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# Who uses Recovery Colleges? Casemix analysis of sociodemographic and clinical characteristics and representativeness of Recovery College students

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### **Objective**

Recovery Colleges support recovery for adults with mental health problems, through coproduction and education principles. This study aimed to determine whether students at three Recovery Colleges in England were representative of mental health service users.

#### Method

Gender, age, ethnicity, diagnosis, involuntary detention and inpatient admission were extracted from clinical records. Data for all service user students enrolled and those who had attended 70% of a Recovery College course were compared to mental health services caseloads, using chi-square goodness of fit tests.

#### **Results**

Clinical records were identified for 1,788 students. Significant differences were identified for gender, age and diagnosis (p<0.001). In some Colleges, more students had recent inpatient admissions or involuntary detentions.

#### **Conclusions and Implications for Practice**

Service user students were largely representative of mental health service users, although some groups were under-represented. Further research is needed to understand why, so that Recovery Colleges can continue to address inequalities.

#### **Key words**

Recovery College, demographics, accessibility, service use, inclusivity

## **Impact and Implications**

This is the first multi-site investigation into the characteristics of Recovery College students. It found that students are largely representative of people using mental health services, at different stages of their recovery. However, Colleges and mental health services could work

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on improving access for male, younger and older service users, and individuals with certain mental health diagnoses.

#### **Background**

Recovery Colleges follow an adult education model, promoting self-management and recovery through co-produced courses (i.e., co-created and co-facilitated by experts-by-training and experts-by-experience). Since 2009 (Perkins et al., 2018), Colleges have spread rapidly, with around 77 in England 2021, and more worldwide. They foster processes of connectedness, hope, identity, meaning and empowerment (Leamy et al., 2011), helping students towards Bill Anthony's definition of recovery of "living a satisfying, hopeful, and contributing life" (Anthony, 1993, p. 527). Recovery Colleges contribute to service development (Perkins et al., 2012) and Anthony's vision for recovery-oriented systems (Anthony, 2000).

Recovery Colleges differ from clinical services; individuals self-enrol and graduate from courses from a prospectus. Many students also use mental health services provided by local National Health Service 'NHS Trusts', referred to hereafter as 'service user students'. However, Colleges are also attended by informal carers, mental health professionals, and the public.

Recovery Colleges are associated with outcomes such as developing a sense of identity and hope, increased opportunities, lifestyle, social and wellbeing benefits (Western Australia Mental Health Commission, 2018). Those who completed over 70% of a course showed reduced service use (Bourne et al., 2018).

A defining principle of Recovery Colleges is inclusivity (Perkins et al., 2012). However, there is little research on how they serve diverse populations. An evaluation of Sussex Recovery College in England, comparing the whole student cohort to the corresponding

Trust caseload (i.e. those using the local mental health services) and the local population, found that students were more representative of the population than the Trust caseload was in terms of ethnicity and sexual orientation, but men and over 60yrs were under-represented compared to both (Meddings et al., 2019). A one-College study found that service user students had similar illness severity to the Trust caseload (Bourne et al., 2018). Comparing the characteristics of mental health service users who register/ attend the Recovery College with the wider caseload may indicate if some groups of service users are accessing the College less.

## Aims and objectives

Our aim was to assess the representativeness of Recovery College service user students compared to affiliated Trust caseloads, to determine whether the Recovery College is equally accessed by those using mental health services. The objectives were to compare the sociodemographic and clinical characteristics of the Trust caseload with (a) enrolled service user students and (b) completer service user students (who attended over 70% of a course).

#### Methods

#### Sample

The sample was comprised of adults (18yrs+) currently registered with mental health services across three NHS Trusts. Trusts incorporate various services within a catchment area, including community mental health teams, inpatient facilities, and specialist mental health services.

#### **Settings**

Leicester, South London and Maudsley (SLaM) and Sussex Recovery Colleges were selected from different regions of England, with different extents of urbanicity and ethnic diversity of their populations.

#### Measures

Gender, age category, ethnicity category, primary clinical diagnosis (grouped using ICD10 categories), Mental Health Act (legislation allowing compulsory detention/ treatment) and mental health hospital stay in the past 24 months were compared. The most recently recorded information was used.

## **Procedures**

Research Ethics Committee approval was obtained (Nottingham REC1, 18.1.17, 16/EM/0484). At each site on 01/07/2017, the Recovery College manager identified current students who had self-reported that they also used Trust services. Attendance records showed who had completed a course, defined as >70% attendance (Bourne et al., 2018; Rinaldi, 2012). The Trust provided aggregated sociodemographic and clinical information for these students and for the Trust caseload. Researchers had no access to individual clinical records and the data were kept within Trust IT systems.

