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# Organisational and student characteristics, fidelity, funding models, and unit costs of recovery colleges in 28 countries: a cross-sectional survey



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## Summary

**Background** Recovery colleges were developed in England to support the recovery of individuals who have mental health symptoms or mental illness. They have been founded in many countries but there has been little international research on recovery colleges and no studies investigating their staffing, fidelity, or costs. We aimed to characterise recovery colleges internationally, to understand organisational and student characteristics, fidelity, and budget.

**Methods** In this cross-sectional study, we identified all countries in which recovery colleges exist. We repeated a cross-sectional survey done in England for recovery colleges in 28 countries. In both surveys, recovery colleges were defined as services that supported personal recovery, that were coproduced with students and staff, and where students learned collaboratively with trainers. Recovery college managers completed the survey. The survey included questions about organisational and student characteristics, fidelity to the RECOLLECT Fidelity Measure, funding models, and unit costs. Recovery colleges were grouped by country and continent and presented descriptively. We used regression models to explore continental differences in fidelity, using England as the reference group.

**Findings** We identified 221 recovery colleges operating across 28 countries, in five continents. Overall, 174 (79%) of 221 recovery colleges participated. Most recovery colleges scored highly on fidelity. Overall scores for fidelity ( $\beta = -2.88$ , 95% CI 4.44 to  $-1.32$ ;  $p = 0.0001$ ), coproduction (odds ratio [OR] 0.10, 95% CI 0.03 to 0.33;  $p < 0.0001$ ), and being tailored to the student (OR 0.10, 0.02 to 0.39;  $p = 0.0010$ ), were lower for recovery colleges in Asia than in England. No other significant differences were identified between recovery colleges in England, and those in other continents where recovery colleges were present. 133 recovery colleges provided data on annual budgets, which ranged from €0 to €2 550 000, varying extensively within and between continents. From included data, all annual budgets reported by the college added up to €30 million, providing 19 864 courses for 55 161 students.

**Interpretation** Recovery colleges exist in many countries. There is an international consensus on key operating principles, especially equality and a commitment to recovery, and most recovery colleges achieve moderate to high fidelity to the original model, irrespective of the income band of their country. Cultural differences need to be considered in assessing coproduction and approaches to individualising support.

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## Introduction

Personal recovery has been defined as individuals rebuilding a meaningful and empowered life alongside their mental health symptoms or mental illness.<sup>1</sup> Internationally, there is growing consensus that mental health services should move towards facilitating personal recovery,<sup>2</sup> and health-care policy in many countries now prioritises recovery-oriented care.<sup>3–5</sup>

Recovery colleges were developed in England in 2009 to support personal recovery and facilitate recovery-oriented care, and they differ from clinical and therapeutic approaches.<sup>6,7</sup> The colleges support people with mental health symptoms and mental illness, their carers, and mental health staff, through coproduced

adult education.<sup>7</sup> In this context, adult learning refers to students taking responsibility for their learning via interactive and reflective exercises, collaboratively with trainers, and coproduction refers to people with lived experience (peer trainers and students), staff, and professional or subject experts working together to design and deliver all aspects of recovery colleges.<sup>6</sup> Key principles of recovery colleges are that they are collaborative, strengths based, person centred, inclusive, and community focused, and that they are substantially different from clinician-run psychoeducation courses and adult education courses.<sup>8</sup> The growing interest in recovery colleges has resulted in the development of an international community of practice.<sup>9</sup>

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## Research in context

### Evidence before this study

We searched PsycINFO, Embase, and MEDLINE for articles published before Feb 1, 2022, with no language restrictions, using search terms related to recovery colleges ("Recovery College\*" OR "Discovery Cent\*" OR "Empowerment College\*" OR "Wellbeing College\*") and mental illness ("Depress\*", OR "Psycho\*" OR "Anxi\*" OR "Drug\*" OR "Alcohol" OR "Anorexi\*" OR "Mania" OR "Bipolar" OR "Self-harm" OR "Schizo\*" OR "Mental Health" OR "Mental Disorder" OR "Mental Illness" OR "Bulemi\*" OR "Addict\*"). We also examined systematic and narrative reviews published in the past two decades. Evidence suggests recovery colleges have gained momentum internationally since they were established in England in 2009, and a tool has been developed to test their fidelity. Reviews suggest recovery colleges benefit students, but no international comparisons have been done regarding their characteristics, including student and organisational characteristics, fidelity to the original model, and running costs. A 2020 review of the impact of recovery colleges concluded that future priorities should include a better understanding of their fidelity, including which organisational factors influence fidelity and how. We updated the literature search on Oct 31, 2022, using the same search terms, finding one scoping review that explored whether co-creative approaches were also used in Recovery College evaluations. Although most studies stated that coproduction was used, few

described how meaningfully involved people with lived experience were in the evaluation process.

### Added value of this study

To our knowledge, this is the first study comprehensively to characterise recovery colleges internationally. Most recovery colleges scored highly on fidelity, particularly on items such as equality and commitment to recovery. We identified that ratings for the fidelity items of being tailored to the student and of coproduction were influenced by continent, as those characteristics scored lower in Asia than in England, which was the reference category. We found that running costs were highly variable and that staffing is consistently a major cost driver. These findings allow greater understanding of the core components of recovery colleges and provision of estimates on their spending per continent and globally.

### Implications of all the available evidence

There is an emerging global consensus that recovery colleges are one useful approach to delivering recovery-oriented support and developing recovery-orientated systems. Therefore, countries and regions with no or few recovery colleges could consider developing such services. Specific knowledge gaps to address include identifying relevant cultural influences in different countries on the characteristics and fidelity assessment of recovery colleges, and the development of coproduced approaches to outcome evaluation.

