrick et al., 2015) – such approaches may better support young people to trial and test new, adaptive ways of relating to others and self.

The high rate of young people with a history of suicide attempt, and/or deliberate self-harm underscore the complexity of this cohort. The YoDA-C clinical trial was recently conducted with this population (*N*=153; mean age 19.6 years) and found that deliberate self-harm did not respond to combination treatment of cognitive behavioural therapy + fluoxetine. In fact, deliberate self-harm was possibly exacerbated by fluoxetine, particularly in those <18 years (Davey et al., 2019). This further supports the need for psychosocial treatment innovation for this group.

There are important treatment implications arising from the present data. As highlighted, almost all young people attending YMC reported exposure to at least one potentially traumatic event, most experienced marked social isolation, and over a third experienced vocational or educational disengagement. Core to these experiences and exposures are detrimental impacts to interpersonal relationships. While traditionally the YMC treatment model has been influenced by CBT principles, experience suggests that CBT +/- standard pharmacotherapy is insufficient for many patients provided YMC care. YMC is now trialling a number of adjunctive interventions, with three of these focussing on understanding and improving young people's relationship functioning via; (i) clinicians using a relational formulation and therapeutic mapping approach adapted from cognitive analytic therapy approaches (e.g., Potter, 2010); (ii) experiential outpatient peer group-based interventions designed to improve effectiveness in interpersonal relationships informed by interpersonal and narrative

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psychotherapy (e.g., Mertz, 2014; WHO, 2016); and (iii) implementation of co-designed moderated social media-based digital interventions for supporting suicide risk (Bailey et al., 2020; 2021). YMC is also trialling novel biological interventions including (iv) low-dose ketamine (Berk, Loo, Davey, & Harvey, 2018) and (v) transmagnetic stimulation (Amminger et al., 2017). Clinical trials of these relational and biological interventions are currently underway with outcomes pending.

Limitations of this study include use of diagnostic information based on psychiatry review at clinic entry obtained through clinical interview, and an absence of interrater-reliability (e.g., Cohen's kappa) data given two raters were used to extract data. While this is a threat to the validity of the present findings, regular team meetings, clear operationalisation of terms and use of a data extraction template nonetheless sought to ensure consistency of extraction and coding. It is acknowledged, as with any data extracted from medical records, that if an event or exposure occurred but was not documented in the patient's file, then this would be underrepresented. Additional psychiatric diagnoses (or clarification) would have occurred throughout the YMC episode of care, especially if structured diagnostic interviews were used, and future research should examine longitudinal diagnostic continuity for patients exhibiting features of severe and complex youth depression. Given Orygen comprises specialist clinics for mood, emerging borderline personality disorder, at-risk mental state and first episode psychosis, the present data cannot explore comorbidity of severe and complex depression with these other diagnostic groups. Nonetheless, medical file audit studies based on catchment area populations have the strength of limiting biases in consent processes, offering data from highly representative patient samples (Conus, Cotton, Schimmelmann, McGorry, & Lambert, 2007). Finally, there may be potential seasonal effects exerted, and future file audit studies should look to collect data over a full calendar year.

Regarding future directions, the present study was not able to undertake an analysis according to gender identity (due to limitations of information available in the medical record). Given the heightened mental health risks experienced by young people identifying as trans or gender diverse (Price-Feeney, Green, & Dorison, 2020), future research examining severe and complex youth depression should consider examining gender-based outcomes. While the present study provides novel descriptive data, the design was unable to validate the severe and complex youth depression construct.

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Missing elements at present include data supporting differentiation of the construct from non-complex depression, exploration of the role of differential treatment response (e.g., non-responsiveness) as proposed by Davey and McGorry (2019), and consumer perspectives capturing the lived experience of young people. Additionally, future measurement efforts are needed to ensure robust assessment of the severe and complex youth depression construct. Here, particular attention should be paid to assessment, including psychometric validity and reliability indices, in addition to sensitivity and specificity, and person-centred longitudinal approaches such as latent growth curve modelling (e.g., Rice et al., 2020).

In conclusion, these data highlight the clinical needs associated with severe and complex youth depression. We expect that similar severity and complexity symptom clusters would exist among youth experiencing mood disorders attending other tertiary mental health settings or primary care. While further validation of the construct is needed, an enhanced focus on the complex treatment needs of this population will be an important step towards reducing suffering, impairment and lives lost to suicide.

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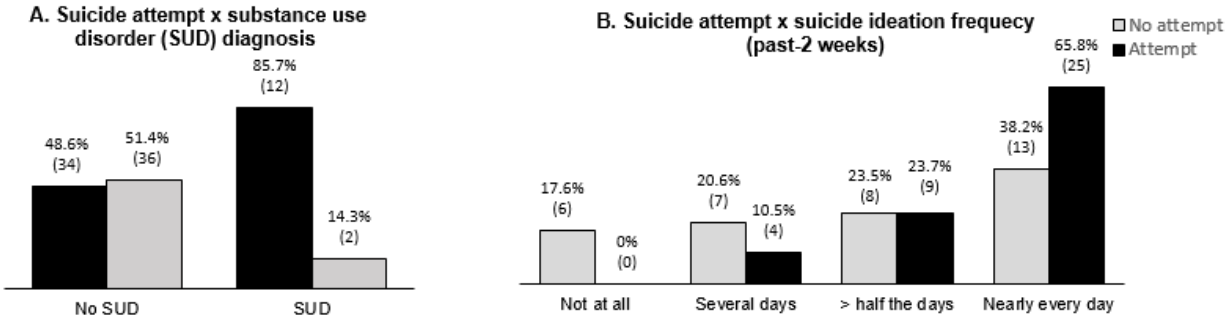