## Analysis

Chi-square goodness of fit tests compared the proportions of (a) enrolled service user students and (b) completer service user students with the Trust caseload, using an online calculator (<a href="https://www.socscistatistics.com/tests/goodnessoffit/default2.aspx">https://www.socscistatistics.com/tests/goodnessoffit/default2.aspx</a>). Missing data were excluded. Bonferroni correction was used to adjust for multiple comparison, where p<0.001 indicated significance.

#### **Results**

Recovery College managers reported a total of 2,654 students enrolled on 01/07/2017: 1,446 in Leicester; 348 in SLaM; and 860 in Sussex. Of these, 1,792 (67.5%) self-identified as service users. At the two Colleges where data were available, 116 (11.6%) students self-identified as informal carers (Sussex n=92(13.5%), SLaM n=24 (7.5%)) and n=73 (7.3%) as mental health staff (n=Sussex 36 (5.3%), n=SLaM 37 (11.5%)).

Trust clinical records were located for n=1,788 (99.8%) service user students. N=644 (36.0%) had attended 70% of a course (completer students): n=234 (26.5%) at Leicester, n=105 (44.9%) at SLaM, and n=304 (45.4%) at Sussex. Affiliated NHS Trust caseloads was comprised of n=23,749 for Leicestershire, n=33,381 for SLaM and n=39,241 for Sussex.

There were significantly more female than male service user students enrolled at Leicester and SLaM Recovery Colleges than the affiliated Trust caseloads ( $\chi^2(1, 23745)=19.09$ , p<.001) and ( $\chi^2(1, 33366)=21.36$ , p<.001). This pattern was similar but non-significant for completer service user students. With regards to ethnicity, no significant differences were found at the three sites. There was a significant difference in age at all Colleges across both groups. Use of summary data prevented post-hoc comparisons for significance, but percentages appeared to show relatively more middle-aged (45-65yrs) students, fewer under 25yrs and over 65yrs than in the overall Trust caseload (see Table 1).

#### Insert Table 1 here

In Leicester, the diagnoses of both enrolled ( $\chi^2(4, 3685)=79.51$ , p<.001) and completer ( $\chi^2(4, 3685)=18.52$ , p<.001) students differed significantly to those of the Trust caseload. There appeared to be relatively more students diagnosed with psychotic disorders, mood disorders and personality disorders, whilst other disorders were under-represented (see Figure 1 and Appendix 1). A similar pattern was observed for Sussex Recovery College ( $\chi^2(4, 8733)=68.96$ , p<.001) ( $\chi^2(4, 8733)=31.39$ , p<.001), but for SLaM this was non-significant.

## Insert Figure 1 here

In Leicester, both groups of students were more likely to have had an inpatient admission than the Trust caseload ( $\chi^2(1, 23746=44.18, p<0.001$ ) ( $\chi^2(1, 23746)=15.61, p<.001$ ), as were enrolled ( $\chi^2(1, 39241)=19.51, p<.001$ ) but not completer students in Sussex (See Table 2). Enrolled but not completer students at Sussex were more likely to have experienced the Mental Health Act ( $\chi^2(1, 39241)=32.00, p<.001$ ), with no significant difference found in SLaM, the other comparable College.

#### Insert Table 2 here

#### **Discussion**

Our findings align with the previous single-site study at Sussex Recovery College (Meddings et al., 2019), although men were no longer under-represented in our study in Sussex, perhaps due to changes by the College (e.g. wording of course prospectus). Increasing representation of younger and older Recovery College staff may help to increase diversity in age (Meddings et al., 2019). This is important, as those accessing mental health support are increasingly over 65yrs old (Faculty of Public Health and Mental Health Foundation, 2016;

Nash, 2017), and the majority of mental health conditions begin before 24yrs (Kessler et al., 2005).

Like Bourne et al (2018), our findings suggested that students were more likely to have severe non-psychotic disorders and psychosis. However, in two Colleges, those with diagnoses categorised as 'other', such as intellectual disabilities and dementias, who make up a high proportion of mental health caseloads, appeared to be under-represented. Healthcare staff may believe recovery is less relevant to particular groups (Slade et al., 2014), contrary to the philosophy that recovery is for all (Department of Health, 2011). Alternatively, there may be concerns about the learning expectations of a 'College', and accommodations for those with cognitive difficulties may need to be made more explicit.

