

RUNNING HEAD: CHANGES IN ADOLESCENT PSYCHOSOCIAL
DIFFICULTIES

**Changes in Severity of Psychosocial Difficulties in Adolescents Accessing Specialist
Mental Healthcare in England (2009–2014)**

Abstract

In England, clinicians and professional organisations report that higher numbers of adolescents with more severe psychosocial difficulties are accessing specialist services. A lack of national data on patterns of access to specialist services means there is limited information to inform policy. We examined whether severity of psychosocial difficulties in adolescents accessing mental healthcare has changed over time. Adolescents seen in specialist child mental healthcare in 2009 vs. 2014 were matched on demographics and problem types using propensity score matching; final sample $N=2,776$ adolescents. We found: 1) stability over time in overall severity of difficulties, 2) an increase in severity of young women's emotional problems, and 3) a decrease in adolescents' conduct problems. The findings suggest the intriguing possibility that the criteria for accessing mental healthcare are not universally rising, but rather the patterns in access to specialist services may mirror epidemiological changes in severity of psychosocial difficulties in the population.

Keywords: adolescence; mental health; mental healthcare

Abbreviations: Child Outcomes Research Consortium (CORC); Strengths and Difficulties Questionnaire (SDQ)

Changes in Severity of Psychosocial Difficulties in Adolescents Accessing Specialist Mental Healthcare in England (2009–2014)

In England, clinicians and professional organisations report that higher numbers of adolescents with more severe psychosocial difficulties are accessing specialist services (House of Commons Health Committee, 2014). Available healthcare resources to provide specialist services for adolescents with psychosocial difficulties have decreased (Royal College of Psychiatrists, 2013), with funding cuts of as much as 25% in some regions of England (Young Minds, 2014). Some argue that, on the one hand, the criteria for accessing specialist mental healthcare have increased, resulting in only the most severe cases being able to access services (Royal College of Psychiatrists, 2013). On the other hand, it could also be that changes in population prevalence, changes in help-seeking practices, and changes in parental reporting could be contributing to adolescents with increasing severity of psychosocial difficulties accessing mental healthcare.

A lack of national data on patterns of access to specialist services means that there is limited information to inform policy (Merikangas et al., 2011). In England, the most recent data show that 10% of children have a clinically diagnosable mental health problem of whom only 25% access mental health services (Green, McGinnity, Meltzer, Ford, & Goodman, 2005). Referral to child mental health services is reliant on a number of processes: (1) recognition of the young person experiencing psychosocial difficulties by adults, such as carers or teachers, (2) associating these difficulties with an appropriate psychological service, and (3) young people attending (or being brought by carers to) services (Gopalan et al., 2010). There is also a range of early exit points once accessing psychological therapy, such as between referral and assessment, between assessment and treatment, or during treatment. Adolescents with higher levels of impairment, more severe psychosocial difficulties, or comorbid problems may be more likely to access services (Merikangas, et al., 2011).

Adolescents with behavioural difficulties are also more likely to access specialist services (Merikangas, et al., 2011). Similarly, in contrast to the overall provision of specialist services, there have been increased universal resources directed towards early identification of behavioural difficulties in England, which has been a particular focus for policy advising schools on managing behaviour (Department for Education, 2015). The focus on behavioural difficulties may in part be due to challenges in identifying effective universal programmes for emotional problems in school settings.

Evidence from epidemiological data suggests three trends in population prevalence in the severity of psychosocial difficulties in adolescents: 1) stability over time in overall levels of mental illness, 2) an increase in young women's emotional problems, and 3) a decrease in adolescents' conduct problems (Bor, Dean, Najman, & Hayatbakhsh, 2014; Fink et al., 2015; Lessof, Ross, Brind, Bell, & Newton, 2016; McManus, Bebbington, Jenkins, & Brugha, 2016; McMartin, Kingsbury, Dykxhoorn, & Colman, 2014; Perou et al., 2013; The Children's Society, 2016).

The aim of the present research was to examine differences in severity of psychosocial difficulties in adolescents accessing mental healthcare in 2014 and five years before in 2009 as there is no existing evidence about whether these difficulties have changed in services in England. Given the lack of national data on patterns of access to specialist services, we based our expectations on emerging patterns from epidemiological evidence described above: 1) stability over time in overall severity of psychosocial difficulties, 2) an increase in young women's emotional problems, and 3) a decrease in adolescents' conduct problems.

