

ARTICLE

Engagement with services in Black African and Caribbean people with psychosis: The role of social networks, illness perceptions, internalized stigma, and perceived discrimination

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Abstract

Objectives: Research and policies in the United Kingdom have repeatedly highlighted the need to reduce ethnic disparities and improve engagement with mental health services among Black African and Caribbean people with psychosis. The aim of this study was to examine the role of social network characteristics and psychological factors in engagement with services in Black people with psychosis.

Methods: A cross-sectional study was conducted with 51 Black African and Caribbean adults with non-affective psychosis and currently receiving care from mental health services in England. Measures were completed to examine relationships between social networks, illness perceptions, perceived racial or ethnic discrimination in services, internalized stigma, and current engagement with services from service user and staff perspectives.

Results: Social network composition (ethnic homogeneity) moderately correlated with better service user and staff reported engagement. Greater perceived personal control over problems was associated with better staff reported engagement. Lower perceived ethnic or racial discrimination in services, and specific illness perceptions (higher

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perceived treatment control, greater self-identification with psychosis symptoms, more concern and greater emotional response related to problems) were associated with better service user reported engagement. Internalized stigma was not associated with service engagement. Multivariate regression analyses suggested that a more ethnically homogenous social network was the strongest predictor of better service user and staff reported engagement.

Conclusions: Psychosocial interventions that target social networks, perceived ethnic and racial discrimination in services, and illness perceptions may facilitate better engagement and improve outcomes. Further longitudinal studies are required to examine causal mechanisms.

KEYWORDS

Black African, Black Caribbean, discrimination, engagement, illness perceptions, psychosis, social networks, stigma

Practitioner points

- More ethnically homogenous social networks and less threatening perceptions about mental health problems and treatment were related to better engagement with services in Black African and Caribbean people experiencing psychosis.
- Psychosocial interventions to improve engagement in this group might benefit from collaborative formulations and individualized treatment plans that aim to build and maintain supportive social networks, enhance personal control over problems and beliefs about the benefits of treatment.
- More initiatives are needed to tackle perceived racial and ethnic discrimination in mental health services, as this was found to be associated with poorer engagement with services.
- Training and supervision to build cultural sensitivity and competence in working with people with psychosis from different ethnic and cultural backgrounds may enhance their care and engagement with services.

INTRODUCTION

In the United Kingdom, rates of psychosis are highest among Black ethnic groups, with the incidence of non-affective psychoses up to nine times greater in Black Caribbean people and up to six times higher in Black African people compared with White British populations (Fearon et al., 2006). Black people also have more adverse experiences and outcomes within mental health services, including more involuntary hospital admissions, coercion and restraint, and higher rates of relapse and readmission (Morgan et al., 2017). Previous negative experiences may fuel negative perceptions of mental health services among Black communities, leading to mistrust, dis-engagement (Keating et al., 2002), and ultimately more adverse outcomes (Kreyenbuhl et al., 2009).

Negative pathways to care and help-seeking among Black people may result from sociocultural processes, rather than ethnic differences in clinical presentation (Keating & Robertson, 2004). As such, help-seeking should be analysed within the context of social relations, where significant others offer

advice and support that influence how individuals define and respond to mental health problems (Perry & Pescosolido, 1982). For example, family members can facilitate early help-seeking for psychosis (Del Vecchio et al., 2015). Larger number of social contacts is also associated with a reduced likelihood of accessing care via acute services and shorter duration of untreated psychosis (Bhui et al., 2014).

Social networks are a set of social relations that form connections between individuals (Crossley et al., 2015). Having larger social networks is associated with improved outcomes in people with schizophrenia (Degnan et al., 2018). However, there is heterogeneity relating to the definition and measurement of social networks. For example, many studies conflate the concept of social network with social support and set upper limits when measuring the size of networks (Degnan et al., 2018). Moreover, most studies do not investigate potential mechanisms by which larger social networks relate to improved outcomes in psychosis; with only two studies suggesting relationships may be partially explained by reduced stigma (Sibitz et al., 2011) and improved social skill (Macdonald et al., 1998).

It is also important to note that larger social networks may not necessarily mean greater levels of social support (Gayer-Anderson & Morgan, 2013). For example, it is well established that stressful or critical interactions can increase the risk of relapse in schizophrenia (Butzlaff & Hooley, 1998). Some research suggests that networks of moderate size and density (or interconnectedness) may be most beneficial for outcome (Becker et al., 1998; Dozier et al., 1987; Goldberg et al., 2003), perhaps because they are more manageable, whilst providing access to outside resources not available in more densely interconnected networks (Albert et al., 1998).

Qualitative research in Black minority ethnic groups suggests that stigma, racial or ethnic discrimination, and beliefs about mental illness existing within social networks may influence engagement. Individuals from Black and minority ethnic communities may internalize the negative experiences of others generated through storytelling in social networks, which prevents future help-seeking (Kovandžić et al., 2011). Black Caribbean people in the United Kingdom have reported avoiding services due to perceived discrimination and expectations of racist maltreatment (McLean et al., 2003). Research suggests that reporting of discrimination is higher among those who had an admission in the past five years, had experienced involuntary admission, and for people of Black or mixed Black and White ethnicity (Henderson et al., 2015). There is evidence that experiences of discrimination impact on engagement, as a result of mistrust and poorer therapeutic relationships (Clement, Williams, et al., 2015). Experiences and perceptions relating to mental health problems and professional mistreatment might mean that Black people are more likely to access support from informal social networks (e.g., family, friends, spiritual, or community) rather than mainstream services (Obasi & Leong, 2009).

