Deprivation, access, and outcomes in health psychology treatment

Lloyd L Oates[1,2] and Nick Firth[3,4]

1. Trent Doctorate in Clinical Psychology, University of Lincoln, UK.
2. Lincolnshire Partnership NHS Foundation Trust, Lincoln, UK.
3. Derbyshire Community Health Service NHS Foundation Trust, Chesterfield, UK.
4. School of Health and Related Research, University of Sheffield, UK.

Lloyd Oates - Email: 16662517@students.lincoln.ac.uk Telephone: +44 (0)1522 886029
Nick Firth – Email: nick.firth@gmail.com

Correspondence: Lloyd Oates, Doctorate in Clinical Psychology, School of Psychology, College of Social Science, University of Lincoln, Sarah Swift Building, First Floor, Brayford Pool, Lincoln, LN6 7TS.

Acknowledgements

Abstract

Purpose
Individuals living in areas of higher deprivation are more likely to have requested mental health treatment but are less likely to have received treatment or benefitted from it. Less is known about the extent of access equality and treatment outcomes for individuals with a long-term health condition who experience mental health difficulties. The study aimed to evaluate the extent to which the neighbourhood Index of Multiple Deprivation predicted access to treatment, appointment attendance, treatment completion, and clinical outcomes in a British health psychology clinic.

Design
Retrospective data were used from 479 individuals referred to a health psychology clinic over 12-months. Clinical outcomes were measured using the Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM). Patient data were linked with their neighbourhood Index of Multiple Deprivation decile. Data were analysed using correlation, linear regression, and Fisher's exact test.

Findings
There were no significant associations between deprivation and whether an individual attended assessment, attended treatment, or completed treatment, or between deprivation and patients' clinical outcomes. Exploratory evidence indicated that individuals from higher deprivation neighbourhoods may be over-represented in clinic referrals, and individuals from lower deprivation neighbourhoods may be under-represented, compared with local population distribution estimates.

Originality
This evaluation provides insights into treatment outcomes and deprivation in those with physical health difficulties. Further evaluation using a larger sample and comparing referrals with local prevalence estimates of comorbid mental and physical health problems would enable greater confidence in the conclusion that no evidence of inequality on the basis of neighbourhood deprivation was found.

Key Words: Deprivation, Psychological therapy, Access gap, Physical health conditions, Inequality

Background and context

Mental health problems account for 13% of disease burden worldwide (Ritchie and Roser, 2018), with the reported experience of mental health difficulties expected to increase globally, and by 2030 be the leading cause of mortality and morbidity (World Health Organization, 2011). A review showed that mental health problems account for 21% of years lived with disability (Global Burden of Disease Study 2013 Collaborators, 2015). The socioeconomic costs of mental ill-health through treatment, social support, and losses to the economy by individuals who cannot work total $1-trillion a year worldwide.

Poor mental health is also associated with physical health difficulties. Worldwide, chronic diseases account for 46% of burden (World Health Organization, 2002). In the United Kingdom (UK), more than 30% of the population have one or more long-term health condition, of which, over 25% also have a mental health difficulty (Naylor et al., 2012). The relationship between physical and mental health is bidirectional, whereby individuals with a physical health problem are at increased risk of developing a mental health problem and vice-versa (van Manen et al., 2002). Physical health disability can prevent people from working, which lowers people's quality of life and increases the impact on health clinics (Kings Fund, 2012). Individual socioeconomic indicators such as employment are associated with living in areas of deprivation (Massey et al., 1991), and it is argued that physical and social environments of neighbourhoods are key to understanding health outcomes (Macintyre et al., 1993). It is important to consider the interaction between deprivation, physical, and mental health as there is the potential for a 'perfect storm' of poor physical health, deprivation, and poor mental health (Diez Roux, 2001).

Deprivation refers to an individual's level of resource in relation to others and is a multifactorial construct that may include factors such as: income, housing, social, recreational, educational, and health-related factors (Adler and Snibbe, 2003, Townsend, 1979). Socioeconomically deprived areas and socioeconomic inequalities are associated with health and social problems such as an increased prevalence of common mental health disorders (Wilkinson and Pickett, 2007, Fryers et al., 2003), and greater demand (number of referrals) for psychological care (Delgadillo et al., 2018). Similar to the relationship between mental and physical health, the relationship between deprivation and mental illness may be bi-directional, as in the social causation (Dohrenwend and

Dohrenwend, 1996) and social selection (Dohrenwend et al., 1992) hypotheses.

Despite increasing need for and use of mental health treatments and treatment providers (McManus et al., 2016), there are inequalities in who receives treatment. In particular, individuals living in lower income households are more likely to have requested mental health treatment than those from higher income households, but were less likely to have accessed or attended treatment (McManus et al., 2016, Saxon et al., 2007).

Socioeconomically deprived areas have lower treatment access rates irrespective of local variations in the availability of therapists (Delgadillo et al., 2018). When individuals of low socioeconomic status or from deprived neighbourhoods do access psychological therapy, evidence consistently suggests that they find therapy less effective (Berzins et al., 2018, Finegan et al., 2018, Delgadillo et al., 2016), with some exceptions, (Silva et al., 2016). These associations have been demonstrated using both individual level and area (or neighbourhood) level measures of deprivation (Finegan et al., 2018). Therefore, it is prudent to ensure that clinicians are supporting those with the most need.

