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Diversion in youth justice:

A pilot study of effects on self-reported mental health problems

RUNNING HEAD: Youth justice diversion and mental health

Abstract

As part of a larger study to evaluate the effects of a Liaison and Diversion scheme in community youth justice services, staff of newly established Youth Justice Liaison and Diversion (YJLD) teams undertook observational ratings and administered self-report mental health and risk measures to young people referred to this pathway. The overall objectives of the YJLD project were to divert young people from the criminal justice system, and to coordinate other services in order to reduce their likelihood of re-offending and the extent of their mental health problems. Data were collected from five local authority areas in different parts of England. Young people thereby referred had an average of 5.4 hours of contact with youth justice staff. For a sample of young people on whom data were available at the beginning and end of that process there was evidence of a significant reduction in problems and a small but significant correlation between the amount of individual contact time with YJLD staff and the extent of change observed. Absence of a comparison sample limits the drawing of firm conclusions; however recommendations are made for future controlled-experimental studies.

Longitudinal research suggests there may be a number of different pathways from offending in adolescence to a pattern of recidivist criminality in adulthood. Moffitt (1993, 2003) distinguished “adolescence time-limited” from “life-course persistent” delinquency, suggesting that only 5% of the members of the former subsequently became part of the latter cohort. Loeber, Farrington, Stouthamer-Loeber and White (2008) discerned an additional number of possible pathways, each having a characteristic profile over time, with a different likely age of onset, peak age of offence participation, and pattern of desistance over the ensuing years. Numerous studies indicate that those young people who become more frequently involved in offending or whose participation in it continues over a prolonged period are likely to report a number of other psychosocial problems in addition to delinquency itself. For the proportion of them who also experience additional difficulties in the form of mental health problems, the long-term prognosis may be less promising in terms of both offence careers and health status (Bailey, 2003). At the same time, there is firm evidence that effective interventions are available which are capable of reducing rates of both criminal offending (Garrido and Morales, 2007; Lipsey, 2009) and of mental health problems (Townsend et al., 2010) amongst young people who have broken the law.

Large-scale survey evidence suggests that adolescents in penal institutions report a higher rate of common mental health problems and of diagnosable mental disorders than are found in the community in general (Fazel, Doll and Långström, 2008; Lader, Singleton and Meltzer, 2003; Penner, Roesch and Viljoen, 2011). In a recent review Casswell, French and Roger (2012) integrated findings from nine surveys of young offenders’ mental health. Although rates of such problems may be higher in institutional settings, it has also been suggested that those remaining in the community may “self medicate” to cope with their problems by regular use of alcohol or other drugs (Bailey and Chitsabesan, 2006).

It is widely suggested that the prospects of achieving good outcomes could be improved if young people manifesting multiple problems can be identified as early as possible.

Unfortunately there also evidence that the level of take-up of services in the community is

relatively low (Barrett, Byford, Chitsabesan and Kenning, 2006). One strategy that might have the potential to reduce the likelihood of placement in institutions, of adverse outcomes and also of monetary costs is *diversion*, entailing an early decision to seek an alternative to prosecution and to commence a process of liaison between youth justice staff and other agencies and services. The present paper reports on the preliminary evaluation of such a scheme, piloted in a number of local authority areas in England and Wales during 2009-2012.

Mental health of young offenders in the community

Young people under community supervision have been found to exhibit higher levels of mental health problems than the population in general. In a study in New South Wales, Kenny, Lennings and Nelson (2007) administered a number of self-report measures, including the *Adolescent Psychopathology Scale* (Short Form: APS-SF) and the *Childhood Trauma Questionnaire* (CTQ) to 800 young offenders (mean age 17 years) under juvenile justice supervision. Forty per cent of the males and 38% of the females reported symptoms within the severe range on at least one subscale of the APS-SF; and 23% of males and 38% of females reported some form of severe trauma (emotional or physical neglect; emotional, physical or sexual abuse). Similar findings have emerged from research in the United Kingdom. Chitsabesan et al. (2006; Chitsabesan and Bailey, 2006) compared a sample of 151 young offenders in custody with 150 in the community (overall mean age, 15.7 years). Using the *Salford Needs Assessment for Adolescents* (SNASA), it was found that high proportions of these groups had multiple needs across several areas of psychosocial functioning, including relationships, education and work, mental health, violence, and other forms of risky behaviour. Much of this need was classified as unmet.