The most cited model of illness beliefs, the Self-Regulation Model (Leventhal et al., 1984), views individuals as active problem solvers whose coping responses are guided by emotional and cognitive representations of their illness. The SRM has been applied to severe mental health problems, with associations between specific illness perceptions and outcomes (Baines & Wittkowski, 2013). For example, the belief that symptoms have more negative consequences predicts greater depression and lower perceived quality of life over a 6-month period in people with schizophrenia (Lobban et al., 2004). One study examined the relationship between illness perceptions and service engagement in psychosis and found that a more coherent understanding of problems, fewer perceived negative consequences, perceptions that treatment can help, and greater perceived personal control are related to better self-reported engagement (Williams & Steer, 2011). It is plausible that people of Black ethnicity have different illness perceptions that are related to their engagement with mental health services. However, the application of the SRM in Black people with psychosis has not been investigated.

High levels of stigma surrounding mental health problems in Black, and minority ethnic communities may be a barrier for seeking professional help (Kovandžić et al., 2011; Mantovani et al., 2017; Shefer et al., 2013). Stigma is common in psychosis (The Schizophrenia Commission, 2012; Wood et al., 2014), and is higher in Black compared with White non-clinical populations (Anglin et al., 2006). The internalization of stigmatizing views (internalized stigma or self-stigma) is related to reduced self-esteem, psychological distress and can impede recovery (Link et al., 2001; Livingston & Boyd, 2010). Higher internalized stigma has been associated with reduced help-seeking and this effect is enhanced

for minority groups (Clement, Schauman, et al., 2015). Further research is needed to better understand the links between stigma and engagement in minority ethnic communities.

The overall aim of this study was to examine whether social networks and psychological factors are associated with engagement in Black African and Caribbean people diagnosed with non-affective psychosis receiving care in the United Kingdom. The first objective was to examine cross-sectional associations between current service engagement, social networks, illness perceptions, internalized stigma, and perceived racial or ethnic discrimination in mental health services. Based on previous research, it was hypothesised that higher perceived discrimination and internalized stigma, and specific illness perceptions (i.e., more negative consequences, less coherent understanding, less perceived treatment and personal control, greater identity, concern, and emotional distress) would be related to poorer engagement. It was also hypothesised that larger and more interconnected and ethnically homogenous social networks with would be associated with better engagement with mental health services. The second objective was to conduct non-linear comparisons between social network characteristics (size and density) and engagement to determine whether a curvilinear relationship existed. This was based on previous findings suggesting that networks of moderate size and density may be more beneficial for outcome (Dozier et al., 1987; Goldberg et al., 2003). The third objective was to test two separate models to examine social and psychological variables that were hypothesised to predict service engagement from the staff and service user perspective, whilst adjusting for clinical or sociodemographic confounders. The final objective was to examine whether psychological processes (i.e., illness perceptions, stigma, or racial/ ethnic discrimination) mediated the relationships between social networks and engagement with services as rated by service users and key workers.

DESIGN

A cross-sectional design was used.

METHODS

Setting

Participants were recruited via self-referral or through their clinical teams from National Health Service (NHS) inpatient wards, rehabilitation units and community services (early intervention services and community mental health teams) and third sector organizations in Greater Manchester. Participants were also recruited as part of a National Institute for Health Research (NIHR) feasibility trial led by the senior author (Edge et al., 2016, 2018).¹

Participants

Inclusion criteria were

- (i) A case note-recorded diagnosis of schizophrenia or non-affective psychosis (ICD-10 F20-29 or DSM-5).
- (ii) Self-identify as African-Caribbean, 'Mixed' African-Caribbean, Black-British, Black African, or 'Mixed' Black African.
- (iii) <18 years.

¹The full title of the study is 'Culturally-adapted Family Intervention (CaFI) for African-Caribbeans diagnosed with schizophrenia and their families: a feasibility study of implementation and acceptability'. The study was funded through the NIHR Health Service and Delivery Research (HS&DR) programme (project ref: 12/5001/62).

- (iv) English-speaking.
- (v) Under care of mental health services during the past month.

Participants were excluded if they had a primary substance abuse diagnosis, cognitive impairment implicated in aetiology, or if they were assessed as being too unwell or lacking capacity.

Of the 84 participants referred, 51 (60.71%) consented to participate. Five participants dropped out during the study. No data was available for one participant who withdrew post-consent due to worsening symptoms. Four participants completed some measures but two lost contact, one relapsed, and the other was imprisoned before assessments were completed.

Measures

Service engagement

The Service Engagement Scale (SES; Tait et al., 2002) is a questionnaire measuring engagement from a staff member perspective. It includes 14 items and four subscales: availability, collaboration, help-seeking, and treatment adherence. The SES has been validated in psychosis samples (Tait et al., 2002) and the total score showed good internal consistency in the current study ($\alpha = .79$). The Singh O'Brien Level of Engagement Scale (SOLES; O'Brien, White, et al., 2009) is a 16-item self-report measure of engagement with services. The SOLES comprises two subscales: acceptance for need of treatment; and perceived benefit of treatment. The SOLES has been validated in people with psychosis (O'Brien, White, et al., 2009) and excellent internal reliability was found for the total score in the present study ($\alpha = .88$).

Social network mapping interview

Network mapping semi-structured interviews collected social network information (Crossley et al., 2015). This study used a modified version of the personal wellbeing network (PWN) interview (Pinfold et al., 2015). The PWN has demonstrable face validity (Sweet et al., 2018) and similar network mapping interviews have established reliability (Siette et al., 2015). Several different structural, compositional, and transactional social network variables can be generated. Three variables were measured: *network size* (number of people in the network), *network density* (interconnectedness), and *network homophily* (the extent to which one forms relationships with individuals who are like themselves). The name generator approach (Campbell & Lee, 1991) was used to obtain an exhaustive list of people in the participant's social network. This included nine questions that focused on different types of social interaction between the participant and their social network members (e.g., *who are the people you enjoy seeing or spending time with?*), with a final question asking the participant to list anyone in their social network who they have not yet recalled. Participants were instructed to recall people with whom they have regular contact or an important or meaningful relationship. There was no upper limit on the number of people participants could recall.