The overwhelming majority of evidence linking deprivation and mental health treatment access and outcomes comes specifically from mental health contexts, whilst less is known about this relationship in physical health contexts where physical and mental health difficulties and deprivation have high rates of co-occurrence. Furthermore, there is little evidence focused on individuals once they are referred to treatment providers (typically, the access gap focuses on the incidence – referral gap). For example, some clinics require people to actively 'opt-in' after referral, and most require them to attend a series of outpatient appointments. If there are inequalities within the care pathway, action may be required of treatment providers to reduce or remove obstacles to those living in deprivation.

Aims

The aim of this evaluation was to use referral and treatment data to investigate the potential effects of neighbourhood deprivation on access to treatment, treatment completion, and clinical outcomes. The evaluation aimed to answer two questions. Firstly, 'are there utilisation inequalities within the health psychology care pathway for individuals living in areas of higher deprivation?''. Secondly, 'does deprivation have an impact on health psychology clinical outcomes?'

Objectives

- use descriptive data to compare the relative distribution of neighbourhood deprivation in the sample with that of estimates for the population served by the clinic.

- test associations between patients' IMD decile and their progress through the care pathway at three points: 1) attendance of assessment appointment; 2) attendance of at least one treatment appointment; and 3) completion of treatment.

- for patients who complete treatment, test the association between patient IMD decile and clinical outcome (measured by reliable change).

Methods

The data were routinely collected by the clinic and anonymised by the routine care team before evaluation. The evaluation was not classified as research and as such, the Health Research Authority (HRA) do not require Research Ethics Committee approval or HRA research approval.

Setting and participants

The health psychology clinic provides psychological care for people with physical health problems across five catchment areas in Derbyshire, UK. Common conditions include chronic pain, chronic fatigue, cancer, coronary heart disease, diabetes, sexual health conditions, neurological conditions, and respiratory disorders. Individuals are referred to the clinic by their General Practitioner (GP) or a health professional involved in their care. A triage process determines the appropriateness of the referral. If the referral is considered appropriate, an *opt-in* letter is sent to the individual, inviting them to opt-in to the clinic. Following opt-in, they are offered an assessment appointment. Treatment decisions are made at the assessment appointment. Typically, this might involve being placed on a waiting list to receive a short series (typically 6-8) of one-to-one follow-up treatment appointments. A small percentage of individuals are expedited for immediate treatment. Interventions delivered via groups, electronically, or by assistant psychologists (e.g., relaxation skills) may also at times be offered in certain circumstances. Discharge is also an option, either with referral to other more suitable treatment providers, or following a decision that no further action is appropriate at that time.

Measures

The Index of Multiple Deprivation (IMD) is the official UK Government measure of relative area-level (neighbourhood) deprivation in England. Here, a neighbourhood is defined as the Lower-Layer Super Output Area (LSOA). Each LSOA is designed to include approximately 1,500 people. The IMD is comprised of seven domains: (a) income, (b) employment, (c) education, skills, and training, (d) health and disability, (e) crime, (f) barriers to housing and services, and (g) living environment. These domains are combined and weighted to produce an overall relative measure of deprivation (IMD) (Department for Communities and Local Government, 2016). The IMD therefore reflects the multifaceted nature of deprivation. IMD scores are then ranked across every LSOA in England from 1 to 32,844 (most to least deprived area). Areas are often described by the percentile or decile of relative deprivation they fall into. Deciles are calculated by dividing the 32,844 ranks into ten equal groups, ranging from most deprived to least deprived. For example, 'the area falls within the most deprived 20% nationally'. In this study, all analyses used IMD deciles. The IMD is often used locally in the development of strategies and to support funding bids (Department for Communities and Local Government, 2016).

The IMD is a relative measure and is only able to tell us that one area is more deprived than another area, but it is unable to tell us by how much. For example, an area with a rank of 500 is not twice as deprived as an area with a rank of 1000. Further, the IMD provides an indication of relative deprivation in a small area, but each area will contain variability in individual deprivation. Finally, the IMD is a measure of aspects of deprivation and not affluence - the income measure of deprivation represents individuals on low incomes who receive benefits and tax credits (Department for Communities and Local Government, 2016).

The Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM) (Evans et al., 2000), which is used as a routine outcome measure by the clinic, provides a global measure of distress. The CORE-OM is a generic self-report measure suitable for assessing response to psychological therapy. The CORE-OM is sensitive to change and has high internal and test-retest reliability (Evans et al., 2000). The outcome measure comprises 34-items separated into four subscales (wellbeing, problems, functioning, and risk) and provides an overall mean score. Data were assessed using reliable and clinically significant recovery as indicated by Jacobson et al. (1984).

Other variables included patients' age, sex, ethnicity, referral source, screening outcome, discharge reason, and attendance data.

Data collection

The health psychology clinic routinely seeks to collect all data described in the measures section, except for IMD, which is public data and was linked with patient records. The analysed dataset was drawn from data from all individuals referred to the clinic from the 13th December 2017 to 11th December 2018 (one year). Sample inclusion criteria required that individuals had valid postcode data (in order to match individuals to IMD) and were not still awaiting assessment (and therefore had care pathway data). Data were anonymised within the clinic.