Figure 1: Association between suicide attempt and substance use diagnosis (A), and suicide ideation frequency (B)

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Table 1: Premorbid and entry characteristics of 84 young people attending YMC

	Statistic	**Total** *N*=84		**Female** *n*=42	**Male** *n*=42	**Test, *df***	**Sig.**
Demographics							
Age	*M* (*SD*)	19.0 (3.1)		19.0 (3.2)	18.9 (3.0)	*t*, 82	.335
Born overseas	% (*n*)	26.5 (22)		20.9 (9)	32.5 (13)	χ^2, 1	.233
Accommodation with family of origin	% (*n*)	54.8 (46)		51.2 (22)	58.5 (24)	χ^2, 1	.497
Maternal mental illness	% (*n*)	36.6 (30)		45.2 (11)	27.5 (19)	χ^2, 1	.096
Paternal mental illness	% (*n*)	18.3 (15)		21.4 (9)	15.0 (6)	χ^2, 1	.452
Current family conflict	% (*n*)	59.5 (50)		53.2 (23)	65.9 (27)	χ^2, 1	.248
Disengaged from education/vocation	% (*n*)	36.9 (31)		39.5 (17)	34.1 (14)	χ^2, 1	.609
Current financial difficulty	% (*n*)	26.2 (22)		27.9 (12)	24.4 (10)	χ^2, 1	.714
Marked social isolation	% (*n*)	54.8 (46)		39.5 (17)	70.7 (29)	χ^2, 1	**.004**
Potential traumatic event exposure							
Bullying	% (*n*)	38.1 (32)		41.0 (25)	31.8 (7)	χ^2, 1	.535
Parental separation	% (*n*)	51.2 (43)		44.2 (19)	58.5 (24)	χ^2, 1	.188
Exposure to domestic voidance	% (*n*)	27.4 (23)		29.7 (12)	26.8 (11)	χ^2, 1	.912
Parental neglect	% (*n*)	9.5 (8)		11.6 (5)	7.3 (3)	χ^2	..713[a]
Inconsistent home environment	% (*n*)	22.6 (19)		18.6 (8)	26.8 (11)	χ^2, 1	.368
Sexual abuse (>2 years prior)	% (*n*)	15.5 (13)		25.6 (11)	4.9 (2)	χ^2	**.014**[a]
Physical abuse (>2 years prior)	% (*n*)	14.3 (12)		11.6 (5)	17.1 (7)	χ^2, 1	.476
Loss of friend / family member	% (*n*)	28.4 (24)		37.2 (16)	19.5 (8)	χ^2, 1	.073
Deliberate self-harm							
Any self-harm history	% (*n*)	55.4 (46)		71.4 (30)	39.0 (16)	χ^2, 1	**.003**
Cutting	% (*n*)	50.6 (42)		61.9 (26)	39.0 (16)	χ^2, 1	**.037**
Scratching, Picking, or Pinching	% (*n*)	6.0 (5)		9.5 (1)	2.4 (4)	χ^2	.360[a]
Burning	% (*n*)	6.0 (5)		7.3 (3)	4.8 (2)	χ^2	.676[a]
Self-hitting or Punching	% (*n*)	3.6 (3)		4.9 (2)	2.4 (1)	χ^2	.616[a]
Ice Burning/Freezing	% (*n*)	3.6 (3)		0 (0)	7.1 (3)	χ^2	.241[a]
Suicide-related behaviours							
Suicide ideation (past 2-week)	% (*n*)	91.7 (66)		97.1 (34)	86.5 (32)	χ^2, 1	.102
Suicide attempt (lifetime)	% (*n*)	54.8 (46)		58.1 (25)	51.2 (21)	χ^2, 1	.524
Overdose (lifetime)	% (*n*)	44.0 (37)		51.2 (22)	36.6 (15)	χ^2, 1	.179
Hanging (lifetime)	% (*n*)	19.0 (16)		16.3 (7)	22.0 (9)	χ^2, 1	.508
Transport-related (lifetime)	% (*n*)	7.2 (6)		2.3 (1)	12.5 (5)	χ^2	.101[a]
Number of suicide attempts	*M* (*SD*)	1.35 (2.06)		1.04 (1.31)	1.65 (2.06)	*t*, 82	.164
Referral pathway							
Emergency Department	% (*n*)	31.0 (26)		30.2 (13)	31.7 (13)	χ^2, 5	.646[a]
GP & MH practitioner	% (*n*)	17.9 (15)		16.3 (7)	19.5 (8)	-	-
headspace service	% (*n*)	17.9 (15)		20.9 (9)	14.6 (6)	-	-
Young person & family	% (*n*)	13.1 (11)		9.3 (4)	17.1 (7)	-	
Education & other	% (*n*)	10.7 (9)		9.3 (4)	12.2 (5)	-	-
Inpatient unit & area MH service	% (*n*)	9.5 (8)		14.0 (6)	4.9 (2)	-	-

Note. [a]= Fishers exact test (two-sided; no degrees of freedom).

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