To gather information on the *density* (or *interconnectedness*) of the network, participants were supported to draw lines between those people who knew one another. Density is calculated by dividing the number of actual connections between network members by the number of potential connections. Scores range from 0 to 1, with higher scores indicating higher densities.

The external-internal (EI) index (Krackhardt & Stern, 1988) was used to measure *network ethnic homophily*. The EI index calculated the number of social connections in a different ethnic group (external social ties) minus the number of connections in the same ethnic group (internal social ties) divided by the total number of connections. The EI index ranges from -1 (all social ties in same group) to 1 (all social ties in different group). Participants were asked to report the ethnic background for each person listed and these were categorized into 'Black African', 'Black Caribbean', and 'other'. Lower EI index scores equate to a more ethnically homophilous network (i.e., more social ties of the same ethnic background).

Illness perceptions

The Brief Illness Perception Questionnaire (Brief-IPQ; Broadbent et al., 2006) is a self-report measure of illness perceptions based on the SRM (Leventhal et al., 1984). The IPQ was originally developed for physical health problems but has been modified for mental health problems, including schizophrenia (IPQ-S; Lobban et al., 2005). Items of the IPQ-S have been combined to compute an overall score which gives an idea of how negative or 'threatening' the overall illness model is (Lobban et al., 2006). The Brief-IPQ includes nine items: five cognitive representations (consequences, timeline, personal control, treatment control, and identity); two emotional representations (concern and emotional representation); and one comprehensibility (coherence). The wording on the BIPQ was adapted to be more user-friendly (whilst retaining the integrity of the item) and the term 'illness' was replaced with 'mental health problem'.

Racial or ethnic discrimination in mental health services

A measure of perceived racial or ethnic discrimination in NHS mental health services was developed as existing measures focused on African American samples and were not deemed relevant to the experiences of Black people in healthcare settings in the United Kingdom (for review of measures, see Bastos et al., 2010; Kressin et al., 2008). The Perceived Discrimination Measure (PDM) includes two items: (1) *NHS mental health services discriminate against people (treat people unfairly) because of their racial/ethnic background*; and (2) *NHS mental health services discriminate against me (treat me unfairly) because of my racial/ethnic background*. Participants are asked to rate these statements on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The Spearman Brown coefficient for the two items of the PDM in this study was .89.

Internalized stigma

The Internalized Stigma of Mental Illness (ISMI) scale (Ritsher et al., 2003) is a 29-item self-report measure with five subscales: alienation, stereotype endorsement, discrimination experiences, social withdrawal, and stigma resistance. Internal consistency for the ISMI total score was excellent ($\alpha = .87$).

Psychosis symptom severity

The Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987) is a widely used and validated 30-item semi-structured clinical interview designed to provide a standardized assessment of positive, negative and general psychopathology symptoms in schizophrenia during the previous week. Two researchers were trained to conduct and rate the PANSS; intraclass correlation coefficients (ICCs) for the subscales scores were $> .80$. The PANSS total showed good internal consistency in the present study, with a Chronbach's alpha coefficient of $\alpha = .83$.

Procedure

Ethical approval was obtained from the NHS research ethics committee. Service users were invited to attend an appointment with the study researcher at a location of their choice. Key workers met with the researchers to complete the SES no later than two weeks following service user consent. To reduce burden, service users were given the option to complete the PANSS and network interviews in separate assessments within a two-week time interval.

Data analysis

SPSS version 23 (IBM Corp, 2017) was used to analyse the data. UCINET (Borgatti et al., 2002) was used to calculate network ethnic homophily. Skewness and kurtosis z scores were assessed for normality. Data that were skewed were transformed for correlational analyses. Geometric means were calculated for log-transformed data (i.e., network size, network ethnic homophily). Medians are presented for squared data (i.e., SES total) and data that could not be transformed (i.e., BIPQ treatment control, concern, coherence). Pearson correlation coefficients were used for normally distributed continuous data and Spearman for skewed data. One-way ANOVAs and t -tests or non-parametric alternatives were used to examine associations between continuous measures and categorical sociodemographic data (Table 1). One participant with no data was excluded from the analysis (i.e., listwise deletion). If participants had missing item-level data on a specific measure, the missing item(s) was replaced with the mean score for that measure. One-way ANOVAs and t -tests showed no differences in clinical and sociodemographic variables between the sample with and without missing data ($p < .05$).

To analyse the possibility of a non-linear relationship between the structure of social networks and engagement with services, the sample was grouped according to quintiles for network size and density. One-way ANOVAs (F ratios) followed by linear, and quadratic (non-linear) contrasts were conducted in SPSS to examine overall group differences and whether any significant main effects could be explained by differences between specific quintiles.

Multiple linear regression was used to examine whether significant independent variables (IVs) were associated with service user (SOLES total) and staff reported (SES total) engagement. Two separate models were tested for SOLES and SES, adjusting for potential clinical and sociodemographic confounders that correlated with these variables.

Mediation analysis was used to explore potential pathways by which social networks might be related to engagement. Mediation analysis was conducted using the Process macro for SPSS (Hayes, 2013). Bootstrapping with 5000 random samples was used to examine indirect effects (i.e., the effect of the IV on the DV via the mediator), with significant effects observed when the 95% confidence intervals (CI) does not cross the point of null effect (Hayes, 2013).

RESULTS

Sample characteristics and descriptive statistics

Sample characteristics and descriptive statistics for measures are presented in Tables 1 and 2. Higher severity of symptoms (PANSS total) was significantly related to poorer staff-reported engagement (SES; Table 3). No other potential confounders significantly related to SOLES or SES ($p < .05$).