Statistical methods and analysis

Data were quantitative and were collected at nominal, ordinal, and interval level. Data were analysed using IBM SPSS (version 25). Summary statistics were reported in the following areas: demographics of individuals, referral source, attendance, and levels of deprivation.

Distributions were examined using the Kolmogorov-Smirnov and Shapiro-Wilk tests, and histogram examination. Age data were non-normally distributed and were summarised in terms of median and inter-quartile range. IMD decile data were non-normally distributed and were analysed using non-parametric tests such as Spearman's correlation. A linear regression was completed to investigate predictors for the outcome variable. There were no missing data for the regression. All other data were categorical and were summarised by frequency and tests for significance for categorical data. Where counts were less than expected Fisher's Exact test was used. Two-tailed tests were used throughout and the threshold for statistical significance set at 5%.

Clinical outcomes were defined as follows. The reliable change index was used to assess patient outcomes (Guhn et al., 2014). The reliable change index consists of reliable and/or clinically significant recovery. Reliable change is represented by a change of five or more in the clinical score. Clinically significant recovery is indicated when a patient's score moves from the clinical to the non-clinical population. On the CORE-OM clinically significant scores were observed when individuals scored over ten pre-therapy and under ten post-therapy.

In order to provide additional context to the results, demographic and IMD data of those in the clinic were compared to local area

profile estimates, using data from the IMD and Office of National Statistics.

Results

A total of 491 referrals were received by the team between the 13th December 2017 and the 11th December 2018. Of those 491 referrals, one individual was excluded due to missing postcode data. Eleven individuals were excluded as they were still awaiting an initial assessment and so had no clinical pathway data. After exclusions 479 individual data remained in the sample and were included in analysis. Summary sample statistics can be seen in Table 1.

[Table 1 about here]
Comparison of sample with local population

There are 32,844 small areas across England including 491 in Derbyshire. Each small area contains on average 1,500 people. The clinic covers 282 of these small areas. As can be seen in Table 2, the area of Derbyshire covered by the clinic includes 12 small areas in the first decile (representing the top 10% of deprivation nationally). The majority of the small areas fall into the ninth decile. According to regional data taken from the mid-2015 Office of National Statistics population estimates, there were 444,467 individuals living in the areas covered by the clinic (Office of National Statistics, 2015). Of which there were an estimated 218,343 males and 226,124 females of all ages.

The sample comprised 479 people across all deciles, and all deciles were represented. As seen in Table 2 if each ward were to contain 1500 people, the estimated total representation for Derbyshire is shown and the percentage of representation of the sample is highlighted.

When the number of referrals in the sample was compared to the regional population estimates, there was no evidence of significant under-representation from the most deprived deciles (Table 2). In contrast, the percentage of individuals referred to the clinic who lived in deciles 2 and 3 (more highly deprived) was significantly higher than the estimated percentage of individuals overall living in those highly deprived areas. Similarly, the percentage of referrals from deciles 7 and 9 (less deprived) were significantly under-represented compared with population estimates. There was no significant difference between referrals and population estimates in the remaining 6 deciles.

The average population age of Derbyshire is 42 years. The median age of individuals in the sample was 52 years (IQR 43-61, range 17-93). It should be noted that the clinic only accepts individuals aged over 16 years. The gender split in the Derbyshire area is reported to be 50.9% female. In the sample there were 308 (64.3%) females.

[Table 2 about here]

Attending assessment, attending treatment, and completing treatment

As seen in Table 3, 33 individuals did not attend assessment; either they did not opt-in, did not attend the initial assessment, or they were not suitable for the clinic. There was no significant association between IMD decile and whether an individual attended assessment or not (Fisher's $p=$ .792). When considering the order of ranks the linear-by-linear association was statistically non-significant (0.480, $p=$ .511). Illustratively, when considering the ranked order of deciles, the logistic regression was statistically non-significant $\chi^2(1)=$ 0.481, $p=$ .488. The model explained 0.03% (Nagelkerke R^2) of the variance in attending assessment and correctly classified 93.1% of cases. IMD was not significantly associated with attending assessment $\beta=$ 0.049, OR= 1.051 (CI 95%= 0.914–1.208), $p=$ .489. As the cell counts were less than 5 in more than 20% of IMD deciles, these results are provided only to support the Fisher's exact test.

There was no significant association between IMD decile and whether or not an individual attended at least one treatment appointment, $X^2=$ (18, $n=$ 479) 22.632, $p=$ .205. When considering the order of ranks the linear-by-linear association was statistically non-significant (0.719, $p=$ .403). The logistic regression was statistically non-significant $\chi^2(1)=$ 0.724, $p=$ .395. The model explained 0.03% (Nagelkerke R^2) of the variance in attending treatment and correctly classified 69.4% of cases. IMD was not significantly associated with attending treatment $\beta=$ 0.037, OR= 1.037 (CI 95%= 0.953–1.129), $p=$ .396, suggesting no association between increasing deprivation and non-attendance.