Several studies have examined the frequency of problems reported by young people seen by Youth Offending Teams (YOTs). Stallard, Thomason and Churchyard (2003) reported a cross-sectional study of mental health and other problems amongst those seen by Bath and North-East Somerset YOT. Of the 38 young people (mean age, 15.26 years) whose cases were

open on a single randomly selected day, 68% reported recent alcohol consumption. Amongst 25 who were interviewed, 56% were identified as having “potentially significant mental health needs” (p.40) and 32% as presenting very severe problems in at least one domain. Carswell et al. (2004) surveyed problems reported by young offenders supervised by an inner London YOT. Of 145 potential participants, 52 (36%) were interviewed using the *Psychosocial Assessment for Young People and Children* (PAYC) and their responses compared with a community sample (n=38) with no known offence histories. Young offenders reported a far higher rate of problems than for the community group, and a significantly higher level of depression/misery, excessive worries, and problematic substance misuse. Walsh et al. (2011) carried out a similar study in a YOT in the east of England, where 44 young people (mean age 15.64 years) completed a composite questionnaire. Almost one-third of the group (32%) expressed worries about their mental health, and 34% reported they had seen or were currently seeing a mental health practitioner.

The present study of diversion is conducted in a context where, although there are several approaches to implementing it with young offenders (Skowra and Powell, 2006), and although there is a review of 43 studies of diversion for adult offenders in the United States (Lange, Rehm and Popova, 2011), little is known about its effectiveness with younger age-groups. Lange et al. found diversion was only as effective as the services to which participating offenders were diverted. The question arises therefore as to what might be the benefits of introducing such a scheme in a youth justice context.

The YJLD pilot scheme tested here was established by the Department of Health in England in 2008. Its overall objectives were *diversion*, entailing the movement of vulnerable young people away from the criminal justice system towards mental health, emotional support and welfare services; and *liaison*, which involved “brokerage”, communication with a range of agencies and marshalling them to provide the best combination of services to address each young person’s needs. The pilot scheme was located in six areas. All had a common remit focused on early intervention with vulnerable young people entering the criminal justice system

(e.g. at first arrest). This included screening and identification of vulnerabilities, delivery of brief interventions (e.g. counselling), liaison with specialist services (e.g. primary mental health) and, where appropriate, diversion out of the youth justice system. Beyond this there was wide heterogeneity in service design, service delivery and the severity of client problems between the six teams. YJLD teams operated separately from but in conjunction with YOTs, Child and Adolescent Mental Health Services (CAMHS) and other professional groups regardless of where they were located. Although nominally called 'diversion', the scheme was also concerned with early intervention and liaison. The main purpose of the teams was to identify needs and make referrals to appropriate agencies. While most referrals involved "low level" offending, some teams were referred more serious offenders as well, who could not be diverted but helped through the system via working in collaboration with the other agencies.

Research questions and methods

The present study formed part of a larger evaluation which included several other elements, reported elsewhere (Haines et al., 2012). It was designed to explore changes in young people's mental health needs and other vulnerabilities following access to the YJLD scheme. The overall aim was to evaluate the potential impact of the scheme on participants' well-being and extent of reporting of mental health problems. More specifically the following questions were addressed:

- Are there any changes in young people's mental health and wellbeing after access to the YJLD scheme?
- If so, are there any components of the YJLD associated with these changes 12-15 weeks after entry to the programme?
- Are there specific associations between variables that moderate any observed effects (e.g. within different sub-groups, with respect to gender, ethnicity, etc.)?

To address these questions, data that were routinely collected by the YJLD workers as part of the comprehensive, holistic assessments of young people going through the scheme were accessed and analysed following ethical approval by the Department of Health and Ministry of

Justice. Assessments based on two validated mental health outcome measures were conducted at entry point (i.e. when the young person agreed to be referred to the YJLD programme) and at exit point or moment of transfer further onward. In the majority of cases the latter took place approximately three months after entry to the scheme.