Most research on recovery colleges has been done in England.<sup>8,10–13</sup> Previous research includes perspectives from health and social care staff and students on the role of recovery colleges for personal recovery,<sup>10,11</sup> the development of a fidelity measure,<sup>8</sup> and a national survey that identified a typology of recovery colleges based on core characteristics.<sup>13</sup> The views on recovery colleges of health and social care professionals and students are broadly positive, describing them as empowering and improving mental health and wellbeing.<sup>14,15</sup>

In 2021, we did a national survey of 88 recovery colleges across England.<sup>13</sup> Cluster analysis of responses from the 63 (72%) participating recovery college managers identified three groups of recovery colleges: those that were strengths oriented (ie, focused explicitly on the strength of the student and shared buildings with statutory health and social care services); those that were community oriented (ie, did not share buildings with statutory health and social care services and focused on social connectedness); and those based in forensic services.<sup>13</sup> Higher scores on the fidelity measure were associated with both strengths-oriented and community-oriented recovery colleges. Running costs indicated that in 2021, the median annual budget for English recovery colleges was £200 000 and the median cost per student was £518 (IQR 275–840).<sup>13</sup>

Other countries have done national surveys<sup>16</sup> outlining the features of recovery colleges, but little international

research has been done comparing the organisational and student characteristics, fidelity to the original English model, or funding of recovery colleges. Only one study has explored commonalities across recovery colleges in different countries.<sup>17</sup> This 2018 survey of 25 colleges in 21 countries outside the UK identified that around half were affiliated with health organisations and that state funding was the most frequent funding source. All recovery colleges had similar features and principles to those in the UK. However, this survey was limited to respondents who were able to participate in English and complete the survey in a short period, and it was conducted before publication of the recovery college fidelity measure.<sup>8</sup>

Whether coproduction-based principles extend beyond recovery college practice and into evaluations has been investigated in a scoping review.<sup>18</sup> Findings suggested that although lived experience was often stated as being part of the research process, few studies described how much, or how meaningfully, people with lived experience were involved in co-design and analysis of research. Thus, it remains unclear the degree to which issues important to individuals who use recovery colleges were included in data collection or whether findings were interpreted and discussed from the perspectives of the main beneficiaries of recovery colleges.

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We aimed to characterise all recovery colleges internationally while meaningfully involving individuals with lived experience in the study design, interpretation, and dissemination of results. The objectives were to determine which countries have recovery colleges and how many exist; to explore organisational and student characteristics of recovery colleges internationally; to describe funding and staffing; and to explore differences in fidelity characteristics by continent.

## Methods

### Study design

As part of the RECOLLECT programme,<sup>19</sup> we did an observational study integrating two equivalent cross-sectional surveys, one conducted across England in 2021, which has been published previously,<sup>13</sup> and one conducted in all other countries with recovery colleges, identified as described below, in 2022. The survey done in England found that not all relevant services refer to themselves as a recovery college.<sup>13</sup> Therefore, in both surveys, we included any service that met the following criteria, derived from the key components of recovery colleges<sup>8</sup> and defined by their manager when completing the survey: a focus on supporting personal recovery; an aspiration to use coproduction, defined as individuals with lived experience working with staff or professional experts to design and deliver all aspects of the recovery college; an aspiration to use adult learning approaches, in which students and trainers collaborate and learn from each other by sharing experiences, knowledge, and skills; and currently open and running courses.

We obtained ethical approval from Kings College London Psychiatry Nursing and Midwifery Research Ethics Subcommittee (MRA-21/22-28685). Written informed consent was obtained from all participants before survey completion.

### Data collection

To identify all countries where recovery colleges might exist, we used the following sources: a previous international survey examining recovery colleges;<sup>17</sup> existing recovery networks including Implementing Recovery through Organisational Change (ImROC), the Recovery College Network, the Recovery Research Network, and the Mental Health Innovation Network; expert consultation with international leaders (n=23) in the field of recovery; and liaising with collaborators in countries with similar interventions available in services, such as peer support workers.

To refine this longlist, we identified individuals in each country or region to work with us. Individuals were approached on the basis of their expertise in recovery, such as academics and individuals pioneering recovery-oriented approaches and services, including those with lived experience. We asked country leads to report on whether there were recovery colleges or equivalent services or organisations in their country

and, if so, how many. Country leads were asked to use local and national networks and, where applicable, to search literature in their local language using key terms such as recovery college or discovery centre along with their country or region. We then asked country leads to ascertain whether each identified service met the study inclusion criteria through discussion with the service manager. We used snowball sampling of recovery colleges that completed the survey, by asking each respondent to identify other recovery colleges in their region or country.

The international survey was adapted from the 2021 England survey.<sup>13</sup> The RECOLLECT Lived Experience Advisory Panel (LEAP), comprising ten individuals with lived experience of mental health symptoms or mental illness or their carers, recovery colleges (as students or lived experience staff), or mental health services, were involved in the design and refinement of both surveys. This included developing questions based on the RECOLLECT change model<sup>10</sup> and additional questions they felt were important to individuals using recovery colleges (eg, whether lived experience was represented at a senior level). For the international survey, LEAP representation included members who currently or previously lived in Asia, Europe (outside the UK), and Oceania.

We first modified the international survey by removing phrases specific to England (eg, local authority) and shortening the economics section by removing salary band information and the breakdown of core and non-core roles. To identify cultural assumptions, we piloted the international survey with three experts involved in recovery colleges in Australia, Canada, and Japan. This resulted in the removal of an item about the ethnicity of recovery college students.

The finalised international survey was implemented online using Qualtrics. A Microsoft Word version was also made available in electronic format to address access issues, such as organisational firewalls and intermittent internet. Minor refinements made by the country lead were permitted, to retain conceptual equivalence and to maximise cross-cultural validity of the international survey and hence allow comparability. For countries where English was not widely spoken and multiple recovery colleges were present, we asked country leads to translate the survey into their local language using the Microsoft Word version. Country leads were given the option of facilitating survey completion using oral translation via a video call or face-to-face meeting with the recovery college manager, or translating the survey into their local language using the Microsoft Word version. Each translation was checked by a second individual fluent in the local language to ensure consistency in translation. This resulted in eight language versions: Chinese, Danish, Dutch, French, German, Japanese, Spanish, and Norwegian. The translations are available online.