Finally, there was no statistically significant difference between IMD decile and those that completed versus dropped out of treatment (Fisher's $p=$ .349), or those that completed treatment versus those that did not (including those discharged after assessment and therefore did not start treatment). The model explained <0.001% (Nagelkerke R^2) of the variance in completing treatment and correctly classified 66.1% of cases. IMD was not significantly

associated with completing treatment β= 0.009, OR= 1.009 (CI 95%= 0.912–1.116), p= .866, suggesting no association between increasing deprivation and completing treatment.

Treatment effectiveness

Of those who completed treatment (n= 83), reliable improvement was seen in 32 (38.6%) and clinically significant recovery in 21 (25.3%) individuals. Two (2.4%) individuals experienced reliable deterioration. There was no significant association (r_s= -.148, p= .182) between IMD and reliable change on the CORE-OM for individuals who completed treatment. There was no significant association between IMD and post-treatment CORE-OM scores (r_s= .149, p= .200). An intention to treat sensitivity analysis (n= 479) also showed no significant association between IMD and reliable change on the CORE-OM (r_s= -.026, p= .574).

[Table 3 about here]

Discussion

This evaluation explored the issue of deprivation and attending psychological therapy and patient outcomes in a clinic for people with physical health problems. The evaluation arose as a result of growing evidence that increased deprivation negatively impacts attendance at psychological therapy and treatment outcomes. The evaluation was designed to identify the extent of this potential problem in the specific clinic, as well as understand if and where resources and initiatives were required to reduce any gaps or inequalities.

The results of this evaluation showed no significant association between deprivation and psychological therapy access, treatment completion, or clinical outcomes. This is contrary to the majority of evidence (McManus et al., 2016, Finegan et al., 2018), although other studies using IMD have also found no significant association (Firth et al., 2015, Poots et al., 2014).

Saxon et al. (2007) note that although those from areas of higher deprivation are often less represented in psychotherapy samples than those from areas of lower deprivation, some studies have detected no association. They hypothesise that conflicting findings may relate to differences in health systems, or by improvements in accessibility over time (Saxon et al., 2007). The current evaluation found no statistical evidence of under-representation for those from deprived areas. If anything, people from areas of higher deprivation were over-represented compared to locality population estimates,

whilst people from areas of lower deprivation were under-represented. There is robust evidence linking deprivation with incidence of mental and physical health conditions (Naylor et al., 2012). As such, if clinics are equitable and accessible to all who need them, we would expect that the patient distribution would be skewed in the direction observed.

These findings are encouraging, in that there was no explicit evidence found in this evaluation to suggest an access gap/inverse care law effect in the clinic's current provision (either by way of a sample skewed towards less deprived areas, or in comparison with locality population estimates of deprivation). However, the current study was not able to rule out a relative access gap by comparing directly with estimates of the prevalence of need across levels of deprivation (in other words, the skew towards deprived areas may be even greater in estimates of need, compared with the current clinic sample). In addition, the current evaluation could only assess equality of access within the specific clinic (rather than the care system as a whole, or other sectors of care such as private clinics). This is important as, for example, variations in access to other sources of care can affect the flow of referrals (and therefore the distribution of deprivation) to the clinic under consideration. This is a limitation of the current evaluation, and further evaluations should seek to compare more nuanced data regarding mental and physical ill-health comorbidity prevalence rates across deprivation deciles.

Previous research has found that incidence and severity of psychological distress are associated with social and economic inequalities (Bruce et al., 1992, Mirowsky and Ross, 1989, Prilleltensky, 2008). Social processes such as these have been hypothesised to shape identity and reduce self-efficacy in the least privileged individuals (Bourdieu, 1984, Stoppard, 2014, Wilkinson, 1998). We might therefore expect that the clinic would see inequalities across deprivation deciles in referrals and treatment utilisation, which were not identified in the evaluation.

Help-seeking behaviour may help to understand these results. Three factors are critical in help-seeking behaviour - attitudes towards help-seeking, intention to seek help, and actual help-seeking behaviour (Gulliver et al., 2012). Awareness of one's subjective needs also influences the decision of whether or not to seek help (Gross and McMullen, 1983). The theory of planned behaviour (an extension of theory of reasoned action)(Ajzen, 1991) states that an individual's attitude toward behaviour, subjective norms, and perceived behavioural control influence an individual's behaviours. If an individual evaluates a behaviour as positive (attitude), and they believe that other individuals, such as a care

team, want them to engage in the behaviour (subjective norm) then the individual's motivation is higher, and they are more likely to engage in the behaviour.

One hypothesis is that these factors differ in physical health focused contexts, compared with mental health contexts. There may be greater validation of help-seeking attitudes, and clearer understanding of subjective needs around physical versus mental ill-health. If individuals are already engaged within a health care system in relation to their physical health, this may impact on their subjective norms, compared with individuals suffering from mental ill-health where a) they are not already engaged with health professionals, b) there might be increased stigma and less understanding of difficulties, and c) where symptoms and consequences of difficulties may be less visible or more nebulous. These motivators may be counteracting the negative impact of deprivation in this evaluation.

This explanation is consistent with the construct of candidacy regarding access to clinics (Dixon-Woods et al., 2006). Candidacy explains how an individual's eligibility for healthcare is determined by healthcare providers and the individual. Candidacy is a continuous process that is defined and redefined by professionals and individuals in how cases are constructed. In deprived groups, early indicators or symptoms may be considered less important by socioeconomically deprived populations due to a lack of positive conceptualisation of health (Dixon-Woods et al., 2006), consistent with the theory of planned behaviour. However, validation regarding physical ill-health may increase candidacy and protect against non-engagement or loss of agency.