Method

Participants and procedure

Data were collected from a routine dataset from 30 mental healthcare services which form part of the Child Outcomes Research Consortium (CORC, 2014b). This consortium is a learning collaboration, which includes the majority of child mental healthcare services across England, including both statutory and voluntary sector providers that annually share their data for collation and reporting.

In line with previous studies examining the prevalence of psychosocial difficulties in adolescents in the community (Fink, et al., 2015), adolescents from this dataset were included if their data were reported in 2009 or 2014, and if they had complete demographic characteristics and measures of psychosocial difficulties (see the “Measures” section); participant flow is presented in Figure 1. This resulted in a final sample of $N = 6,222$ adolescents from 177 teams across 30 mental healthcare services in England with data from 2–685 children per service; demographic characteristics are presented in Table 1.

According to the CORC protocol, questionnaires are completed by adolescents, carers, and/or clinicians at assessment and again 4 to 6 months later or, if sooner, case closure (CORC, 2014a). The measures were taken from a secondary analysis of routinely collected data so ethical review was not relevant (NHS, 2015). Moreover, the present research adheres to reporting guidelines for observational studies (von Elm et al.).

To examine how generalizable these data may be to other child mental healthcare services across the UK, we compared them to other national data (Durham University Mapping Unit, 2009/10). The most recent data were from 2008/09; we therefore compared these data to our original 2009 sample using chi-square tests. As can be seen from Table 1 below, the data were broadly comparable given the small effect sizes and odds ratios (Cohen, 1988). There were, however, some areas of difference in terms of ethnicity (i.e., a larger proportion of non-White groups in our original 2009 sample) and some problem types (e.g.,

more adolescents with emotional problems, hyperactivity, and other problems in our original 2009 sample).

[INSERT TABLE 1 HERE]

Measures

Demographic characteristics and problem types. Age, gender, and ethnicity were recorded by services as part of routine data recording. Ethnicity was captured using the categories from the 2001 Census and was generally based on self-report by the carer or the adolescent. These were grouped for analysis as follows: White (including White British, Irish, and Other White background), Mixed (including Mixed White and Black Caribbean, Mixed White and Black African, Mixed White and Asian, and any other mixed background), Asian (including Indian, Pakistani, Bangladeshi, and Other), Black or Black British (including Caribbean, African, and Other), and other ethnic groups (including Chinese and Other). Special educational needs (SEN) was obtained from clinicians at referral or assessment, and the presence or absence of problem types was recorded by clinicians at assessment.

Severity of psychosocial difficulties. To measure severity of psychosocial difficulties, the 20 items of the Strengths and Difficulties Questionnaire (SDQ) were used (Goodman, 1997; Goodman, Meltzer, & Bailey, 1998). The SDQ measures mental health symptoms and comprises four subscales assessing psychosocial difficulties (i.e., conduct problems, emotional problems, peer problems, and hyperactivity), and one capturing strengths (i.e., prosocial) which was not used in the present study. Carers responded to all items from not true (0) to certainly true (2). The SDQ is a widely used measure of psychosocial difficulties; in particular, the internal consistency has been reported as .82 (Goodman, 1997; Goodman, et al., 1998).

Analytic strategy

To examine whether there was a change in the severity of psychosocial difficulties in adolescents accessing child mental healthcare between 2009 and 2014, three sets of analyses were conducted. First, participants from the larger 2009 sample were matched to the 2014 sample on demographic characteristics known to be predictors of psychosocial difficulties in adolescents (Green, et al., 2005) including: gender for whole sample comparisons, as gender is associated with the prevalence of different psychosocial difficulties (female coded 1, with male the reference group); age in years; White, Mixed, Asian, Black, and other (not stated or missing ethnicity the reference group); SEN (present coded 1, with not present the reference group), and the 12 problem type variables (each coded 1 for present, with not present the reference group, as they were not mutually exclusive) (see Table 1).