For more on Qualtrics see  
[www.qualtrics.com](http://www.qualtrics.com)

For the translated surveys see  
<https://www.researchintorecovery.com/measures/recollectfidelitymeasure>

The international survey opened on Feb 15, 2022, and closed on Oct 29, 2022. We created a unique identification number for each recovery college. Where recovery college managers completed the survey online in English, a Qualtrics hyperlink was created and sent to the country leads who forwarded this to the manager. Where managers completed the survey in Microsoft Word, country leads either forwarded the survey to the manager to complete or set up a meeting to go through the survey, as required. Country leads followed up by phone or email a minimum of three times with each recovery college to maximise survey completion rates. Where the survey was completed using the Qualtrics hyperlink, the research team had direct access to the data. Where completed in Microsoft Word, the file was encrypted and emailed to the research team for data entry by the recovery college or the country lead. The findings from the England and international surveys were then integrated and presented to the LEAP and co-researchers (consisting of 55 academics and recovery college managers, 15 [27%] of whom identified as having lived experience of mental illness) to identify and interpret key findings (eg, differences in staffing costs and cultural differences in fidelity). Individuals with lived experience of mental health difficulties were represented from each continent, with at least two co-researchers or LEAP members currently or previously living in each continent. Context-specific results were discussed with individuals and coauthors representing each continent. Additionally, two LEAP members are co-authors of this manuscript.

### Measures

The full international survey is included in the appendix (pp 2–11). Questions first established eligibility and then asked about organisational, student, and funding characteristics, and about fidelity.

We measured fidelity using the 12-item Recovery College manager-rated RECOLLECT Fidelity Measure, assessing seven ordinal and five categorical components of a recovery college,<sup>8</sup> which is based on a published change model<sup>10</sup> and was coproduced with people with lived experience related to mental health.<sup>20</sup>

The seven ordinal components are each scored from 0 (low fidelity) to 2 (high fidelity) and comprised: valuing equality (ie, the contributions and assets of students, trainers, and other staff are equally valued); learning (ie, students and trainers collaborate and learn from each other by sharing experiences, knowledge, and skills); tailored to the student (ie, individual needs are actively enquired about and accommodated during courses); coproduction (ie, peer trainers or students and staff working together to design and deliver all aspects of the recovery college); social connectedness (ie, the culture and physical environment of the college and the opportunity to connect with others); community focus (ie, engagement with community organisations and further education colleges to coproduce relevant courses);

and commitment to recovery (ie, staff and trainers talk with conviction and enthusiasm about the service and are dedicated to the recovery of students). The fidelity score is the sum of these seven items, ranging from 0 (low fidelity) to 14 (high fidelity).

The five categorical components of a recovery college were: availability (anyone *vs* specific population); location (community-based *vs* statutory service); distinctiveness of course content (mainstream adult education *vs* non-mainstream adult education); strengths-based design (implicit *vs* explicit); and progressive nature (no goal setting *vs* goal setting). For each component, a college was rated as either type 1 or type 2 on the basis of two options. Further details are outlined in the appendix (p 12). No summary score was calculated for categorical items since their relationship with outcomes has not been investigated.

Psychometric evaluation showed that the RECOLLECT fidelity measure meets scaling assumptions and shows adequate internal consistency (Cronbach's  $\alpha$  0.72), test-retest reliability (intraclass correlation coefficient 0.60) and content validity, and fidelity measure scores differentiated recovery colleges from both clinician-delivered psychoeducational groups and adult education colleges, indicating good discriminant validity.<sup>8</sup>

### Statistical analysis

Organisational and student characteristics and fidelity scores were summarised as medians and IQRs, and as frequencies for the overall sample and for each continent. We generated summary statistics for the total annual budget, overall and by continent. Both median and mean values were reported, since budget data are typically highly skewed. Recovery colleges could choose in which currency to report their budget; to aid comparison, we converted all budgets into Euros (€) based on the exchange rate on Dec 12, 2022 (appendix p 13). The annual budget reported by each Recovery College was divided by the number of students and number of courses to estimate unit costs in terms of cost per student and cost per course. The annual budget for staff was divided by the total annual budget for each recovery college to estimate the proportion of total budget attributed to staff costs. The proportion of recovery colleges reporting employing staff in specific job roles was also summarised. Additional summary statistics were produced to describe the proportion of recovery colleges receiving income from different funding sources and the number of different funding sources contributing to them.

Unadjusted linear, ordinal, and logistic regressions were used to examine differences between continents in overall and per item fidelity scores. We used linear regression to assess regional differences in overall fidelity scores, ordinal regression to assess regional differences in non-modifiable fidelity items, and logistic regression to assess regional differences in modifiable fidelity items. In all models, England (the country with the largest

See Online for appendix

For exchange rates see [www.oanda.com](http://www.oanda.com)

number of recovery colleges and where recovery colleges originated) was used as the reference group. To account for multiple testing, a Bonferroni correction was applied, resulting in a corrected significance level of  $p < 0.0010$ .

Unadjusted mixed-effects linear, ordinal, and logistic regressions with a country-level random intercept were used to examine associations between length of time in operation (years) and recovery college size (number of students) and fidelity scores. Bonferroni correction for multiple testing resulted in a corrected significance level of  $p = 0.002$  or less.

All analyses were done using STATA (version 17.0).

**Role of the funding source**

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

**Results**

The initial mapping exercise identified a longlist of 50 countries, including England, where recovery colleges could be present. Discussion with international experts