Strengths and Limitations

This evaluation included over 97% of patients referred to the clinic during the evaluation period. Only one patient was unable to be linked with IMD, which allowed for a comprehensive review of the deprivation data for those accessing the clinic. The evaluation took a pragmatic practice-based approach to analysis, yet employed multiple methods of analysis, increasing the robustness of results.

IMD (2015) scores were mostly calculated based on 2012/13 tax year data. Although consistency over time may be expected in most cases, differences in deprivation of certain small areas may have affected the results to some extent. This report does not explore potential associations between the seven specific domains of deprivation and attendance and outcomes, although the overall IMD uses a weighted combination of all seven domains.

IMD provides a deprivation score for small areas throughout the UK. IMD does not provide information about deprivation to specific individuals. It is therefore possible that an individual referred to the clinic may live in an area rated high in deprivation but be a high earner or highly educated etc., or vice versa. This evaluation therefore considers the contextual effect of neighbourhood, not necessarily the direct deprivation of the individual.

Some deciles are poorly represented, which may result in a masking of interaction in some cases. The small number of individuals from the least 10% deprived areas means the non-significant association in worsening scores should be considered with caution, as low numbers of individuals within deciles reduces power. Deciles were used over quintiles as they are more frequently reported. Correlation analysis was conducted and used the whole data set to consider any relationship which may have been masked by reduced power in the Fishers exact test. Future analyses may benefit from using quintiles.

Implications for practice

Findings from this evaluation do not raise immediate concerns regarding inequality for this clinic. Instead, this clinic appears to be statistically equitable across the care pathway with respect to neighbourhood deprivation (with caveats as discussed).

It would be helpful to understand whether these findings reflect differences between mental health and physical health focused care contexts - for example, understanding which factors precipitate patient referrals, and whether physical health psychology patients differ from patients accessing mental health clinics, with regards to health seeking behaviours, subjective norms, or conceptualisations of health. These may potentially inoculate against or counteract negative effects of deprivation. Differences in practice may also be identifiable between these contexts. For example, whether practitioners or patients initiate conversations regarding referral, whether the conversation is focused initially on mental or physical health, etc. Understanding the process of what leads to a referral may allow the clinic to understand if there is still a gap in accessing treatment, or, it may indicate differences of working between referrers. It would also be helpful to explore other factors contributing to observed variability in patient access, completion and clinical outcomes.

Repeating the analysis with an increased sample size, and comparison with more accurate estimates of comorbid physical and

mental ill-health may provide stronger evidence of equality or inequality, respectively.

Finally, this evaluation does not suggest that therapists ignore deprivation or social-class disparity when working with individuals (Delgadillo, 2018). The relative equality indicated in this evaluation may only be maintained by conscious efforts to address it, that may be undone if therapists become complacent about the impact of deprivation. Ignoring deprivation in this way may be harmful to therapeutic rapport (Trott and Reeves, 2018). As therapeutic rapport has been shown to improve treatment engagement and outcomes (Karver et al., 2006), it would be interesting to see if acknowledgement of differences in sessions improved treatment utilisation and clinical outcomes.

Contribution

This evaluation was conceived, organized, and managed by LLO and NF. Data preparation was by NF and LLO. Statistical analysis and writing of the first draft of the article was done by LLO. All listed authors were involved in the preparation, review, and critique of the final manuscript. All authors have approved the final manuscript for submission.

Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the evaluation, authorship, and/or publication of this article. LLO carried out this work in part fulfilment of the requirements of his Doctorate in Clinical Psychology at the University of Lincoln and the University of Nottingham.

Funding

Word count: Abstract 249, main text 4158, tables 3

References

ADLER, N. E. & SNIBBE, A. C. 2003. The Role of Psychosocial Processes in Explaining the Gradient Between Socioeconomic Status and Health. *Current Directions in Psychological Science,* 12**,** 119-123.

AJZEN, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes,* 50**,** 179-211.

BERZINS, S., BABINS-WAGNER, R. & HYLAND, K. 2018. Relationship of employment status and socio-economic factors with distress levels and counselling outcomes during a recession. *Counselling and Psychotherapy Research,* 18**,** 122-132.

BOURDIEU, P. 1984. Distinction. Translated by Richard Nice. *Cambridge, MA: Harvard Univer*.

BRUCE, M. L., TAKEUCHI, D. T. & LEAF, P. J. 1992. Poverty and psychiatric status: longitudinal evidence from the New Haven Epidemiologic Catchment Area Study. *Archives of general psychiatry,* 48**,** 470-474.

DELGADILLO, J. 2018. Worlds apart: Social inequalities and psychological care. *Counselling and Psychotherapy Research,* 18**,** 111-113.

DELGADILLO, J., ASARIA, M., ALI, S. & GILBODY, S. 2016. On poverty, politics and psychology: the socioeconomic gradient of mental healthcare utilisation and outcomes. *Br J Psychiatry,* 209**,** 429-430.