One-to-one non-replacement propensity score matching was used in STATA 12 (Leuven & Sianesi, 2003; StataCorp, 2011), which uses logistic regression to determine the probability of belonging to the 2014 vs. 2009 sample, based on the above demographic characteristics and problem types (i.e., the propensity score) (Rosenbaum & Rubin, 1985). Participants from the two samples with the same propensity scores were then selected as the distribution of the demographic characteristics and problem types was the same for participants with the same propensity score.

Data were available from different services across the two time periods. As service characteristics within health services often undergo organisational restructuring, characteristics of services may be likely to change over time. Therefore, we chose to match on clinical characteristics, in addition to demographic characteristics, to avoid over-inflating differences observed due to differences in patient populations, even though this may have led to more conservative findings. Nevertheless, this enabled us to be more confident that any differences observed were due to changes in severity of psychosocial difficulties in

adolescents accessing mental healthcare and not solely due to differences in services or service characteristics.

Second, independent samples *t*-tests were computed to examine whether there was a difference in the mean severity of psychosocial difficulties using the four SDQ difficulties subscales and the total difficulties score between the matched 2009 sample and the 2014 sample. In addition, effect sizes were computed for significant effects (Cohen, 1988). Third, chi-square tests were used to examine whether there was a difference in the proportion of adolescents above clinical cut off score indicating risk of psychosocial difficulties according to the SDQ in the matched 2009 sample and the 2014 sample. In addition, odds ratios were computed for significant effects. An alpha level of 0.01 was chosen to balance the likelihood of Type I and Type II errors.

Results

Matching

Participants were matched on gender, age, ethnicity, SEN, and problem types. This resulted in every adolescent in the 2014 sample having a closely corresponding matched adolescent in the 2009 sample on these characteristics. The demographic characteristics and problem types of the original 2009 sample, the matched 2009 sample, and the 2014 sample are shown in Table 1. After matching, there was still a slightly higher percentage of adolescents with SEN ($\chi^2(1)=40.36, p<.001$) and with clinician-reported hyperactivity ($\chi^2(1)=18.43, p<.001$) or self-harm ($\chi^2(1)=13.46, p<.001$) in the matched 2009 sample than in the 2014 sample.

Severity of psychosocial difficulties

The mean severity of psychosocial difficulties in the matched 2009 sample and the 2014 sample are shown in Table 2. Overall, there were few significant differences in mean severity of psychosocial difficulties in the matched 2009 sample and the 2014 sample.

However, girls had higher mean severity of emotional problems in the 2014 sample than in the matched 2009 sample. In contrast, there was a lower mean severity of conduct problems in the 2014 sample than in the matched 2009 sample.

The percentage of adolescents above clinical cut off is shown in Table 3. Again, there were few significant differences in the percentage of adolescents above clinical cut off in the matched 2009 sample and the 2014 sample. However, there was a lesser number of adolescents above the at-risk cut off for conduct problems (56% in 2009 vs. 51% in 2014 $\chi^2(1)=7.51, p<.01$, odds ratio=0.81) in the 2014 sample than in the matched 2009 sample.

[INSERT TABLES 2 AND 3 HERE]

Discussion

Given the lack of national data on patterns of access to specialist services, the aim of the present research was to examine differences in the severity of psychosocial difficulties in adolescents accessing mental healthcare in 2014 and five years before in 2009. We found three patterns: 1) stability over time in overall severity of psychosocial difficulties, 2) an increase in young women's emotional problems, and 3) a decrease in adolescents' conduct problems.

The findings of the present research suggest that the criteria for accessing mental healthcare services might not be universally increasing and, indeed, for some problems may actually be decreasing. This was surprising as, in England in particular, clinicians and professional organisations report that higher numbers of adolescents with more severe psychosocial difficulties are accessing specialist services (House of Commons Health Committee, 2014). Available healthcare resources to provide specialist services for adolescents with psychosocial difficulties have decreased (Royal College of Psychiatrists, 2013), with funding cuts of as much as 25% in some regions of England (Young Minds, 2014). The findings of the present research may suggest that the patterns of access to

specialist services may mirror epidemiological changes in the severity of psychosocial difficulties in the population (Bor, et al., 2014; Fink, et al., 2015; Lessof, et al., 2016; McManus, et al., 2016; McMartin, et al., 2014; Perou, et al., 2013; The Children's Society, 2016).