	Overall (n=174)	Africa (n=2)	Asia (n=13)	Oceania (n=10)	Europe* (n=67)	England (n=63)	North America (n=19)
Time in operation, years	5 (3-7)	5 (4-7)	4 (3-5)	6 (3-7)	5 (3-7)	6 (4-7)	3 (1-3)
Number of courses run per year	30 (12-80)	378 (156-600)	17 (6-44)	39 (11-70)	29 (12-70)	125 (60-220)	44 (12-100)
Number of different courses	15 (8-25)	92 (13-170)	12 (7-15)	20 (14-40)	15 (8-25)	33 (25-45)	16 (5-24)
Number of courses done by each student per year	3 (2-5)	5 (5-5)	5 (3-8)	4 (2-4)	3 (2-5)	4 (3-8)	3 (2-12)
<b>Location</b>							
Urban	76 (44%)	2 (100%)	8 (62%)	4 (40%)	33 (49%)	21 (33%)	8 (42%)
Suburban	13 (7%)	0	3 (23%)	1 (10%)	2 (3%)	5 (8%)	2 (11%)
Rural	10 (6%)	0	1 (8%)	1 (10%)	5 (7%)	2 (3%)	1 (5%)
Mixed	76 (43%)	0	1 (8%)	4 (40%)	27 (40%)	35 (56%)	8 (42%)
<b>Physical base</b>							
Permanent physical base	84 (48%)	1 (50%)	6 (46%)	3 (30%)	34 (51%)	32 (51%)	8 (42%)
Meet in community or mixed-use venues	87 (50%)	1 (50%)	7 (54%)	7 (70%)	33 (49%)	30 (48%)	8 (42%)
Virtual college	4 (2%)	0	0	0	0	1 (2%)	3 (16%)
<b>Most important goal of the recovery college</b>							
To reduce stigma or discrimination	21 (12%)	0	2 (15%)	0	11 (16%)	5 (8%)	2 (11%)
To impact positively on mental health services	12 (7%)	0	1 (8%)	0	7 (10%)	1 (2%)	3 (16%)
Both are equally important	142 (82%)	2 (100%)	10 (77%)	10 (100%)	49 (73%)	57 (90%)	14 (74%)
<b>Main organisational affiliation†</b>							
Statutory health service	87/170 (51%)	2/2 (100%)	0	5/9 (56%)	34/67 (51%)	43/63 (68%)	3/16 (19%)
Non-governmental organisation	53/170 (31%)	0	8/13 (62%)	5/9 (56%)	14/67 (21%)	19/63 (30%)	7/16 (44%)
Local government	21/170 (12%)	0	1/13 (8%)	0	15/67 (22%)	5/63 (8%)	0
Independent	13/170 (8%)	0	3/13 (23%)	0	7/67 (10%)	3/63 (5%)	0
Other health service (eg, private health-care provider)	8/170 (5%)	0	0	0	4/67 (6%)	2/63 (3%)	2/16 (13%)
Education provider (eg, university or college)	18/170 (11%)	0	1/13 (8%)	0	9/67 (13%)	2/63 (3%)	6/16 (38%)
Other	9/170 (5%)	0	3/13 (23%)	0	4/67 (6%)	1/63 (2%)	1/16 (6%)
Leadership team includes people with mental health lived experience	155/170 (91%)	2/2 (100%)	12/13 (92%)	8/9 (89%)	60/67 (90%)	58/63 (92%)	15/16 (94%)
Goal-oriented personal plans used	67/170 (39%)	2/2 (100%)	7/13 (54%)	3/9 (33%)	19/67 (28%)	30/63 (48%)	6/16 (38%)
<b>Group most commonly involved in coproduction</b>							
Lived experience and health or social care professional	127/170 (75%)	2/2 (100%)	10/13 (77%)	7/9 (78%)	51/67 (76%)	45/63 (71%)	12/16 (75%)
Lived experience and community expert	29/170 (17%)	0	3/13 (23%)	1/9 (11%)	9/67 (13%)	12/63 (19%)	4/16 (25%)
Lived experience only	9/170 (5%)	0	0	1/9 (11%)	4/67 (6%)	4/63 (6%)	0
Other	5/170 (3%)	0	0	0	3/67 (4%)	2/63 (3%)	0

Data are median (IQR) or n (%). Some percentages do not sum to 100 due to rounding. \*Excluding England. †Some recovery colleges had more than one main affiliation so the total in this section can be more than 174.

**Table 1: Organisational characteristics of participating recovery colleges overall and by continent**

and searching by country leads reduced this to a finalised list of 31 countries including England, with 299 potential recovery colleges identified. After leads in each country contacted all potentially eligible colleges, we excluded two countries and 78 potential recovery colleges that did not meet inclusion criteria. The most common reason for exclusion was recovery colleges being non-contactable, with local experts believing they were no longer in operation (22 [28%] of 78). A full list of reasons for exclusion is in the appendix (p 14).

The total sample included 221 recovery colleges in 28 countries, including England. Overall, 174 (79%) of the 221 identified recovery colleges participated. The response rates were 100% for Africa (two of two eligible recovery colleges; Uganda [n=2]), 87% for Asia (13 of 15; Hong Kong [n=2], Japan [n=9], Thailand [n=2]), 91% in Oceania (ten of 11; Australia [n=8], New Zealand [n=2]), 81% in Europe (excluding England; 67 of 82; Belgium [n=10], Bulgaria [n=1], Czechia [n=1], Denmark [n=9], Estonia [n=2], Finland [n=2], France [n=1], Germany [n=3], Hungary [n=2], Iceland [n=1], Ireland [n=7], Italy [n=4], Jersey [n=1], the Netherlands [n=2], Northern Ireland [n=3], Norway [n=5], Scotland [n=3], Spain [n=3], Sweden [n=3], Switzerland [n=3], and Wales [n=1]), 83% for North America (Canada [n=19]), and 72% for England (63 of 88). Recovery colleges that were identified and participated are shown, per country, in the appendix (p 21).

The organisational characteristics of participating recovery colleges are shown in table 1. We identified that recovery colleges located in North America had operated for the shortest median duration (3 years [IQR 1–3]). Recovery colleges in Africa offered the greatest median number of courses per year (378 [IQR 156–600]) and number of different courses (92 [IQR 13–170]), and those in Asia offered the lowest median number of courses per year (17 [6–44]) and number of different courses (12 [7–15]). Recovery

colleges in Oceania (n=7) tended to have a physical base in community or mixed-use venues, whereas in other continents, the number of recovery colleges with a permanent physical base and those using community or mixed venues was relatively equal. Most recovery colleges in Africa (n=2) and Asia (n=7) implemented goal-oriented personal plans.

Across the different continents, most recovery colleges had main organisational affiliations to statutory health services or non-governmental organisations, had individuals with lived experience in their leadership team, coproduced courses between those with lived experience and a health-care professional, and rated both the reduction of stigma and positive impact on mental health services as equally important as main goals.

Student characteristics are shown in table 2. We identified that recovery colleges in Africa reported the highest median number of students per year (305 [IQR 250–360]), and that those in Asia reported the lowest (50 [20–80]). Recovery colleges in Africa had students with the lowest median age (30 years [26–34]), whereas those in Europe (40 years [37–45]), Asia (40 years [40–45]), and England (40 years [38–45]) had students with the oldest median age. In Oceania, Europe, North America, and England, a higher proportion of females attended recovery colleges than males.

Fidelity scores are shown in table 3 and fidelity across continents is shown in the appendix (p 15). Most recovery colleges scored high overall, with most rating themselves highly on equality, commitment to recovery, being available to all, and being progressive.