DELGADILLO, J., FARNFIELD, A. & NORTH, A. 2018. Social inequalities in the demand, supply and utilisation of psychological treatment. *Counselling and Psychotherapy Research,* 18**,** 114-121.

DEPARTMENT FOR COMMUNITIES AND LOCAL GOVERNMENT. 2016. The English Indices of Deprivation 2015 – Frequently Asked Questions (FAQs). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/579151/English_Indices_of_Deprivation_2015_-_Frequently_Asked_Questions_Dec_2016.pdf [Accessed 9th May 2019].

DIEZ ROUX, A. V. 2001. Investigating neighborhood and area effects on health. *Am J Public Health,* 91**,** 1783-9.

DIXON-WOODS, M., CAVERS, D., AGARWAL, S., ANNANDALE, E., ARTHUR, A., HARVEY, J., HSU, R., KATBAMNA, S., OLSEN, R., SMITH, L., RILEY, R. & SUTTON, A. J. 2006. Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. *BMC Med Res Methodol,* 6**,** 35.

DOHRENWEND, B. P. & DOHRENWEND, B. S. 1996. *Social status and psychological disorder; a causal inquiry.,* New York, NY, Wiley-Interscience.

DOHRENWEND, B. P., LEVAV, I., SHROUT, P. E., SCHWARTZ, S., NAVEH, G., LINK, B. G., SKODOL, A. E. & STUEVE, A. 1992. Socioeconomic status and psychiatric disorders: the causation-selection issue. *Science,* 255**,** 946-52.

EVANS, C., MELLOR-CLARK, J., MARGISON, F., BARKHAM, M., AUDIN, K., CONNELL, J. & MCGRATH, G. 2000. CORE: clinical outcomes in routine evaluation. *Journal of Mental Health,* 9**,** 247-255.

FINEGAN, M., FIRTH, N., WOJNAROWSKI, C. & DELGADILLO, J. 2018. Associations between socioeconomic status and psychological therapy outcomes: A systematic review and meta-analysis. *Depress Anxiety,* 35**,** 560-573.

FIRTH, N., BARKHAM, M., KELLETT, S. & SAXON, D. 2015. Therapist effects and moderators of effectiveness and efficiency in psychological wellbeing practitioners: A multilevel modelling analysis. *Behaviour Research and Therapy,* 69**,** 54-62.

FRYERS, T., MELZER, D. & JENKINS, R. 2003. Social inequalities and the common mental disorders: a systematic review of the evidence. *Soc Psychiatry Psychiatr Epidemiol,* 38**,** 229-37.

GLOBAL BURDEN OF DISEASE STUDY 2013 COLLABORATORS 2015. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet,* 386**,** 743-800.

GROSS, A. E. & MCMULLEN, P. A. 1983. Models of the help-seeking process. *In:* DEPAULO, B. M., NADLER, A. & FISHER, J. D. (eds.) *New directions in helping: Help-seeking.* New York: Academic Press.

GUHN, M., FORER, B. & ZUMBO, B. D. 2014. Reliable Change Index. *In:* MICHALOS, A. C. (ed.) *Encyclopedia of Quality of Life and Well-Being Research.* Dordrecht: Springer Netherlands.

GULLIVER, A., GRIFFITHS, K. M., CHRISTENSEN, H. & BREWER, J. L. 2012. A systematic review of help-seeking interventions for depression, anxiety and general psychological distress. *BMC Psychiatry,* 12**,** 81.

JACOBSON, N. S., FOLLETTE, W. C. & REVENSTORF, D. 1984. Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior therapy,* 15**,** 336-352.

KARVER, M. S., HANDELSMAN, J. B., FIELDS, S. & BICKMAN, L. 2006. Meta-analysis of therapeutic relationship variables in youth and family therapy: the evidence for different relationship variables in the child and adolescent treatment outcome literature. *Clin Psychol Rev,* 26**,** 50-65.

KINGS FUND 2012. *Long-term conditions and mental health: The cost of comorbidities,* London, Kings Fund.

MACINTYRE, S., MACIVER, S. & SOOMAN, A. 1993. Area, class and health: should we be focusing on places or people? *Journal of social policy,* 22**,** 213-234.

MASSEY, D. S., GROSS, A. B. & EGGERS, M. L. 1991. Segregation, the concentration of poverty, and the life chances of individuals. *Social Science Research,* 20**,** 397-420.

MCMANUS, S., BEBBINGTON, P., JENKINS, R. & BRUGHA, T. (eds.) 2016. *Mental Health and Wellbeing in England: Adult Psychiatric Morbidity Survey 2014,* Leeds: NHS Digital.

MIROWSKY, J. & ROSS, C. E. 1989. *Social causes of psychological distress,* Hawthorne, NY, US, Aldine de Gruyter.

NAYLOR, C., PARSONAGE, M., MCDAID, D., KNAPP, M., FOSSEY, M. & GALEA, A. 2012. *Long-term conditions and mental health: the cost of co-morbidities,* London, The King's Fund & Centre for Mental Health.

OFFICE OF NATIONAL STATISTICS. 2015. *Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland* [Online]. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland. [Accessed 3rd March 2019].