Referral to child mental health services is reliant on a number of processes:

(1) recognition of the young person experiencing psychosocial difficulties by adults, such as carers or teachers, (2) associating these difficulties with an appropriate psychological service, and (3) young people attending (or being brought by carers to) services (Gopalan, et al., 2010). Possible reasons for these changes in population prevalence may be that adolescents experience growing academic, interpersonal, and cultural pressures, which may increase the risk of mental illness (Blum, Bastos, Kabiru, & Le, 2012). These pressures may be particularly salient for, and likely to affect the emotional problems of, young women, such as sexualisation and negative body image exposure on the Internet and in social media (Holland & Tiggemann, 2016; Livingstone & Smith, 2014). In contrast, there have been increased universal resources directed towards early identification of behavioural difficulties, which has been a particular focus for policy advising schools on managing behaviour (Department for Education, 2015). The focus on behavioural difficulties may in part be due to challenges in identifying effective universal programmes for emotional problems in school settings.

Limitations include the use of routinely collected data compared to those collected under controlled conditions, and confounding variables and selection bias may apply (Gilbody, House, & Sheldon, 2002); future research is needed to replicate the present findings. Use of the CORC dataset means that there may be some variation in how data were collected and recorded. Although the present study was based on a large national dataset, including data from 30 child mental healthcare services, findings may not generalise to other settings. Still, our study adds to the literature by building on research examining change in psy-

chosocial difficulties over time in community samples of school children (Fink, et al., 2015). However, the community study used self-reported psychosocial difficulties whereas we used carer-reports, and different respondents may result in a different pattern of findings.

In the present research, although young women reported more severe emotional problems in 2014 than in the matched 2009 sample, there were no significant differences in the percentages of young women scoring above the at-risk cut off score for emotional problems. On the one hand, this may suggest that, although young women were reporting higher levels of emotional problems in 2014 than in the matched 2009 sample, these emotional problems were not interfering with their daily life to a greater extent. On the other hand, it may suggest that meaningful data are being lost by the use of at-risk clinical cut off scores. Approximately one third of the sample scored below the at-risk clinical cut off score indicating risk of psychosocial difficulties. Future research should examine reasons for these youths accessing mental health services; for example, the measure may not have been sensitive to detect their particular difficulties, parents may have been under-reporting difficulties, or these youths may have been inappropriately referred to services.

Notwithstanding the above limitations, we found: 1) stability over time in the overall severity of psychosocial difficulties for adolescents accessing services, 2) an increase in the severity of young women's emotional problems, and 3) a decrease in adolescents' conduct problems. The findings of the present research may suggest that the criteria for accessing mental healthcare services might not necessarily be increasing. However, the severity of psychosocial difficulties in those adolescents accessing services may be changing in line with changes in the rates of psychosocial difficulties in the general population. Increased resources for universal and targeted interventions are needed to prevent and treat psychosocial difficulties in adolescents, given the increasing pressures adolescents experience. More research is

particularly needed into the role of universal protective factors, given the increasing severity of young women's emotional problems.