We examined differences by continent in fidelity using linear (for total fidelity score), ordinal (for ordinal items), and binary logistic (for categorical items) regression models using England as the reference category (table 4). Africa was excluded from this analysis due to an insufficient sample size. Regarding total fidelity score, recovery colleges in Asia had lower fidelity scores than in

	Overall (n=174)	Africa (n=2)	Asia (n=13)	Oceania (n=10)	Europe* (n=67)	England (n=63)	North America (n=19)
Number of students, n	150 (78–400)	305 (250–360)	50 (20–80)	100 (70–450)	100 (60–234)	300 (125–575)	235 (100–600)
Age, years	40 (35–45)	30 (26–34)	40 (40–45)	35 (30–37)	40 (37–45)	40 (38–45)	38 (21–40)
Gender, %†							
Male	34% (28–44; n=147)	54% (48–60; n=2)	40% (37–48; n=12)	27.5% (20–40; n=8)	35% (30–45; n=58)	33% (27–44; n=52)	30% (14–35; n=15)
Female	60% (50–70; n=147)	46% (40–52; n=2)	54% (45–63; n=12)	59.5% (52.5–75; n=8)	60% (50–70; n=58)	60% (50 to 70; n=52)	60% (50–75; n=15)
Non-binary	0 (0–3; n=147)	0 (0–0; n=2)	0 (0–4; n=12)	7.5% (1–10; n=8)	0 (0–2; n=58)	0.3% (0 to 2; n=52)	3% (1–5; n=15)
Prefer not to say	0 (0–1; n=147)	0 (0–0; n=2)	0 (0 to 1; n=12)	0 (0–0; n=8)	0 (0–0; n=58)	0 (0–5; n=52)	0 (0–5; n=15)

Data are median (IQR). \*Excluding England. †147 Recovery colleges provided data on gender. Only recovery colleges that provided estimates that added up to 100% were included.

Table 2: Characteristics of students attending recovery colleges, overall and by continent

	Overall (n=169)*	Africa (n=2)	Asia (n=13)	Oceania (n=9)	Europe (n=66)†	England (n=63)	North America (n=16)
Overall fidelity score‡	10 (8–12)	8 (8–8)	7 (6–10)	10 (9–11)	10 (6–11)	11 (9–13)	11 (9–12)
Non-modifiable items							
Equality							
High	123 (73%)	2 (100%)	8 (62%)	8 (89%)	40 (61%)	50 (79%)	15 (94%)
Medium	34 (20%)	0	5 (38%)	0	16 (24%)	12 (19%)	1 (6%)
Low	12 (7%)	0	0	1 (11%)	10 (15%)	1 (2%)	0
Adult learning							
High	59 (35%)	0	1 (8%)	3 (33%)	18 (27%)	30 (48%)	7 (44%)
Medium	96 (57%)	2 (100%)	10 (77%)	6 (67%)	40 (61%)	30 (48%)	8 (50%)
Low	14 (8%)	0	2 (15%)	0	8 (12%)	3 (5%)	1 (6%)
Tailored to the student							
High	66 (39%)	1 (50%)	1 (8%)	3 (33%)	24 (36%)	32 (51%)	5 (31%)
Medium	96 (57%)	1 (50%)	10 (77%)	6 (67%)	37 (56%)	31 (49%)	11 (69%)
Low	7 (4%)	0	2 (15%)	0	5 (8%)	0	0
Coproduction							
High	92 (54%)	1 (50%)	2 (15%)	5 (56%)	33 (50%)	40 (63%)	11 (69%)
Medium	47 (28%)	1 (50%)	4 (31%)	3 (33%)	17 (26%)	19 (30%)	3 (19%)
Low	30 (18%)	0	7 (54%)	1 (11%)	16 (24%)	4 (6%)	2 (13%)
Social connectedness							
High	68 (40%)	0	5 (38%)	3 (33%)	28 (42%)	27 (43%)	5 (31%)
Medium	83 (49%)	1 (50%)	7 (54%)	5 (56%)	35 (53%)	27 (43%)	8 (50%)
Low	18 (11%)	1 (50%)	1 (8%)	1 (11%)	3 (5%)	9 (14%)	3 (19%)
Community focus							
High	65 (38%)	0	2 (15%)	3 (33%)	20 (30%)	33 (52%)	7 (44%)
Medium	79 (47%)	1 (50%)	10 (77%)	3 (33%)	36 (55%)	23 (37%)	6 (38%)
Low	25 (15%)	1 (50%)	1 (8%)	3 (33%)	10 (15%)	7 (11%)	3 (19%)
Commitment to recovery							
High	107 (63%)	0	6 (46%)	6 (67%)	37 (56%)	44 (70%)	14 (88%)
Medium	53 (31%)	2 (100%)	5 (38%)	2 (22%)	25 (38%)	17 (27%)	2 (13%)
Low	9 (5%)	0	2 (15%)	1 (11%)	4 (6%)	2 (3%)	0
Modifiable items							
Available to all							
Anyone	123 (73%)	1 (50%)	11 (85%)	6 (67%)	50 (76%)	44 (70%)	11 (69%)
Specific groups	46 (27%)	1 (50%)	2 (15%)	3 (33%)	16 (24%)	19 (30%)	5 (31%)
Location							
Community	84 (50%)	0	8 (62%)	5 (56%)	32 (48%)	30 (48%)	9 (56%)
Statutory	85 (50%)	2 (100%)	5 (38%)	4 (44%)	34 (52%)	33 (52%)	7 (44%)
Distinctiveness of course content							
Mainstream	91 (54%)	2 (100%)	8 (62%)	5 (56%)	26 (39%)	27 (43%)	10 (63%)
Not mainstream	78 (46%)	0	5 (38%)	4 (44%)	40 (61%)	36 (57%)	6 (38%)
Strengths							
Implicit	40 (24%)	0	8 (62%)	3 (33%)	12 (18%)	13 (21%)	4 (25%)
Explicit	129 (76%)	2 (100%)	5 (38%)	6 (67%)	54 (82%)	50 (79%)	12 (75%)
Progressive							
No goal setting	117 (69%)	0	8 (62%)	7 (78%)	49 (74%)	41 (65%)	12 (75%)
Goal setting	52 (31%)	2 (100%)	5 (38%)	2 (22%)	17 (26%)	22 (35%)	4 (25%)

Data are median (IQR) or n (%). Some percentages do not sum to 100 due to rounding. \*Data on fidelity were not completed by one recovery college in Oceania, one recovery college in Europe, and three recovery colleges in North America. †Excluding England. ‡Ranging from 0 (low fidelity) to 14 (high fidelity).