POOTS, A. J., GREEN, S. A., HONEYBOURNE, E., GREEN, J., WOODCOCK, T., BARNES, R. & BELL, D. 2014. Improving mental health outcomes: achieving equity through quality improvement. *International journal for quality in health care,* 26**,** 198-204.

PRILLELTENSKY, I. 2008. The role of power in wellness, oppression, and liberation: The promise of psychopolitical validity. *Journal of community psychology,* 36**,** 116-136.

RITCHIE, H. & ROSER, M. 2018. *Mental Health* [Online]. Available: https://ourworldindata.org/mental-health [Accessed 12th October 2019].

SAXON, D., FITZGERALD, G., HOUGHTON, S., LEMME, F., SAUL, C., WARDEN, S. & RICKETTS, T. 2007. Psychotherapy provision, socioeconomic deprivation, and the inverse care law. *Psychotherapy Research,* 17**,** 515-521.

SILVA, M., LOUREIRO, A. & CARDOSO, G. 2016. Social determinants of mental health: A review of the evidence. *The European Journal of Psychiatry,* 30**,** 259-292.

STOPPARD, J. 2014. *Understanding depression: Feminist social constructionist approaches,* London, Routledge.

TOWNSEND, P. 1979. *Poverty in the United Kingdom,* London, UK, Allen Lane and Penguin Books.

TROTT, A. & REEVES, A. 2018. Social class and the therapeutic relationship: The perspective of therapists as clients. A qualitative study using a questionnaire survey. *Counselling and Psychotherapy Research,* 18**,** 166-177.

VAN MANEN, J. G., BINDELS, P. J., DEKKER, F. W., CJ, I. J., VAN DER ZEE, J. S. & SCHADE, E. 2002. Risk of depression in patients with chronic obstructive pulmonary disease and its determinants. *Thorax,* 57**,** 412-6.

WILKINSON, R. 1998. What Health Tells Us About Society. *IDS Bulletin,* 29**,** 77-85.

WILKINSON, R. G. & PICKETT, K. E. 2007. The problems of relative deprivation: why some societies do better than others. *Soc Sci Med,* 65**,** 1965-78.

WORLD HEALTH ORGANIZATION. 2002. *The world health report 2002 - Reducing Risks, Promoting Healthy Life* [Online]. Available: https://www.who.int/whr/2002/en/ [Accessed 12th October 2019].

WORLD HEALTH ORGANIZATION. 2011. *Global burden of mental disorders and the need for a comprehensive, coordinated response from health and social sectors at the country level: Report by the Secretariat* [Online]. Available: apps.who.int/gb/ebwha/ pdf_files/EB130/B130_9-en.pdf [Accessed 12th October 2019].

WORLD HEALTH ORGANIZATION. 2019. *Mental health in the workplace* [Online]. Available: https://www.who.int/mental_health/in_the_workplace/en/ [Accessed 12th October 2019].

Table 1. Sample summary statistics

Demographic	N=479
Median Age (IQR; Range)	52 (43-61; 17-93)
Females	308 (64.3%)
Ethnicity	White British: 304 (63.5%) Other European (White, Mixed, Unspecified): 3 (0.6%) Other Mixed: 2 (0.4%) Other: 1 (0.2%) Not stated: 169 (35.3%)
Referral source	Acute Hospitals: 218 (45.5%) Community Teams: 35 (7.4%) General/Family Practitioner: 167 (35.0%) Frontline Mental Health Team ("IAPT"): 4 (0.8%) Specialist Mental Health Team: 11 (2.3%) Mental Health Liaison: 40 (8.4%) Older Adult Psychology: 1 (0.2%) Missing: 3 (0.6%)
Status on the 11th December 2018	Not suitable: 4 (0.8%) Did not opt in: 10 (2.1%) Did not attend assessment: 19 (4.0%) Discharged after assessment: 83 (17.3%) Attended assessment awaiting treatment: 100 (20.9%) Treatment in progress: 134 (28.0%) Dropped out of treatment: 46 (9.6%) Completed treatment: 83 (17.3%)
Reason for discharge following assessment (n=83)	Not suitable: 12 (14.5%) Referred to other services: 15 (18.1%) Declined treatment: 14 (16.9%) Assessment only required: 42 (50.6%)
Dropped out of treatment reason (n=46)	Mental health factors: 7 (15.2%) Physical health factors: 3 (6.5%) Social factors: 5 (10.9%) No known reason: 31 (67.4%)
CORE-OM reliable change - completers only (n=83)	Reliable deterioration: 2 (2.4%) Unchanged: 49 (59.0%) Reliable improvement: 32 (38.6%)
CORE-OM recovery - completers only (n=83)	No clinically significant recovery: 62 (74.7%) Clinically significant recovery: 21 (25.3%)

CORE-OM = Clinical Outcomes in Routine Evaluation – Outcome Measure; IQR = Inter quartile range; IAPT = Increasing Access to Psychological Therapies; IMD = Index of Multiple Deprivation.