## **Strengths and limitations**

This study involved three diverse Recovery Colleges in different regions of England, and linkage to Trust-wide data. Several limitations apply. Only NHS-affiliated Recovery Colleges were included, limiting generalisability. Also, the services each Trust included in total caseload figures was unclear. Much data was missing, preventing comparisons for disabilities or sexuality and limiting validity of some conclusions. Finally, the study design prevented analysis of smaller groups (e.g. gender non-binary).

#### **Conclusions**

We found diversity amongst service user students, although some groups were underrepresented. Recovery Colleges are adapting to encourage engagement of these students, e.g. co-producing more dementia courses (Lowen et al., 2019). A new form of Recovery College, 'Discovery Colleges', are being developed for younger students (Hopkins et al., 2018). Our study directs future research to specific groups to explore why they may be under-represented, to continue addressing barriers to recovery.

#### **Declaration of interest**

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#### References

- Anthony, W. A. (1993). Recovery from mental illness: the guiding vision of the mental health service system in the 1990s. *Psychosocial rehabilitation journal*, *16*(4), 11.
- Anthony, W. A. (2000). A recovery-oriented service system: Setting some system level standards.

  \*Psychiatric rehabilitation journal, 24(2), 159.

- Bourne, P., Meddings, S., & Whittington, A. (2018). An evaluation of service use outcomes in a recovery college. *Journal of Mental Health*, 27(4), 359-366.
- Department of Health. (2011). *No Health Without Mental Health*.

  <a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/213761/dh\_124058.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/213761/dh\_124058.pdf</a>
- Faculty of Public Health and Mental Health Foundation. (2016). Better mental health for all: a public health approach to mental health improvement. In.

  <a href="https://www.mentalhealth.org.uk/publications/better-mental-health-all-public-health-approach-mental-health-improvement">https://www.mentalhealth.org.uk/publications/better-mental-health-all-public-health-approach-mental-health-improvement</a> Faculty of Public Health and Mental Health Foundation London.
- Hopkins, L., Foster, A., & Nikitin, L. (2018). The process of establishing Discovery College in Melbourne. *Mental Health and Social Inclusion*, 22(4), 187-194.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 593-602.
- Leamy, M., Bird, V., Le Boutillier, C., Williams, J., & Slade, M. (2011). Conceptual framework for personal recovery in mental health: systematic review and narrative synthesis. *The British Journal of Psychiatry*, 199(6), 445-452.
- Lowen, C., Birt, L., & West, J. (2019). Recovery colleges and dementia courses—a scoping survey.

  Mental Health and Social Inclusion, 23(4), 166-172.
- Meddings, S., Walsh, L., Patmore, L., McKenzie, K. L. E., & Holmes, S. (2019). To what extent does Sussex Recovery College reflect its community? An equalities and diversity audit. *Mental Health and Social Inclusion*, 23(3), 136-144.
- Nash, A. (2017). National population projections: 2016-based statistical bulletin. *Office for National Statistics (ONS) October2015 Available at*<a href="https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2015-10-29">https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2015-10-29</a> [Google Scholar].

- Perkins, R., Meddings, S., Williams, S., & Repper, J. (2018). *Recovery colleges 10 years on*.

  Retrieved from <a href="https://imroc.org/wp-content/uploads/2018/03/ImROC-Recovery-Colleges-10-Years-On.pdf">https://imroc.org/wp-content/uploads/2018/03/ImROC-Recovery-Colleges-10-Years-On.pdf</a>:
- Perkins, R., Repper, J., Rinaldi, M., & Brown, H. (2012). *Implementing Recovery Through*Organisational Change Briefing Report. Chapter 1: Recovery Colleges.

  <a href="https://imroc.org/resources/1-recovery-colleges/">https://imroc.org/resources/1-recovery-colleges/</a> London: Centre for Mental Health/NHS

  Confederation: Mental Health Network
- Rinaldi, M., Marland, M., Wybourn, S. (2012). *Annual Report 2011 2012. South West London Recovery College*. London: South West London & St George's Mental Health NHS Trust.
- Slade, M., Amering, M., Farkas, M., Hamilton, B., O'Hagan, M., Panther, G., . . . Whitley, R. (2014).