**Table 3: RECOLLECT fidelity measure scores of recovery colleges, overall and by continent**

England ( $\beta=-2.88$ , 95% CI 4.44 to  $-1.32$ ;  $p<0.0001$ ). Of the seven ordinal items, recovery colleges in Asia were more likely to score lower on being tailored to the student

(odds ratio [OR] 0.10, 95% CI 0.02 to 0.39;  $p=0.0010$ ) and on coproduction (0.10, 0.03 to 0.33;  $p<0.0001$ ) than those in England. No other significant differences were identified

	Asia		Europe*		Oceania		North America	
	Measure (95% CI)†	p value	Measure (95% CI)†	p value	Measure (95% CI)†	p value	Measure (95% CI)†	p value
Fidelity score (items 1–7)	$\beta$ -2.88 (-4.44 to -1.32)†	<0.0001	$\beta$ -1.47 (-2.37 to -0.57)†	0.0020	$\beta$ -0.98 (-2.81 to 0.84)†	0.29	$\beta$ -0.21 (-1.65 to 1.22)†	0.77
Ordinal logistic regression								
Equality	OR 0.47 (0.14 to 1.59)	0.22	OR 0.36 (0.16 to 0.78)	0.010	OR 1.80 (0.20 to 15.88)	0.59	OR 3.80 (0.46 to 31.43)	0.21
Adult learning	OR 0.17 (0.05 to 0.59)	0.0050	OR 0.39 (0.19 to 0.78)	0.0080	OR 0.67 (0.17 to 2.55)	0.55	OR 0.84 (0.29 to 2.48)	0.75
Tailored to student	OR 0.10 (0.02 to 0.39)	0.0010	OR 0.48 (0.24 to 0.96)	0.039	OR 0.52 (0.13 to 2.08)	0.35	OR 0.48 (0.16 to 1.43)	0.19
Coproduction	OR 0.10 (0.03 to 0.33)	<0.0001	OR 0.48 (0.24 to 0.95)	0.034	OR 0.71 (0.19 to 2.74)	0.62	OR 1.12 (0.35 to 3.57)	0.85
Social connectedness	OR 1.00 (0.31 to 3.12)	1.00	OR 1.21 (0.62 to 2.36)	0.57	OR 0.78 (0.20 to 3.00)	0.72	OR 0.60 (0.20 to 1.78)	0.36
Community focus	OR 0.36 (0.12 to 1.06)	0.064	OR 0.45 (0.23 to 0.88)	0.020	OR 0.30 (0.07 to 1.24)	0.10	OR 0.63 (0.21 to 1.86)	0.41
Commitment to recovery	OR 0.32 (0.10 to 1.07)	0.065	OR 0.55 (0.27 to 1.12)	0.10	OR 0.77 (0.17 to 3.43)	0.73	OR 3.04 (0.63 to 14.67)	0.16
Logistic regression								
Available to all (anyone vs specific groups)	OR 0.42 (0.08 to 2.08)	0.29	OR 0.74 (0.34 to 1.61)	0.45	OR 1.16 (0.26 to 5.12)	0.85	OR 1.05 (0.32 to 3.45)	0.93
Location (community vs statutory)	OR 0.57 (0.17 to 1.93)	0.36	OR 0.96 (0.48 to 1.93)	0.92	OR 0.73 (0.18 to 2.96)	0.66	OR 0.71 (0.23 to 2.13)	0.54
Distinctiveness of course content (mainstream vs not mainstream)	OR 0.47 (0.14 to 1.59)	0.22	OR 1.15 (0.57 to 2.33)	0.69	OR 0.60 (0.15 to 2.45)	0.48	OR 0.45 (0.14 to 1.39)	0.16
Strengths (implicit vs explicit)	OR 0.16 (0.04 to 0.58)	0.0050	OR 1.17 (0.49 to 2.80)	0.72	OR 0.52 (0.11 to 2.36)	0.40	OR 0.78 (0.22 to 2.82)	0.70
Progressive (no goal setting vs goal setting)	OR 1.16 (0.34 to 3.99)	0.81	OR 0.64 (0.30 to 1.38)	0.26	OR 0.53 (0.10 to 2.78)	0.45	OR 0.62 (0.18 to 2.16)	0.45

England was used as the reference category. To account for multiple testing, a Bonferroni correction was applied, resulting in a corrected significance level of  $p \leq 0.0010$ . OR=odds ratio. \*Excluding England. †Linear regression.

**Table 4: Differences in RECOLLECT fidelity measure scores, by continent**

between recovery colleges in England, when compared with continents where recovery colleges were present.

No associations were identified between total and item-level fidelity scores and either recovery college size or time in operation after accounting for clustering by country (appendix p 16).

Overall, 133 (60%) of the 221 recovery colleges that were identified provided economic data (table 5). The overall median budget was €152 346 (IQR 60 000–260 912), and there was substantial variability in median budgets across recovery colleges and across continents. The lowest median budget was €20 590 (IQR 4680–36 500) for the two recovery colleges in Africa, and the highest was in England (€232 708 [147 770–349 062]). The overall mean annual budget (€223 667 [SD 323 096]) was higher than the median, reflecting a skewed distribution. Some recovery colleges reported that they did not receive any money towards running costs. The highest budget was €2 550 000 for one recovery college in Europe. Staffing was an important driver of costs, comprising a mean of 72% (SD 25) of the total budget for recovery colleges. Staff costs contributed to a lower mean proportion of total budget in Asia (56% [SD 27]) and North America (63% [34]) than elsewhere.

Overall, 125 (72%) of 174 included recovery colleges provided data to allow derivation of costs per student (table 5). The overall median cost per student was €698 (IQR 236–1338), ranging from €80 (13–146) in Africa to €943 (485–1875) in Europe. The overall median cost per course run was €2161 (857–4819), ranging from €45 (30–61) in Africa to €3718 (1333–7348) in Europe. The overall median cost per distinct course offered was €6397 (2685–12 247), ranging from €287 (215–360) in Africa to €7654 (3750–14 350) in Europe.