Table 2. A comparison of service referrals versus population estimates in the service catchment area across levels of deprivation

Decile	Decile description	LSOAs in service area	Estimated number of individuals living in service area	Percentage of individuals living in service area (%) ($n=423,000$)	Number of individuals referred to the service	Percentage of evaluation sample representing decile (%) (95% CI) ($n=479$)
1	10% most deprived	12	18,000	4.3	30	6.3 (4.0-8.5)
2	10% to 20%	26	39,000	9.2	62	12.9 (9.8-16.1)*
3	20% to 30%	31	46,500	11.0	83	17.3 (13.8-20.8)*
4	30% to 40%	34	51,000	12.1	68	14.2 (11.0-17.4)
5	40% to 50%	30	45,000	10.6	46	9.6 (6.9-12.3)
6	50% to 60%	27	40,500	9.6	41	8.6 (5.9-11.2)
7	60% to 70%	36	54,000	12.8	47	9.8 (7.0-12.6)*
8	70% to 80%	30	45,000	10.6	41	8.6 (5.9-11.2)
9	80% to 90%	38	57,000	13.5	38	7.9 (5.4-10.5)*
10	10% least deprived	18	27,000	6.4	23	4.8 (2.8-6.8)

* = significant difference from population estimate. LSOA = Lower-Layer Super Output Areas. LSOAs are designed so that approximately 1500 individuals live in each LSOA.

Table 3. Deprivation by decile and care pathway outcome

					Decile						
(n†)	1	2	3	4	5	6	7	8	9	10	Sig
Attended Assessment (n=479)											Fisher's Exact p= 0.792
Yes:446	28 (6.3%)	56 (12.6%)	76 (17.0%)	64 14.4%)	45 (10.1%)	36 (8.1%)	45 (10.1%)	39 (8.7%)	36 (8.1%)	21 (4.7%)	
No:33	2 (6.1%)	6 (18.2%)	7 (21.2%)	4 (12.1%)	1 (3.0%)	5 (15.2%)	2 (6.1%)	2 (6.1%)	2 (6.1%)	2 (6.1%)	
Post assessment discharge reason (n=83)											Fisher's Exact p= 0.854
Not suitable:12	1 (8.3%)	2 (16.7%)	1 (8.3%)	1 (8.3%)	1 (8.3%)	1 (8.3%)	2 (16.7%)	0 (0.0%)	3 (25.0%)	0 (0.0%)	
Referred to other service:15	1 (6.7%)	1 (6.7%)	1 (6.7%)	3 (20.0%)	3 (20.0%)	2 13.3%	1 (6.7%)	1 (6.7%)	1 (6.7%)	1 (6.7%)	
Declined follow up:14	2 (14.3%)	1 (7.4%)	2 (14.3%)	1 (7.1%)	1 (7.1%)	1 (7.1%)	2 (14.3%)	2 (14.3%)	1 (7.1%)	1 (7.1%)	
Assessment only required:42	5 (11.9%)	5 (11.9%)	8 (19.1%)	5 (11.9%)	3 (7.1%)	5 (11.9%)	1 (2.4%)	7 (16.7%)	1 (2.4%)	2 (4.6%)	
Attended at least one session of treatment (n=379)											X^2 (9) = 8.315, p= 0.503
Yes:263	12 (5.1%)	32 (13.6%)	39 (16.5%)	45 (19.1%)	27 (11.4%)	23 (9.8%)	26 (11.0%)	21 (8.9%)	26 (11.0%)	12 (5.1%)	
No:116	11 (9.5%)	15 (12.9%)	19 (16.4%)	14 (12.1%)	9 (7.6%)	14 (12.1%)	8 (6.9%)	12 (10.3%)	8 (6.9%)	6 (5.2%)	

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	
Completed or dropped out of treatment (n=129)											Fisher's Exact p= 0.349
Completed:83	5 (6.0%)	8 (9.6%)	14 (16.9%)	13 (15.7%)	9 (10.8%)	8 (9.6%)	7 (8.4%)	8 (9.6%)	9 (10.8%)	2 (2.4%)	
Dropped out:46	2 (4.4%)	4 (8.7%)	7 (15.2%)	10 (21.7%)	3 (6.5%)	0 (0.0%)	9 (19.6%)	3 (6.5%)	6 (13.0%)	2 (4.4%)	
CORE-OM reliable change – completers only (n=83)											Fisher's Exact p= 0.162
Reliable deterioration:2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (50.0%)	
Unchanged:49	2 (4.1%)	3 (6.1%)	11 (22.5%)	6 (12.2%)	5 (10.2%)	5 (10.2%)	6 (12.2%)	4 (8.2%)	7 (14.3%)	0 (0.0%)	
Reliable improvement:32	3 (9.4%)	5 (15.6%)	3 (9.4%)	7 (21.9%)	3 (9.4%)	3 (9.4%)	1 (3.1%)	4 (12.5%)	2 (6.3%)	1 (3.1%)	
CORE-OM clinically significant recovery – completers only (n=83)											Fisher's Exact p= 0.570
Not clinically significant:62	4 (6.5%)	5 (8.1%)	13 (21.0%)	9 (14.5%)	7 (11.3%)	6 (9.7%)	6 (9.7%)	4 (6.5%)	7 (11.3%)	1 (1.6%)	
Clinically significant recovery:21	1 (4.8%)	3 (14.3%)	1 (4.8%)	4 (19.1%)	2 (9.5%)	2 (9.5%)	1 (4.8%)	4 (19.0%)	2 (9.5%)	1 (4.8%)	

† percentage of participants by decile