Social networks and engagement

Correlations are presented in Table 3. Consistent with predictions, greater network ethnic homophily (i.e., more ethnically homogenous social network) was significantly associated with better staff and service-user-reported engagement. Hypotheses relating to social network size and density were not supported. Non-linear analyses examined differences between five subgroups of social network size and density in terms of service user and staff-reported engagement. Statistical comparisons were made between five subgroups or (quintiles) of social network size (i.e., number of social contacts: 3–6; 7–9; 10; 11–14; 15–43) and density (i.e., 0–0.25; 0.26–0.39; 0.40–0.56; 0.57–0.73; 0.74–1.0). Contrary to predictions, one-way ANOVAs (with linear and quadric contrasts) showed no overall significant group differences between quintiles of social network size or density in terms of total

TABLE 1 Clinical and sociodemographic characteristics of the sample ($n = 51$)

Characteristic	
Age (years), mean (SD)	42.38 (13.01)
Gender, female, n (%)	15 (29.4)
Ethnicity, n (%)	
Black Caribbean	33 (64.7)
Black African	12 (23.5)
White and Black Caribbean	4 (7.8)
White and Black African	2 (3.9)
Employment, n (%)	
Unemployed/long-term sickness or disability	39 (83.0)
Employed/student/volunteer	8 (17.0)
Education, n (%)	
High school education	27 (57.4)
Other/no qualifications	20 (42.6)
Marital status, n (%)	
Married/cohabiting	6 (13.0)
Single/divorced/separated	40 (87.0)
Diagnosis, n (%)	
Schizophrenia	17 (33.3)
Paranoid schizophrenia	16 (31.4)
Schizoaffective disorder	8 (15.7)
Delusional disorder	1 (2.0)
Non-affective psychosis	9 (17.6)
Duration contact with services (years), mean (SD)	17.28 (13.61)
PANSS, mean (SD)	
Total	66.96 (15.92)
Positive	15.85 (5.72)
Negative	16.84 (4.60)
General	34.18 (8.54)

Note: $N = 47$ due to missing data, other than age, gender, and ethnicity where $N = 51$.

Abbreviation: PANSS, Positive and Negative Symptom Scale.

SES, $F(4, 41) = 0.76, p = .557$; $F(4, 41) = 0.66, p = .623$, and SOLES, $F(4, 41) = 0.70, p = .598$; $F(4, 41) = 0.88, p = .484$.

Illness beliefs, stigma, discrimination, and engagement

BIPQ illness perceptions were related to engagement in predicted directions. Higher BIPQ perceived personal control was significantly related to better staff-reported engagement, and higher scores on BIPQ treatment control, identity, concern, and emotional response were significantly associated with better service-user-reported engagement. However, BIPQ timeline, negative consequences and coherence were not associated with engagement. In line with hypotheses, there was a significant correlation between higher perceived racial/ethnic discrimination in services and poorer service-user-reported engagement. Contrary to predictions, internalized stigma was not related to staff- or service-user engagement. Scores on SES and SOLES were not significantly correlated.

TABLE 2 Descriptive statistics (means, standard deviations, and range) for engagement, social networks, racial/ethnic discrimination, internalized stigma, illness perceptions, and psychosis symptom measures ($n = 51$)

	Measure	<i>N</i>	Range	Mean (<i>SD</i>)
1	SES Total	49	0–30	<i>10.54 (7.28)</i>
2	SOLES Total	49	56–160	119.18 (27.76)
3	SN Size	46	3–43	<i>12.09 (8.43)</i>
4	SN Density	46	0–1	0.50 (0.25)
5	SN EH	46	–1 to 1	<i>0.27 (0.53)</i>
6	ISMI Total	49	32–103	63.41 (16.05)
7	PDM Total	49	2–10	5.73 (2.64)
8	BIPQ Consequences	47	0–10	6.53 (3.18)
9	BIPQ Timeline	47	0–10	6.02 (3.53)
10	BIPQ Personal Control	47	0–10	5.66 (3.27)
11	BIPQ Treatment Control	47	0–10	<i>7.28 (2.91)</i>
12	BIPQ Identity	47	0–10	5.96 (3.34)
13	BIPQ Concern	47	0–10	<i>6.70 (3.77)</i>
14	BIPQ Coherence	47	0–10	<i>7.04 (2.91)</i>
15	BIPQ Emotional Response	47	0–10	6.09 (3.15)

Note: Bold italicized values = skewed data; Geometric mean log-transformed variables: size = 9.65, network ethnic homophily = 0.11; Median scores: SES total = 8 (square root transformation); BIPQ treatment control = 8, BIPQ concern = 8, and BIPQ coherence = 8 (slight negative skew).

Abbreviations: BIPQ, Brief Illness Perception Questionnaire; EH, ethnic homophily; ISMI, Internalized Stigma of Mental Illness Scale; PANSS, Positive and Negative Symptom Scale; PDM, Perceived Discrimination Measure; SES, Service Engagement Scale; SN, social network; SOLES, Singh O'Brien Level of Engagement Scale.

Predicting engagement with services

Model to predict service-user-reported engagement

Based on significant associations with SOLES, the independent variables included in the model to predict service-user-reported engagement were network ethnic homophily, PDM discrimination in services and BIPQ illness perceptions. BIPQ treatment control was entered into the model, based on previous literature suggesting its importance for engagement and outcomes in psychosis (Baines & Wittkowski, 2013; Williams & Steer, 2011). The predictors were entered simultaneously into the model. The overall regression model was significant and explained 30% of the variance in service user reported engagement, $F(3, 42) = 6.12, p = .001, R^2 = .30$ (Table 4). Direct effects indicated that network ethnic homophily was independently associated with engagement, but BIPQ treatment control and PDM perceived racial/ethnic discrimination in services did not significantly contribute to the model.