The funding sources, staff roles, and median budgets of recovery colleges are shown in the appendix (pp 18–20). 116 (70%) of 165 recovery colleges that provided data on their funding sources were funded by a single source and 81 (70%) received their budget from a government-funded health service. The most common staff roles were occupational therapists (reported in 54 [34%] of 160 recovery colleges), nurses (49 [31%] of 157), and psychologists (46 [29%] of 157; appendix p 19). 107 (64%) of 166 recovery colleges reported having peer, lived experience, or lay staff. This proportion was higher in Canada (12 [71%] of 17) and England (47 [80%] of 59). Median annual budgets per country were between

	Overall	Africa	Asia	Oceania	Europe*	England	North America
<b>Annual budget</b>							
Recovery colleges with available data, n	133	2	11	7	48	50	15
Mean (SD)	223 667 (323 096)	20 590 (22 500)	63 061 (70 152)	162 422 (126 350)	230 873 (453 859)	271 369 (193 997)	215 034 (337 922)
Median (IQR)	152 346 (60 000–260 912)	20 590 (4680–36 500)	34 750 (2085–146 304)	96 741 (69 896–322 470)	118 677 (48 600–196 023)	232 708 (147 770–349 062)	156 485 (34 775–230 903)
Range	0–2 550 000	4680–36 500	1043–166 800	15 803–322 470	0–2 550 000	17 453–809 824	10 432–1 390 980
Total budget spent on staff, % (mean [SD])	72% (25)	NA†	56% (27)	78% (12)	72% (22)	80% (19)	63% (34)
<b>Number of students</b>							
Recovery colleges with available data, n	160	2	13	7	59	63	16
Mean (SD)	345 (559)	305 (78)	61 (51)	191 (195)	197 (261)	517 (740)	513 (670)
Range	9–4919	250–360	9–170	40–500	15–1500	50–4919	60–2500
<b>Total number of courses</b>							
Recovery colleges with available data, n	168	2	13	8	65	62	18
Mean (SD)	118 (178)	378 (314)	36 (50)	48 (43)	62 (111)	197 (222)	110 (172)
Range	2–1200	156–600	3–165	10–135	2–800	20–1200	4–560
<b>Number of distinct courses</b>							
Recovery colleges with available data, n	170	2	13	9	65	63	18
Mean (SD)	30 (37)	92 (111)	14 (12)	29 (23)	20 (17)	44 (50)	21 (20)
Range	1–379	13–170	2–41	7–77	1–105	2–379	3–75
<b>Cost per student</b>							
Recovery colleges with available data, n	125	2	11	6	43	50	13
Mean (SD)	1100 (1330)	80 (94)	1054 (1615)	1263 (1417)	1364 (1293)	1020 (1326)	753 (1276)
Median (IQR)	698 (236–1338)	80 (13–146)	204 (116–1250)	778 (451–1382)	943 (485–1875)	603 (320–977)	262 (185–386)
Range	12–7447	13–146	31–5560	158–4031	19–5395	12–7447	61–4637
<b>Cost per course (total)</b>							
Recovery colleges with available data, n	131	2	11	7	46	50	15
Mean (SD)	4834 (10 398)	45 (22)	4545 (8604)	4843 (4119)	8100 (16 233)	2457 (2398)	3591 (4048)
Median (IQR)	2161 (857–4819)	45 (30–61)	695 (164–2965)	2822 (1165–8384)	3718 (1333–7348)	1757 (793–3526)	2845 (869–5216)
Range	0–100 823	30–61	116–24 998	329–10 749	0–100 823	204–11 984	123–16 364
<b>Cost per distinct course</b>							
Recovery colleges with available data, n	131	2	11	7	46	50	15
Mean (SD)	11 742 (22 207)	287 (103)	9486 (22 023)	6475 (5458)	16 122 (32 518)	9426 (11 243)	11 664 (16 120)
Median (IQR)	6397 (2685–12 247)	287 (215–360)	2172 (185–7791)	4192 (3177–12 093)	7654 (3750–14 350)	6464 (3491–10 956)	6955 (2596–15 394)
Range	0–212 500	215–360	130–74 993	1129–16 124	0–212 500	499–58 177	745–66 237

All data are in €. Some colleges reported receiving no budget; if these colleges also reported at least one funding source, this was assumed to be missing; if no funding sources were reported the colleges were included as having a budget of €0. 12 colleges (ie, one in North America, five in Europe, and six in England) reported a staff budget that was greater than their total budget. These colleges were excluded from the row in the table that reports the percentage of total budget allocated to staff costs. NA=not applicable. \*Excluding England. †Insufficient data to summarise.

**Table 5: Overview of recovery college budgets, students, and courses, overall and by continent**

€2780 (IQR 1529–34750) in Japan and €225729 (96741–322470) in Australia (appendix p 20). The combined annual budgets reported by 133 (60%) of the 221 recovery colleges that were identified and provided economic data was €29747657, providing 19864 courses per year to 55161 students.

### Discussion

We identified 221 recovery colleges currently operating across 28 countries spanning five continents. Students attending recovery colleges had a mean age of 40 years, and most recovery colleges scored high on

fidelity to the original recovery college model. Recovery colleges in Asia scored lower on overall fidelity, coproduction, and being tailored to the student. Budgets varied extensively within and between continents, ranging from €0 to €2 550 000.

In mapping recovery colleges, we identified a further six countries where recovery colleges operate compared with the 2018 international survey,<sup>17</sup> showing that countries are increasingly adopting the concept of recovery colleges as a component of mental health service provision. A new recovery college is currently being developed in Brazil,<sup>21</sup> which will result in recovery

colleges being present in six continents. Although the evidence base for recovery colleges is promising,<sup>14,22</sup> it has not advanced proportionally with the global expansion of recovery colleges. Instead, it seems that catalysts of this expansion might be policy shifts towards recovery-oriented care,<sup>2</sup> the fact that stakeholders—including those with lived experience, health-care staff, and policy makers—like the concept of recovery colleges,<sup>22</sup> and the championing and support around implementing recovery-oriented practice from organisations such as ImROC.