  Uses and abuses of recovery: implementing recovery-oriented practices in mental health systems. *World psychiatry*, *13*(1), 12-20.
- Western Australia Mental Health Commission. (2018). *Literature review to inform the development of recovery colleges in Western Australia*. Retrieved from <a href="https://www.mhc.wa.gov.au/media/2329/final-recovery-college-literature-review-28-march-2018.pdf">https://www.mhc.wa.gov.au/media/2329/final-recovery-college-literature-review-28-march-2018.pdf</a>:

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Table 1: Demographic characteristics of Recovery College service user students compared with affiliated Trust caseload

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	Leicester Recovery College			SLAN	A Recovery C	College	Sussex Recovery College			
n (%)	Service user students	Completer students	Trust caseload	Service user students	Completer students	Trust caseload	Service user students	Completer students	Trust caseload	
Total	884	234	23,749	234	105	33,381	670	304	39,241	
Gender										
Female	556 (62.9)	147 (62.8)	13,248 (55.8)	150 (64.1)	60 (57.1)	16,198 (48.5)	387 (57.8)	181 (59.5)	21,636 (55.1)	
Male	325 (36.8)	86 (36.7)	10,497 (44.2)	84 (35.9)	45 (42.9)	17,168 (51.4)	280 (41.8)	121 (39.8)	17,571 (44.8)	
Missing	3	1	4	0	0	15	3	2	34	
Comparison (chi-squared)	19.09 p<0.001	5.02 p=0.025		21.36 p<0.001	2.79 p= 0.095		p=0.143	2.74 p= 0.098		
Ethnicity										
White / White British	637 (82.1)	163 (82.3)	13,834 (82.3)	126 (57.5)	60 (61.9)	15,663 (60.5)	571 (92.2)	262 (92.6)	29264 (90.6)	
Asian / Asian British	80 (10.3)	23 (11.6)	2,108 (12.5)	16 (7.3)	3 (3.1)	1,361 (5.3)	7 (1.1)	3 (1.1)	441 (1.4)	
Black / Black British	21 (2.7)	4 (2.0)	419 (2.5)	51 (23.3)	24 (24.7)	6,251 (24.1)	7 (1.1)	4 (1.4)	376 (1.2)	
Mixed / other	31 (4.9)	8 (4.0)	450 (2.6)	26 (11.8)	10 (10.3)	2,615 (10.1)	34 (5.5)	14 (5)	2,214 (6.6)**	
Missing	115	36	6938	15	23	7,491	51	21	6,946	
Comparison	8.95	1.89		2.95	0.93		1.68	1.64		
(chi-squared)	p=0.299	p=0.596		p=0.400	p=0.818		p=0.641	p=0.651*		
Age										
Under 25	72 (8.2)	17 (7.3)	2,731 (11.6)	14 (6.0)	6 (5.7)	5,330 (16)	58 (8.7)	23 (7.6)	4,655 (11.9)	
25-44	389 (44.2)	99 (42.5)	7,232 (30.6)	100 (42.7)	42 (40.0)	13,861 (41.6)	250 (37.3)	106 (34.9)	12,015 (30.6)	
45-65	373 (42.3)	99 (42.5)	6,882 (29.2)	113 (48.3)	54 (51.4)	10,195 (30.6)	263 (39.3)	129 (42.4)	10,974 (28.0)	
65+	47 (5.3)	18 (7.7)	6,761 (28.6)	7 (3.0)	3 (2.9)	3,927 (11.8)	99 (14.8)	46 (15.1)	11,597 (29.6)	
Missing	3	1	143	0	0	68	0	0	0	
Comparison	280.06	64.08		54.07	29.01		95.84	50.73		
(chi-square)	p<0.001	p<0.001		p<0.001	p<0.001		p<0.001	p<0.001		

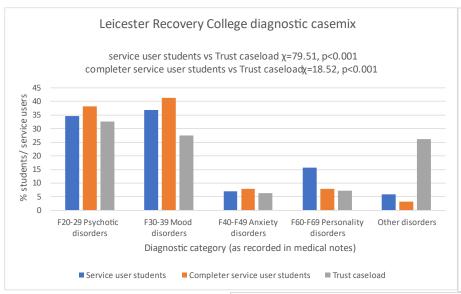
**Bold** = significant at p<0.001 (Bonferroni corrected p value)

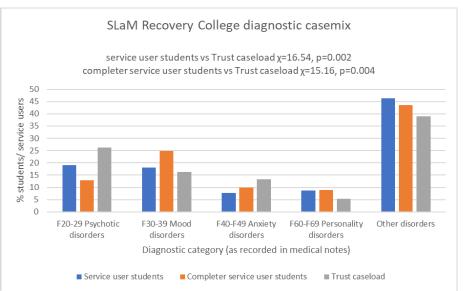
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<sup>\*</sup> Assumptions of the chi-square violated (expected frequency <5 in >20% of cells)