Exploratory mediational analyses examined potential pathways by which the predictor variables might lead to service-user-reported engagement. Several separate linear regression analyses were carried out to further explore the relationships between variables in the model that were significantly correlated (Table 3) and to identify potential mediatory pathways.

Model one (Figure 1) suggested that social network ethnic homophily (independent variable) predicted service-user-reported engagement (dependent variable) via perceived racial/ethnic discrimination in mental health services (mediator). Based on the direction of significant associations, model one proposed that a more ethnically diverse network leads to poorer engagement through greater perceived racial/ethnic discrimination in services. As shown in Table 5 network ethnic homophily significantly predicted engagement ($F[1, 44] = 12.95, p = .001, R^2 = .23$) and racial/ethnic discrimination ($F[1, 44] = 1.76, p = .010, R^2 = .14$), and, together, network ethnic homophily and racial/ethnic discrimination significantly predicted engagement ($F[2, 43] = 6.78, p = .003, R^2 = .24$). However, when racial/ethnic discrimination was

TABLE 3 Correlations between engagement, social networks, internalized stigma, racial/ethnic discrimination, illness perceptions, and psychosis symptoms ($n = 47$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 SES	–	.24	–.21	–.07	.43**	.24	.18	.24	.15	–.36*	–.22	.15	.06	–.26	.23	.37*
2 SOLES	–	–.13	.04	.30*	–.04	.32*	–.13	–.13	–.22	.06	.43**	–.43**	.45**	–.26	–.33*	.13
3 SN Size	–	–	–	.17	–.41**	–.17	.06	–.23	.02	.18	–.20	.07	.04	.16	–.22	–.04
4 SN Density	–	–	–	–	–.31*	–.20	.06	–.31*	–.30*	.21	.06	–.22	.08	.25	–.37	.09
5 SN EH	–	–	–	–	–	.14	.35*	.15	.13	–.17	–.18	.08	–.05	–.25	.18	.23
6 ISMI	–	–	–	–	–	–	.32*	.50**	.47**	–.49**	–.23	.42**	.42**	.32*	.55**	.32*
7 PDM	–	–	–	–	–	–	–	.09	.18	–.15	.31*	.03	.19	–.27	.07	.42**
8 BIPQ C	–	–	–	–	–	–	–	–	.51**	–.35**	–.05	.46**	.50**	–.13	.53**	.31*
9 BIPQ T	–	–	–	–	–	–	–	–	–	–.64**	–.12	.54**	.25	.37**	.52**	.30*
10 BIPQ PC	–	–	–	–	–	–	–	–	–	–	.38**	–.40**	–.21	.38**	–.55**	–.31*
11 <i>BIPQ TC</i>	–	–	–	–	–	–	–	–	–	–	–	.07	.07	.39**	–.21	–.51**
12 BIPQ I	–	–	–	–	–	–	–	–	–	–	–	–	.59**	–.05	.62**	.34*
13 <i>BIPQ CON</i>	–	–	–	–	–	–	–	–	–	–	–	–	–	.06	.53**	.24
14 <i>BIPQ COH</i>	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–.25	–.32*
15 BIPQ ER	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	.45**
16 PANSS	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Note: Italicized values = Spearman's correlations for untransformed/skewed data, BIPQ treatment control, concern and coherence; Due to varying missing data across study measures, samples sizes ranged from $n = 45$ to $n = 47$. Bold* = significant at $p < .05$; Bold** = significant at $p < .01$.

Abbreviations: BIPQ, Brief Illness Perception Questionnaire; C, consequence; COH, coherence; CON, concern; EH, ethnic homophily; ER, emotional response; Higher scores, poorer engagement; I, identity; ISMI, Internalized Stigma of Mental Illness Scale; PANSS, Positive and Negative Symptom Scale; PC, personal control; PDM, Perceived Discrimination Measure; SES, total SQRIT transformed; SES, Service Engagement Scale; SN, social network; Social Network Size and Ethnic Homophily; LOG transformed; SOLES, Singh O'Brien Level of Engagement Scale; T, timeline; TC, treatment control.

TABLE 4 A model to predict service-user reported engagement with services (SOLES), with social network ethnic homophily, illness perceptions, and racial/ethnic discrimination as independent variables ($n = 46$)

Variable	<i>B</i>	<i>SE B</i>	CI (95%)		β	<i>p</i> Value
SN EH	20.33	7.23	5.73	34.92	.39	.007*
BIPQ-TC	-2.50	1.27	-5.05	0.05	-.27	.055
PDM	0.54	1.52	-2.53	3.61	.05	.726

Note: Significant at * $p < .01$; ** $p < .001$.

Abbreviations: *B*, unstandardized regression coefficients; BIPQ-TC, Brief Illness Perception Questionnaire-Treatment Control; CI, confidence interval for *B*; PDM, Perceived Discrimination Measure; *SE B*, standard error of *B*; SN EH, Social Network Ethnic Homophily LOG transformed; β , standardized coefficient Beta.

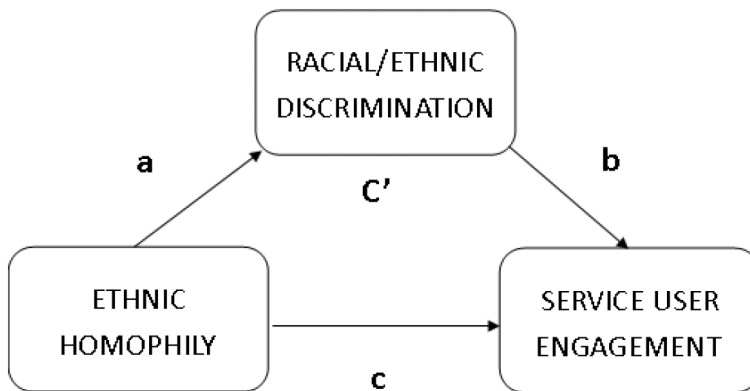


FIGURE 1 Model 1: proposed mediational model to predict service user engagement

entered into the model, the effects of network ethnic homophily on engagement remained significant and did not lessen but, conversely, strengthened. This suggests that the mediational pathway proposed in model one was not present and therefore no further analyses were conducted (Table 6).