Fidelity to the original recovery college model was high for most recovery colleges, especially outside Asia, and items such as equality and commitment to recovery were consistently rated as high in most recovery colleges across continents, indicating that these components might be central features of recovery colleges globally, even when adapted for cultural context. Differences between Asian and English recovery colleges on fidelity arose from lower ratings in Asia for coproduction and being tailored to the student, which is consistent with previous research in which services implementing recovery-oriented practices in Asia scored lower than those in England.<sup>23</sup> These differences might be due to self-enhancement effects,<sup>24</sup> which have been shown to produce different results between individuals in Western and East Asian countries,<sup>25</sup> and which might result in recovery college managers in England reporting higher fidelity than those in Asia, even if fidelity is the same. Alternatively, these differences might be a result of more fundamental sociocultural differences related to the cultural dimension of individualism versus collectivism.<sup>26</sup> Individualistic countries tend to favour autonomy, independence, and distinction of the self from the group, whereas collectivist countries tend to favour conformity, interdependence, and identity with the group.<sup>26</sup> Courses being tailored to the individual student therefore fit less well with the values of collectivist cultures. Similarly, lower scores for coproduction might be explained by the strong emphasis on social hierarchies that exist in Asia.<sup>27</sup> Thus, it might be that even though individuals with lived experience are involved at a senior leadership level and in coproducing materials, people in Asia might not feel comfortable with disagreeing or challenging health-care staff owing to their cultural values.

The total spending was €29.7 million per year among the participating recovery colleges that completed the economic questions, but there was a high degree of heterogeneity in annual budgets within and between continents. Staffing was an important driver of costs, accounting for nearly three-quarters of total budgets. Recovery colleges in Asia and North America spent a lower proportion of their annual budget on staff compared with other continents. In these continents, recovery colleges tended not to be affiliated with statutory health services, which might mean that a greater proportion of their budgets are spent on rent and

overheads of community buildings where recovery colleges tend to be located. The national survey of recovery colleges in England found that those not linked to non-statutory services spent a large proportion of budgets on rent, whereas those linked to statutory services paid lower or no rent.<sup>13</sup> Courses were also a considerable cost for recovery colleges, and although courses need to be tailored to the needs of the population, it is likely that there are common courses or course elements that span countries or continents, which could be shared and used as a starting point and locally tailored, saving time and resources for increasing quality control and pedagogical innovation.

This study has limitations. First, data from the English survey were collected at the end of 2021, whereas international survey data were collected in 2022, meaning the two datasets might not be fully compatible for merging. Second, best practice procedure when collecting data on fidelity is to triangulate multiple stakeholder perspectives.<sup>28</sup> Fidelity assessments were only undertaken by the recovery college manager and might not reflect how others, such as students, view the characteristics measured. Third, how recovery college fidelity relates to student outcomes is currently being investigated.<sup>19</sup> Thus, a high fidelity score does not necessarily mean that students' outcomes are likely to be better. Fourth, although the survey was translated, translation might not capture the complexities of some cultural values. Fifth, the RECOLLECT fidelity measure<sup>8</sup> is based on the original conceptual design of recovery colleges in England and might not measure aspects important to recovery in different cultures or might not be directly comparable due to cultural differences. However, the change model,<sup>10</sup> on which the RECOLLECT fidelity measure is based, is compatible with an independently developed change model in Canada.<sup>29</sup> Sixth, recovery colleges in Africa were only reported descriptively and were not included in inferential analysis due to the small sample size. Seventh, grouping recovery colleges by continent does not capture variation in countries such as geography or culture. Eighth, we did not collect data on who recovery colleges are being used by, or developed for, such as staff, family, or carers, and thus we do not know whether this differs across continents. Discussions with recovery colleges suggest that some do not collect these data. Lastly, currencies were converted into € to enable comparison, but this approach does not account for disparities in purchasing power.

Future research should seek to describe in more detail the characteristics of recovery colleges, including using ratings by recovery college peer leads and students, rather than only managers, and investigating how aspects of fidelity in different countries affect student, staff, and societal outcomes. Implementation research might investigate how organisational and student characteristics and funding sources change over time. Greater understanding of cultural influences is needed, such as

investigating manager versus independent observer ratings of fidelity to identify whether differences are due to cultural, funding, or other differences in implementation.

In conclusion, recovery colleges are expanding internationally, including into new countries within Asia and Africa. Our survey found that most recovery colleges are within high-income settings, and the development of recovery colleges in other settings will therefore involve careful consideration of cultural influences on implementation and practice if they are to benefit students, staff, and society.<sup>11</sup>

#### RECOLLECT International Research Consortium

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#### Contributors

DH, RAE, CHE, and MS conceptualised the study. DH conducted the literature search. DH and HH-B were responsible for project administration. DH, HH-B, AR, RAE, EC, CHE, and MS were

responsible for the study design. DH, HH-B, VS, LB, CDR, MO, PK, LE, CT, DN, AT, BP, RH, FL, YM, SC, MB, TGK, RTBM, CS, KT, MF, HMJ, AB, RM, ST, ZK, MR, GZ, CHa, WV, SA, DS, UB, CL, SOG, MGF, and JT were responsible for data collection and interpretation. DH, AR, RAE, EC, CHE, and MS were responsible for data analysis. DH, HHH, RAE, EC, AR, CHE, MS, JR, SM, CHan, DE, JGR, MM, DD, CY, KS, TJ, YK, and IB were involved in data interpretation. DH, AR, RAE, EC, CHE, and MS were involved in the writing the original draft. All authors were involved in reviewing and editing the manuscript and approved the final version. DH, AR, EC, CHE, and MS are responsible for the decision to submit the manuscript. DH, AR, and EC have accessed and verified the data. All authors had access to all data in this survey.

#### Declaration of interests

RAE has received travel expenses from the University of Brussels as part of Crosstalks for providing a lecture on mental health interventions. VS is a volunteer member of the Board of Inner City Health Associates, a non-for-profit health care organisation providing care to people experiencing homelessness in Toronto. LB has received funding from Mind Australia to evaluate Mind Australia's Haven Homes and from the Australian Capital Territory Recovery College Pilot project. YM has received grants from Grants-in-Aid for Scientific Research and the Health (Japan) and from the Labour Sciences Research Grants (Japan); YM has also received honoraria for talks from the Japan College of Social Work, Tokyo University of Technology, Japan Academy of Psychiatric and Mental Health Nursing, and Japanese Society of Psychiatry and Neurology; and is an unpaid Steering Committee member of Recovery College Ota in Japan. The views expressed are those of the authors and not necessarily those of the National Institute for Health and Care Research (NIHR) or the Department of Health and Social Care.

#### Data sharing

The data that support the findings of this study are available on request from the corresponding author.

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