Participant sample

The cohort for this study includes those young people who were assessed using two screening measures, the *Health of the Nation Outcome Scales for Adolescents* (HoNOSCA) and *Screening Questionnaire Interview for Adolescents* (SQIfA) at their individual entry points (=T₁). This group consisted of young people who were identified through the screening process as being in need of further assessment or intervention; and who were therefore re-assessed at end-points up to ten months later (=T₂). Data of this kind were available from five experimental sites, comprising two in London and one each in the Midlands, North-West, and North-East of England. Data were available on a total of 90 young people but there were varying patterns of missing information within this. The study includes only those young people who had given informed written consent to participate in the research by permitting access to routinely conducted assessments and who had also agreed to return for a follow-up assessment.

The mean age at time of referral was 14.88 years (SD=1.77). There were no between-site differences in age. There were 61 males and 24 females. Information on gender was missing for 5 participants. There was a marginally significant between-site difference in gender distribution ($\chi^2=15.89$, $df=8$, $p=.044$). For the 82 participants whose ethnic group membership was known, the distribution was as follows: White, 55 (67%), Black, 13 (15.8%), Asian, 3 (3.7%), Mixed, 9 (11%), Other, 2 (2.5%). The majority of the members of ethnic minority groups (20/27 or 74%) were from the two London boroughs and a statistical test of this trend was highly significant ($\chi^2 = 50.68$, $df=20$, $p<.001$).

Slightly more than one-third of the sample (n=33, 36.7%) had a known history of previous offending whereas a larger fraction, just over half of the sample (n=50, 55.6%) had no such

history. Data were missing on a further 7 participants. For this group of young people, the mean number of recorded hours of contact with YJLD services was 5.4 hours (SD=5.46) with a range from 1 to 30 hours.

Mental health outcome measures

From a wide array of possible measures, two were selected for data collection.

Health of the Nation Outcome Scales for Adolescents (HoNOSCA; Gowers et al., 1999a, b).

This consists of a series of 15 scales on which workers rate a young person according to the extent to which he/she presents problems or vulnerabilities in key areas of functioning. Items are scored on a five-point scale from 0 (no problem) to 4 (severe/very severe problem). The first 13 rating scales, forming Section A, focus on specific problem areas (e.g., disruptive, antisocial, or aggressive behaviour; alcohol or substance/solvent abuse; emotional and related symptoms) whereas the last two items, forming Section B, address whether there have recently been gaps in knowledge of the young person's difficulties amongst significant caregivers, or in information concerning what services could be provided. Scores on the 13 problem scales can be summed to produce a Section A total and it is also possible to generate an overall total score. Totals on section A range from 0-52. In the initial study of the scale with 1,276 children and adolescents, the mean score for inpatients was 15.51 and for outpatients 11.18 (Gowers et al., 1999b).

The HoNOSCA has been found to be reliable and valid and has been described as "easy to use" by practitioners (Gowers et al., 1999b, p.414). The inter-rater reliability for the 13 Part A items, based on a study using 20 clinical vignettes has been reported as 0.84 (95% CI: 0.75-0.93) (Hanssen-Bauer et al., 2007). It is accepted as a sensitive and valid measure of change amongst young people with mental health problems (Garralda et al., 2000), has been tested and validated in several countries outside the UK (e.g. Hanssen-Bauer et al., 2007; Lesinskiene et al., 2007). A training event was held with practitioners from the participating YJLD sites.

Screening Questionnaire Interview for Adolescents (SQIfA; Youth Justice Board (YJB), 2003). This 16-item assessment tool was designed as a speedy, broad-ranging self-report questionnaire that readily lends itself to risk assessment and monitoring. It contains screening items for eight common or important mental health problems in adolescence. As mental health needs can sometimes change over relatively short time periods, the SQIfA has the advantage of being easily repeatable. Eight sub-scores, each of which may vary between 0 and 2, can be obtained, respectively for: alcohol use; drug use; depression; anxiety/worries; trauma symptoms; self-harm; ADHD/hyperactivity; and psychotic symptoms.