References

- Blum, R. W., Bastos, F. I. P. M., Kabiru, C. W., & Le, L. C. (2012). Adolescent health in the 21st century. *The Lancet*(379), 1567-1568. doi: 10.1016/S0140-6736(12)60407-3
- Bor, W., Dean, A. J., Najman, J., & Hayatbakhsh, R. (2014). Are child and adolescent mental health problems increasing in the 21st century? A systematic review. *Australian & New Zealand Journal of Psychiatry*, 48(7), 606-616. doi: 10.1177/0004867414533834
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. (2nd ed.). New York: Erlbaum.
- CORC. (2014a). Getting started - Snapshot approach, from <http://www.corc.uk.net/joining/getting-started/getting-started-snapshot-approach/>
- CORC. (2014b). Homepage, from www.corc.uk.net
- Department for Education. (2015). *Mental health and behaviour in schools: Departmental advice for school staff*. London: Department for Education.
- Durham University Mapping Unit. (2009/10). Children's Service Mapping: Caseload overview (2009/10) Strategic Health Authority. Retrieved 30th April 2015, from DUMU <http://www.childrensmapping.org.uk/tables/profile-43/>
- Fink, E., Patalay, P., Sharpe, H., Holley, S., Deighton, J., & Wolpert, M. (2015). Mental Health Difficulties in Early Adolescence: A Comparison of Two Cross-Sectional Studies in England From 2009 to 2014. *Journal of Adolescent Health*, 56(5), 502-507. doi: <http://dx.doi.org/10.1016/j.jadohealth.2015.01.023>
- Gilbody, S. M., House, A. O., & Sheldon, T. A. (2002). Outcomes research in mental health. *British Journal of Psychiatry*, 181, 8-17.
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 38(5), 581-586.
- Goodman, R., Meltzer, H., & Bailey, V. (1998). The strengths and difficulties questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*, 7, 125-130. doi: 10.1007/s007870050057
- Gopalan, G., Goldstein, L., Klingenstein, K., Sicher, C., Blake, C., & McKay, M. (2010). Engaging families into child mental health treatment: updates and special considerations *Journal of the Canadian Academy of Child & Adolescent Psychiatry*, 19(3).
- Green, H., McGinnity, A., Meltzer, H., Ford, T., & Goodman, R. (2005). *Mental health of children and young people in Great Britain, 2004*. London: Palgrave.
- Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image*, 17, 100-110. doi: 10.1016/j.bodyim.2016.02.008
- House of Commons Health Committee. (2014). Children's and adolescents' mental health and CAMHS. London: The Stationery Office Limited.
- Lessof, C., Ross, A., Brind, R., Bell, E., & Newton, S. (2016). *Longitudinal study of young people in England cohort 2: health and wellbeing at wave 2*. London: TNS BMRB.
- Leuven, E., & Sianesi, B. (2003). PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing [computer program] (Version revised 19 Jul 2012): Boston College Department of Economics.
- Livingstone, S., & Smith, P. K. (2014). Annual Research Review: Harms experienced by child users of online and mobile technologies: the nature, prevalence and management of sexual and aggressive risks in the digital age. *Journal of Child Psychology and Psychiatry*, 55(6), 635-654. doi: 10.1111/jcpp.12197
- McManus, S., Bebbington, P., Jenkins, R., & Brugha, T. (Eds.). (2016). *Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014*. Leeds: NHS Digital.
- McMartin, S. E., Kingsbury, M., Dykxhoorn, J., & Colman, I. (2014). Time trends in symptoms of mental illness in children and adolescents in Canada. *Canadian Medical Association Journal*, 186, E672-E678. doi: 10.1503/cmaj.140064

- Merikangas, K. R., He, J. P., Burstein, M., Swendsen, J., Avenevoli, S., Case, B., & Olfson, M. (2011). Service utilization for lifetime mental disorders in US adolescents: results of the National Comorbidity Survey–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry*, 50(1), 32-45.
- NHS. (2015). Governance Arrangements for Research Ethics Committees (GAfREC) Retrieved 13/03/15, 2015, from <http://www.hra.nhs.uk/resources/research-legislation-and-governance/governance-arrangements-for-research-ethics-committees/>
- Perou, R., Bitsko, R. H., Blumberg, S. J., Pastor, P., Ghandour, R. M., Grfroerer, J. C., . . . Huang, L. N. (2013). Mental health surveillance among children – United States, 2005—2011. *Centers for Disease Control and Prevention (CDC) MMWR Supplement*(62), 1-35.
- Rosenbaum, P. R., & Rubin, D. B. (1985). Constructing a control group using multivariate matched sampling methods that incorporate the propensity score. *The American Statistician*, 39, 33-38.
- Royal College of Psychiatrists. (2013). Building and sustaining specialist CAMHS to improve outcomes for children and young people: Update of guidance on workforce, capacity and functions of CAMHS in the UK. London: Royal College of Psychiatrists.
- StataCorp. (2011). *Stata Statistical Software: Release 12*. College Station, TX: StataCorp LP.
- The Children's Society. (2016). The Good Childhood Report 2016 Retrieved 7th November 2016, from http://www.childrenssociety.org.uk/sites/default/files/pcr090_mainreport_web.pdf
- von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., & Vandenbroucke, J. P. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *The Lancet*, 370(9596), 1453-1457. doi: 10.1016/s0140-6736(07)61602-x
- Young Minds. (2014). Stop cutting CAMHS services. Retrieved March, 2014, from http://www.youngminds.org.uk/about/our_campaigns/cuts_to_camhs_services