Model two (Figure 2) proposed that perceived racial/ ethnic discrimination in mental health services (independent variable) predicted service user reported engagement (dependent variable) via BIPQ treatment control (mediator). Based on theoretical assumptions and correlations coefficients (Table 3), greater perceived racial/ethnic discrimination was hypothesised to lead to poorer engagement through lower perceived benefits of treatment. Separate linear regressions suggested mediation may be present (Table 5). Racial/ethnic discrimination significantly predicted engagement ($F[1, 47] = 5.45, p = .024, R^2 = .10$) and BIPQ treatment control ($F[1, 45] = 4.67, p = .036, R^2 = .09$), and BIPQ treatment control predicted engagement ($F[1, 45] = 7.49, p = .009, R^2 = .14$). When BIPQ treatment control was included as a predictor, the overall model retained significance, but the effects of racial/ethnic discrimination became non-significant ($F[2, 44] = 4.58, p = .016, R^2 = .17$). Mediation analysis was therefore conducted using the Process macro (Hayes, 2013) to examine the indirect (mediated) pathways between racial/ethnic discrimination, BIPQ treatment control and engagement. Results suggested no significant mediation of BIPQ treatment control; the indirect effect was not significant as indicated by the 95% bootstrapped confidence interval (BCa CI) crossing zero ($B = 1.05 [SE B = 0.78]$; 95% BCa CI = -0.01 to 3.34).

A model to predict staff reported engagement

Social network ethnic homophily and BIPQ personal control were included in the multivariate regression model with staff-reported engagement as the outcome variable (see Table 6). PANSS total was

TABLE 5 Linear regression analyses to test assumptions for two hypothesised models for mediation pathways from predictor variables to service user reported engagement (*n* = 46)

Model (path)	Outcome	Variables	<i>B</i>	<i>SE B</i>	CI (95%)	β	<i>p</i> Value
1(c)	SOLES	SN EH	24.61	6.84	10.83 38.38	.48	.001**
1(b)	SOLES	PDM	3.42	1.45	0.47 6.37	.32	.024*
1(a)	PDM	SN EH	0.08	0.03	0.02 0.14	.38	.010*
1(c')	SOLES	SN EH	22.31	7.40	7.38 37.23	.43	.004*
		PDM	1.27	1.53	-1.81 4.34	.12	.412
2(c)	SOLES	PDM	3.42	1.45	0.47 6.37	.32	.024*
2(b)	SOLES	BIPQ TC	-3.50	1.28	-6.08 -0.93	-.38	.009*
2(a)	BIPQ TC	PDM	-0.35	0.16	-0.68 -0.03	-.31	.036*
2(c')	SOLES	PDM	1.92	1.53	-1.17 5.01	.18	.217
		BIPQ TC	-2.99	1.34	-5.68 -0.30	-.32	.030*

Note: Model assumptions: path c = x variable predicts y; path b = mediator variable predicts y; path a = x variable predicts mediator; path c' = x variable no longer predicts y or is lessened predicting y. Significant at **p* < .01; ***p* < .001.

Abbreviations: *B*, unstandardized regression coefficients; BIPQ TC, Brief Illness Perception Questionnaire, treatment control; CI, confidence interval for *B*; PDM, Perceived Discrimination Measure; *SE B*, standard error of *B*; SN EH, Social Network Ethnic Homophily LOG transformed; SOLES, Singh O'Brien Level of Engagement Scale; β , standardized coefficient Beta.

TABLE 6 A model to predict staff reported engagement with services (SES), with psychosis symptoms, ethnic homophily, and BIPQ personal control as independent variables (*n* = 46)

Block	Variable	<i>B</i>	<i>SE B</i>	CI (95%)	β	<i>p</i> Value
1	PANSS total	0.03	0.01	0.01 0.05	.37	.011*
2	PANSS total	0.02	0.01	-0.00 0.03	.22	.118
2	SN EH	0.70	0.27	0.16 1.24	.34	.013*
2	BIPQ PC	-0.09	0.04	-0.18 0.00	-.26	.060

Note: Significant at **p* < .01.

Abbreviations: *B*, unstandardized regression coefficients; BIPQ PC, Brief Illness Perception Questionnaire-personal control; CI, confidence interval for *B*; PANSS, Positive and Negative Symptom Scale; *SE B*, standard error of *B*; SN EH, Social Network Ethnic Homophily LOG transformed; β , standardized coefficient Beta.

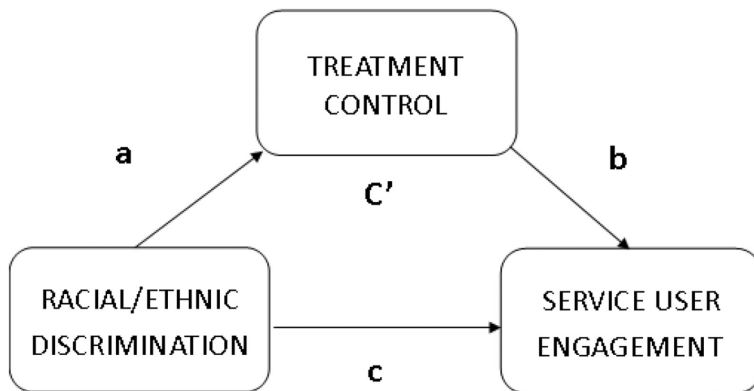


FIGURE 2 Model 2: proposed mediation model to predict service user engagement

included as a covariate given its significant relationship with SES. Hierarchical regression was used with the control variable, PANSS total, entered in the first block and the predictors BIPQ person control and network ethnic homophily in the second block. The overall regression models for both blocks were significant. The first model with PANSS symptoms explained 14% of the variance in engagement ($F[1, 44] = 7.07, p = .011, R^2 = .14$) which increased to 32% of the variance when adding in the two predictors, $F(3, 42) = 6.44, p = .001, R^2 = .32, \Delta R = .18$. In the second model, network ethnic homophily was significantly positively associated with engagement but BIPQ personal control and PANSS symptoms were no longer significant. Correlation coefficients between variables in the model suggest assumptions for mediation analyses were not met; network ethnic homophily and personal control were significantly related to PANSS and engagement but not to each other and therefore no further analyses were conducted (see [Table 3](#)).