The YJB mental health screening process has been derived from a validated research assessment of mental health needs among young offenders and was modified from the earlier Salford Needs Assessment Schedule for Adolescents (SNASA: Kroll *et al.*, 1999). The SQIfA has acceptable overall psychometric properties for all domains as a first stage screening questionnaire: it has a reported *sensitivity* (measure of true positives) of 80%, *specificity* (true negatives) of 55%, and *positive predictive value* (proportion of test positives that are true positives) of 61% (Kroll *et al.*, 2002). Members of staff of participating YJLD Teams were also provided training in the administration of this measure. While it would have been additionally valuable to have had assessment information completed by other key people in each young person's life (e.g. parent, carer or teacher), this was not practically possible.

Results

Data analysis

Comparisons were made between the five YOT areas from which data were available, and also between the scores obtained in the present study and those reported from the use of the HoNOSCA and SQIfA in other settings. The mean time-difference between the two assessments (T_1 and T_2) across all sites was 95.79 days ($sd=65.76$ days), which corresponds to an average of 13.68 weeks or approximately 3½ months. However, there was a sizeable range within this, from 17 to 372 days. Differences in scores from the two time-points (T_1 and T_2) were analysed

to measure possible changes in young people's identified mental health needs and vulnerabilities. Any changes were correlated with other information available on this group of young people (e.g. demographics, actions taken by the YJLD staff/YJLD intervention, number of appointments kept, and number of hours of contact).

Means and other statistics for selected scores from the clinical measures at the point of entry assessment are shown in Table 1. As can be seen HoNOSCA data were available for 88 of the sample, and SQIfA data for 62 of the sample, at the time of referral and assessment (T₁). Comparisons between the general level of scores found here with those obtained in other studies allows an estimation of the relative level of difficulties of the YJLD referrals. For example Garralda et al. (2000) obtained a mean HoNOSCA clinical item score of 11.4 amongst 203 adolescents seen as out-patients in CAMHS. However, the mean age of their sample was only 10.4 years, therefore given the likely developmental difference the present sample appear comparatively less troubled. Working with a group closer in age to the present sample, but from a very different setting, that of an adolescent in-patient secure mental health unit, Hunt and Wheatley (2009) reported respective mean scores of 18.82 and 18.67 for two separate raters. Similar findings were reported by Harnett et al. (2005). These comparisons suggest a relatively milder degree of impairment amongst the present YJLD sample than was found amongst either of these two other groups. This pattern of scores is to some extent reassuring as it indicates that the level of need targeted by YJLD is generally appropriate, and the possibility is opened up of averting the escalation of problems to a more serious level, which directly accords with the objectives of diversion.

< Table 1 about here >

Pre-to-post-test comparisons

Paired-sample correlations between test scores at T₁ and T₂ for the HoNOSCA Scale A and sub-scales of the SQIfA are shown in the third column of Table 2. These indicate that most sub-scales are reasonably stable over this relatively short period. Pre-test and post-test means and standard deviations on selected scales are also shown in Table 2 (columns 5 and 6). The table

also shows significance test and p values for repeated measures comparisons (pre- to post-test, T_1 to T_2). This suggests that in addition to the stability of the measures as just described, the absolute level of scores declines in the majority of cases. Figure 1 shows the result of a repeated measures t-test in box-plot format, with 95% confidence intervals, for the HoNOSCA Section A total at T_1 and T_2 respectively. Note that the figure includes a small number of outlier scores.

< Table 2 about here >

< Figure 1 about here >

This result indicates that overall there is a discernible change in assessed status in relation to a number of the measured variables between times 1 (referral and pre-test) and 2 (post-test). In statistical terms this is highly significant for two variables, HoNOSCA Section A total score and SQIfA self-harm score. For SQIfA depression and anxiety there is also a statistically significant result though the extent of change is not large. For other variables however, there are no statistically significant differences found, although all changes, apart from alcohol use, are towards reduced levels of problematic experience. In some instances (for trauma, ADHD/hyperactivity and psychotic experiences) numbers were very low. Changes in observed alcohol and drug use were also non-significant. A possible explanation for this absence of an observed effect may be that substance use problems are under considerably more influence of situational factors (e.g. group pressure, peer relations, gang affiliation) than those connected with personal well-being, making these types of problems more difficult to change. However, only further research entailing more intensive measurement, involving a larger sample, or employing in-depth qualitative analysis offers the prospect of being able to clarify this.