<sup>\*\*</sup> Accuracy of the data extracted on the initial survey date for 'other' was queried, therefore proportions categorized for 'unspecified/ missing' were taken from the Trust Equality monitoring publications, then subtracted from 'other', as well as the total included, to create estimates for Sussex

Figure 1: Bar graphs to show diagnoses of Recovery College service user students compared with affiliated Trust caseloads





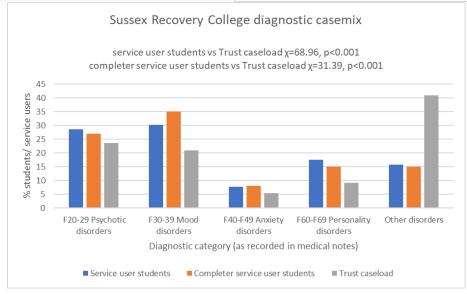


Table 2: Admission and MHA history of Recovery College service user students compared with affiliated Trust caseload

	Leicester Recovery College			SLal	M Recovery	College	Sussex Recovery College					
n (%)	Service user	Completer	Trust	Service	Completer	Trust	Service	Completer	Trust			
	students	students	caseload	user	students	caseload	user	students	caseload			
				students			students					
Mental health inpatient admission in past 24 months?												
Yes	124 (14.1)	35 (15.0)	1,897 (8.0)	23 (9.8)	11 (10.5)	3,965 (12.0)	52 (7.8)	13 (4.3)	1,668 (4.3)			
No	757 (85.9)	198 (85.0)	21,849 (92.0)	211 (90.2)	94 (89.5)	29,416 (88.0)	618	291 (95.7)	37,573 (95.7)			
							(92.2)					
Missing	3	1	3	0	0	0	0	0	0			
Comparison	44.18	15.61		1.04	0.23		19.51	χ=0				
(chi-squared)	p<0.001	p<0.001		p=0.307	p=0.631		p<0.001	p=0.984				
<b>Use of Mental H</b>	ealth Act in pa	ast 24 month	ıs?									
Yes				16 (6.8)	7 (6.7)	3243 (9.7)	44 (6.6)	14 (4.6)	1127 (2.9)			
No				218 (93.2)	98 (93.3)	30,138 (90.3)	626	290 (95.4)	38,114 (97.1)			
							(93.4)					
				0	0	0	0	0	0			
Comparison	N/A	N/A		2.19	1.10		32.00	2.19				
(chi-squared)				p=0.139	p=0.293		p<0.001	p=0.139				

Appendix 1: Diagnosis of Recovery College service user students compared with associated Trust caseload

	Leicester Recovery College			SLaM	<b>Recovery C</b>	ollege	Sussex Recovery College		
n (%)	Service	Completer	Trust	Service	Completer	Trust	Service	Completer	Trust
	user	students	caseload	user	students	caseload	user	students	caseload
	students			students			students		
Diagnosis									
F20-29 Psychotic	95 (34.7)	24 (38.1)	1,204	39 (19.0)	13 (12.9)	5,584	67 (28.6)	27 (27.0)	2,057
disorders			(32.7)			(26.2)			(23.6)
F30-39 Mood	101 (36.9)	26 (41.3)	1,017	37 (18.0)	25 (24.8)	3484	71 (30.3)	35 (35.0)	1,835
disorders			(27.6)			(16.3)			(21.0)
F40-F49 Anxiety	19 (6.9)	6 (7.9)	237 (6.4)	16 (7.8)	10 (9.9)	2,823	18 (7.7)	8 (8.0)	469 (5.4)
disorders						(13.2)			
F60-F69 Personality	43 (15.7)	5 (7.9)	264 (7.2)	18 (8.8)	9 (8.9)	1,128	41 (17.5)	15 (15.0)	794 (9.1)
disorders						(5.3)			
Other disorders	16 (5.8)	2 (3.2)	963	95 (46.3)	44 (43.6)	8300	37 (15.8)	15 (15.0)	3,578
			(26.1)			(38.9)	, ,		(41.0)
Missing	610	171	19562	75	32	12062	436	100	30,508
Comparison (chi-	79.51	18.52		16.54	15.16		68.96	31.39	
squared)	p<0.001	p<0.001		p=0.002	p=0.004		p<0.001	p<0.001	