DISCUSSION

This study examined engagement with mental health services in Black people with psychosis in the United Kingdom. Social networks, illness perceptions, and perceived racial or ethnic discrimination in mental health services were significantly associated with engagement with services. However, contrary to hypotheses, internalized stigma was not related to engagement with services.

Findings suggest that more ethnically homogenous social networks are associated with improved engagement from both staff and service user perspectives. There was no evidence for mediatory effects of illness perceptions and racial or ethnic discrimination in the relationships between ethnic homogeneity and engagement. It is possible that other untested psychological mechanisms may explain the relationships between social network ethnic homogeneity and service engagement, such as cultural beliefs, network resources in the network, or the quality of relationships. Being surrounded by people who are of a similar ethnic background may facilitate an increased sense of self-identity and self-esteem (Reininghaus et al., 2010), which may improve the likelihood of engaging effectively in treatment.

The current findings are consistent with the 'ethnic-density effect', whereby living in more ethnically-dense communities is related to reduced distress (Becares et al., 2009). The beneficial effects of ethnic density may reflect greater levels of social network cohesion and support (Becares et al., 2009). Focusing just on composition could limit knowledge about the social context as it ignores how networks are structured around the individual (Crossley et al., 2015). In this study, a more ethnically homogenous social network was significantly associated with larger and more densely interconnected networks. However, network size and density were not associated with engagement in this study, suggesting the interaction between social network structure and ethnic composition does not account for the beneficial effects of ethnic homogeneity on engagement.

The findings are inconsistent with previous studies showing that better help-seeking in psychosis is associated with larger and more cohesive networks (Carpentier & White, 2002) and a greater number of social connections (Albert et al., 1998; Becker et al., 1997; Bhui et al., 2014; Cole et al., 1995; Jeppesen et al., 2008; Larsen et al., 1998). Two of the latter studies (Becker et al., 1997; Bhui et al., 2014) were carried out in the United Kingdom and used good quality network measures and ethnically diverse samples. However, these two studies focused on initial access to services. The positive influence of a larger and more cohesive social network on help-seeking may not persist once people have already accessed mental services. The inconsistent findings may also reflect the reduction in social network size over time that can occur after illness onset and suggest that the quality of the network may be more important than size in that a small number of people providing informal support may have a significant influence on engagement (Gayer-Anderson & Morgan, 2013).

In this study, there was also no evidence for a curvilinear relationship between social network size or density and engagement which is inconsistent with previous findings highlighting the beneficial effects of having moderately sized and interconnected networks on outcomes (Becker et al., 1998; Dozier et al., 1987; Goldberg et al., 2003).

In accordance with previous research in psychosis (Watson et al., 2006; Williams & Steer, 2011), specific illness perceptions (including greater perceived personal control over problems, belief that treatment is helpful in controlling symptoms, and perceptions of greater concern and emotional distress) were related to engagement with services. However, contrary to previous studies (Broadbent et al., 2008; Watson et al., 2006; Williams & Steer, 2011), fewer perceived negative consequences and a more coherent understanding were not related to engagement. Discrepancies may be explained by differences in measurement, as two of the latter studies (Broadbent et al., 2008; Watson et al., 2006) examined medication adherence and only Williams and Steer (2011) measured engagement as a multifaceted construct using a validated questionnaire, the Engagement Measure (Gillespie et al., 2004). Alternatively, a more coherent understanding of problems and the extent to which there are negative consequences may not be important for engagement in Black people with psychosis. Notwithstanding, these findings provide further support for the application of the Self-Regulation Model (Leventhal et al., 1984) and suggest it may be useful in predicting in engagement in Black people with psychosis.

The finding that higher perceived racial or ethnic discrimination in services was related to poorer service-user-reported engagement is consistent with previous reports of avoidance of mental health services in Black Caribbean communities due to fear of racist maltreatment (McLean et al., 2003). Findings suggest that perceptions of racism continue to effect engagement of Black service users when they are receiving treatment in services. The significance of institutional racial discrimination in Black African and Caribbean people has been raised repeatedly in relation to their increased risk of psychosis, and coercive and adverse pathways to care (Commission for Healthcare Audit and Inspection, 2005; Department of Health, 2005; Karlsen et al., 2005; Nazroo, 2015). Others have argued that focusing on racism is unhelpful for addressing ethnic inequalities in mental health services, as this serves to reinforce stereotypes and further mistrust among Black minority groups (Singh et al., 2007, 2014; Singh & Burns, 2006). However, this study suggests Black service users' perceptions of institutional racism influence how they engage with treatment and professionals, meaning that efforts to tackle perceived discrimination in services could improve engagement. The finding that perceived discrimination in mental health services was not related to staff-reported engagement may suggest that service users' perceptions of discrimination are not spoken about. Overt engagement, such as attendance at appointments and medication compliance, may mask underlying negative feelings towards services or professionals (Chase et al., 2012).