For both HoNOSCA and SQIfA scores, there was sizeable attrition in sample sizes from T_1 to T_2 (approximately 40% in both groups). To check whether the participants available at post-test might be different in some important respect from those who were not, comparisons were made between the two sub-groups at T_1 . There was no difference in age ($t=1.65$, $p=.102$), school attendance score ($t=-.51$, $p=.609$), HoNOSCA Section A total ($t=-0.85$, $p=.397$), in rated alcohol

use ($t=.52$, $p=.602$), drug use ($t=1.66$, $p=.102$), or any other clinical variables. Thus there is no readily evident reason to suggest that those evaluated at post-test were in any respect a clinically less problematic sub-group than those who were not.

There was however a difference between these two sub-groups in their scores on the second section of the HoNOSCA, which addresses levels of knowledge of problems and services. When account was taken of the widely differing variances of the two sub-groups defined in this way, the difference was significant ($t=-2.26$, $p=.028$). This opens the possibility that those who have dropped out may have done so either because their difficulties were less well understood by YJLD staff; or because they were less well informed regarding the range of services they could access.

Factors associated with change

An attempt was made to identify correlates of observed change, and for this purpose change scores were computed for HoNOSCA Section A. Given the reduced sample sizes available, these analyses must be interpreted cautiously.

One variable potentially associated with extent of change is the number of direct contact hours between the young person and a YJLD worker or other resources. A sizeable fraction of the total sample ($n=19$, 22.9%) received only one hour of contact; a further 65.1% received between two and ten hours of contact, with the remaining small proportion (12%) receiving more than this. For participants assessed at both time points, correlations were computed between HoNOSCA change scores and numbers of recorded contact hours and appointments kept. Both were statistically significant (for hours spent, $n=49$, $r=-0.375$, $p=.008$; for appointments kept, $n=50$, $r=-.318$, $p=.025$). That is, more appointments kept and hours of contact were associated with larger change scores. Neither age at referral nor HoNOSCA Section A total score at initial assessment was correlated with change scores, though the former showed a trend towards significance.

Conclusion

The results presented here are broadly positive in that they indicate an improvement in the perceived and self-reported mental health and wellbeing of young people with access to the YJLD scheme in three out of the five pilot sites from which those types of data were available. Clearly however, this can only be a provisional conclusion at best. First, the observed improvements occurred in several domains, but not in others. Those differences may be a function of the different factors that influence feelings of anxiety or depression as compared to those which influence, for example, alcohol or drug use. Second, there are some important limitations to this study which impose restrictions on how the results can be interpreted. Foremost is the problem of lower than expected sample sizes. It was initially planned within this evaluation to have 25 completed questionnaires at both points in time for each of six sites (yielding a total sample size of 150). Both the confidence with which trends can be detected and general conclusions drawn, and the capacity to undertake meaningful sub-group analyses (e.g. by study site) are considerably impeded by the low overall numbers. Given the 'hard to reach' characteristics of the population, these low numbers are understandable but nevertheless create problems of statistical power. Secondly, it would ideally have been preferable to obtain assessment information from other key individuals such as parents or teachers, but this was not possible in practice. Thirdly, while there is an observed reduction in scores on the mental health assessments from Time 1 to Time 2, it is difficult to draw causal inferences from this. There is no untreated comparison sample and there would have been no possibility of allocating young people thought to have problems to diversion services on a random basis. Furthermore, there is a residual possibility that some troubling mental states may be short lived or episodic in nature and it would be helpful to have a normative dataset that captured any such trends.

For example, there are studies indicating that in a proportion of cases in adolescence, depression may have an episodic pathway, more so than anxiety states and other mental health problems (Prenoveau et al., 2011). As might be expected, such a profile is associated with fewer comorbid problems in the longer term (Jonsson et al., 2011). However, there is a limited

evidence base on milder mental health problems and threats to well-being that may be relatively short-lived. The possibility therefore remains that, while no difference could be found at pre-assessment between those who were or were not available at follow-up, there may have been other unmeasured differences that could account for the observed changes, such that the follow-up sample is subject to some unknown selection bias.

These findings can be compared with those of Garralda et al. (2000) who, working with a sample of 248 attenders at two child and adolescent psychiatry out-patient clinics in London, found a lower (but still statistically significant) correlation between numbers of sessions attended and change scores, but a significant correlation between HoNOSCA case severity and change scores. Unlike Garralda et al. (2000) however, there was no evidence here of an association between numbers of appointments kept or change scores and initial level of case severity.