The finding that stigma experienced is not related to current engagement in mental health services is inconsistent with previous studies (Clement, Schauman, et al., 2015). Problems with defining the stigma construct and its cultural relevance have previously been highlighted (Semrau et al., 2015; Wood et al., 2015, 2016). The current sample reported moderate levels of stigma which may not be representative of all Black people who experience psychosis (Rathod et al., 2010). Most of the current sample had been in services for many years. It is possible that higher stigma would be observed in Black people who are at earlier stages of psychosis where, for example, heightened distress and a lack of knowledge may have reduced the likelihood of disclosure and professional help-seeking (Clement, Schauman, et al., 2015; Kovandžić et al., 2011; Shefer et al., 2013). However, this is inconsistent with research showing that experienced discrimination increases with length of time in services (Hamilton et al., 2016). It is also plausible that protective factors such as self-esteem, external shame and social rank which have been shown to mediate the relationship between stigma and recovery in psychosis (Wood et al., 2017) buffered the current sample against the effects of any stigma on engagement with treatment.

These findings have potentially important clinical implications. Psychosocial interventions could help service users to build and maintain social networks to facilitate their engagement with services. These findings support policies that aim to build links with communities to improve engagement (Clement, Schauman, et al., 2015; Nazroo, 2015). Developing individualized shared formulation and intervention plans may help to build alliance and engagement in treatment (Swanson et al., 2006; Thornicroft et al., 2013). This would provide a platform for mental health professionals to explore service users' views and concerns about treatment and to ensure services are meeting needs. Cultural awareness training for mental health professionals may be beneficial to facilitate more open conversations and

understanding about ethnicity and culture in clinical practice (Clement, Schauman, et al., 2015). These strategies could help to tackle perceived institutional discrimination and lack of cultural understanding or prejudice within services. Given that illness perceptions are related to engagement, psychological interventions may benefit from working with service users to develop more personal control over their mental health problems and enhance their belief that treatment can help to manage symptoms (Baines & Wittkowski, 2013).

Methodological considerations and suggested directions for future research should be considered. The SES and SOLES were selected because they measure engagement as a multifaceted construct. The finding of no relationship between scores on the staff-reported SES and service-user-reported SOLES could indicate that they are measuring different constructs. Previous research has found poor concordance between service user and staff reported engagement (O'Brien, Fahmy, & Singh, 2009; Rothman et al., 1991). Although the SES and SOLES include similar components of engagement (e.g., acceptance of the need for treatment and working alliance), the individual items and response scales are different. Future studies that aim to draw direct comparisons between staff- and service-user-reported engagement should administer the same validated measure to both groups.

Given the small sample in this study and multiple testing, the correlational analysis was exploratory and generate hypotheses for future large scales studies. The convenience sampling methods may have led to selection bias for individuals that are well engaged or have positive views of mental health services and therefore the results may not generalisable to all Black people who are currently receiving treatment in mental health services. Future research would benefit from using larger and more diverse samples including variation in terms of length of time in services and people who are not in contact with services, as there is limited work in this area (Kreyenbuhl et al., 2009).

The study was cross-sectional and therefore one cannot infer causality or the direction of the relationships between the predictor variables and engagement. It is plausible, for example, that higher perceived discrimination in mental health services leads to poorer engagement in treatment and vice versa. Longitudinal studies are needed to test causal links and whether social networks, illness perceptions, and discrimination predict engagement over time in Black people with psychosis. This is particularly important as engagement has been reported to fluctuate over time (Priebe et al., 2005). Intervention studies could examine potential causal mechanisms linking ethnic homogeneity, illness perceptions and discrimination to engagement, and to test whether targeting these factors improves engagement in Black people with psychosis.

The use of self-report measures may have led to response bias, including social desirability or recall bias. Future studies may wish to have more overt measures of engagement and how perceptions and experiences of engagement may be influenced by the type of contacts with services including involuntary Community Treatment Orders and inpatient admissions. This study developed and used a specific measure of discrimination that was not validated and included two single items. The absence of an existing culturally appropriate measure of perceived racial or ethnic discrimination for Black people in the United Kingdom (Bastos et al., 2010; Kressin et al., 2008) draws attention to a significant gap in the literature. Finally, beliefs about the causes of mental health problems have been associated with treatment adherence and therapeutic alliance in psychosis (for review, see Carter et al., 2016). This is a suggested avenue for future research as causal beliefs have not been examined in relation to current service engagement in Black people with psychosis.

CONCLUSION

In conclusion, findings suggested that more ethnically homogenous social networks are independently associated with better engagement with services in this population. Results also suggest that specific illness perceptions, including greater perceived personal control and the belief that treatment can help control problems, are related to improved engagement with mental health services. Additionally, higher perceived racial or ethnic discrimination in mental health services was associated with poorer

engagement with services. Future longitudinal research using large samples is needed to test potential causal mechanisms between social networks, illness perceptions, discrimination, and engagement. Interventions to improve engagement and relationships with services might benefit from collaborative formulations and shared individualized treatment plans that aim to build and maintain supportive social networks, enhance personal control over problems and beliefs about the benefits of treatment, and reduce perceptions of discrimination. Improving engagement with services may serve to reduce the inequalities in access, outcomes and experiences of services experienced by Black African and Caribbean people with psychosis in the United Kingdom.

AUTHOR CONTRIBUTIONS

Amy Jessica Degnan: Conceptualization; data curation; formal analysis; investigation; methodology; project administration; writing – original draft; writing – review and editing. **Katherine Berry:** Conceptualization; funding acquisition; supervision; writing – review and editing. **Matthew Vaughan:** Data curation; formal analysis. **Nick Crossley:** Conceptualization; software; supervision; writing – review and editing. **Dawn Edge:** Conceptualization; funding acquisition; supervision; writing – review and editing.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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DATA AVAILABILITY STATEMENT

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

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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