Whilst less directly relevant to mental health status, it may be worth noting that a meta-analysis on criminal justice diversion for young offenders conducted some time ago found a highly significant positive correlation ($r=.69$, $p=.001$) between young offenders' amounts of contact with criminal justice staff and a mean effect size combining behavioural, attitudinal, and recidivism outcome variables (Gensheimer et al., 1986). This signifies that there may be value in a further, larger-scale trial across more sites, possibly involving more intensive monitoring, or other forms of data collection. This could be valuable both for its capacity to take account of other extraneous factors, and creating the possibility of conducting more elaborate analyses of the interactions between independent, moderator, and dependent variables. Put more simply, a study is required with not only a larger total sample but also larger sub-samples at the separate sites, and possibly also a greater number of sites. This is important in order to provide adequate statistical power for testing hypotheses about the possible effects of treatment, and to disentangle any observed trends from other factors that might be influencing outcomes. To execute such a study well would ideally also require gathering a wider set of information about young people, and more details concerning the kinds of interventions that were used in each

case. While for ethical reasons such a fuller study clearly could not employ random allocation to services, there might be potential in adopting a quasi-experimental design that incorporates propensity-score matching with waiting list comparison samples, as proposed for example by Cuellar, McReynolds and Wasserman (2006).

The findings of this study are suggestive of the possible presence of a beneficial effect of diversion and intervention on the mental health status of young people potentially at an early stage of an offending career. Findings emerging from the reoffending study – part of the same evaluation – reported by Haines et al. (submitted), indicate that reoffending rates amongst a cohort of young people with access to the YJLD scheme were no different to those of a matched cohort of young people without such access. But while the latter effects were not statistically significant with regard to total re-offence rates, there was a large average difference in time to re-offending, with the comparator sample recidivating much earlier than the YJLD sample. A similar finding was reported by Cuellar et al. (2006) who evaluated the Special Needs Diversionary Program in Texas, and given evidence concerning the numbers of young people in the community who experience mental health problems, concluded that “...the potential of such mental health diversion programs to reduce crime is large” (2006, p.209). On that basis, a further and larger-scale trial of the evaluation piloted here appears amply justified.

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Table 1: Clinical scores for all participants seen at T₁

Measure	n	Mean	SD
HoNOSCA Section A	88	12.39	8.31
SQIfA Alcohol	62	0.37	0.81
SQIfA Drug	62	0.27	0.75
SQIfA Depression	62	1.11	1.29
SQIfA Anxiety	62	0.52	0.92
SQIfA Trauma	62	0.61	1.12
SQIfA Self-harm	62	0.29	0.68
SQIfA ADHD/hyperactivity	62	0.27	0.85
SQIfA Psychotic symptoms	62	1.68	12.57

Table 2: Paired sample (test-retest) correlations T₁-T₂ and pre- and post-test changes on selected variables

Measure	n	Test-retest r	p	Pre-test mean (sd)	Post-test mean (sd)	t-test	P
HoNOSCA Section A	53	0.82	<.001	12.84 (6.64)	9.28 (7.48)	6.26	<.001
SQIfA Alcohol	37	0.52	.001	0.38 (0.86)	0.71 (1.06)	1.56	.128
SQIfA Drug use	37	0.73	<.001	0.19 (0.57)	0.08 (0.36)	1.67	.103
SQIfA Depression	37	0.45	.005	1.51 (1.24)	1.08 (1.06)	2.16	.037
SQIfA Anxiety	37	0.59	<.001	0.57 (0.83)	0.30 (0.66)	2.37	.023
SQIfA Trauma	37	0.84	<.001	0.84 (1.26)	0.68 (1.13)	1.43	.160
SQIfA Self-harm	37	0.61	<.001	0.46 (0.83)	0.14 (0.42)	2.94	.006
SQIfA ADHD/hyperact	37	0.34	.185	0.41 (1.04)	0.19 (0.74)	1.16	.254
SQIfA Psychotic	37	0.12	.942	2.81 (16.27)	0.50 (0.33)	1.03	.309