

**Brief Report:** Prevalence of clinical autistic traits within a homeless population: barriers to accessing homeless services.

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## **Abstract**

Recent research suggests a high prevalence rate of Autism Spectrum Conditions (ASC) amongst the homeless population. Although, it is well-documented that autistic people experienced many barriers to accessing health services, little is known about their challenges in accessing homeless services. Thus, the present study aimed to measure prevalence of high levels of autistic traits, and to identify barriers that prevent autistic people accessing homeless services. Participants recruited from homeless services (n=65) completed the Autism Quotient-10 (AQ-10) alongside a questionnaire regarding perceived accessibility of homeless services. Results revealed that 18.5% of participants scored Above the Clinical Threshold of the AQ-10 (ACT-AQ). Moreover, the ACT-AQ group reported that encountering big groups in shared accommodation represent a significant barrier to engaging with homeless services. Further research is needed to identify the full degree of ASC representation and the factors that might prevent autistic homeless people accessing homeless services, and thus overcoming homelessness.

## Introduction

Autism Spectrum Condition (ASC) is a heterogeneous life-long neurodevelopmental condition characterised by difficulties in social communication alongside the presence of restrictive repetitive behaviours and interests (American Psychiatric Association, 2013). Additionally, the prevalence of neurological (e.g., epilepsy, sleep disorders), developmental (e.g., intellectual disability) and mental health (e.g., depression, anxiety) comorbidities in ASC are considerably higher than those observed in other clinical populations (Boulet et al., 2009; CDC, 2014; Levy et al, 2010). For example, it is estimated that about 70% of people with ASC may have another mental health condition, whereas 41% may have two or more (e.g., anxiety and depression; Simonoff, 2008). Also, individuals on the autism spectrum face further challenges when compared to those without autism in terms of living independently and gaining employment. For instance, it has been reported that over 60% of all autistic people are financially dependent on their families (Rosenblatt, 2008). Moreover, although about 50% of people on the autism spectrum have an average IQ or above, only 15% of autistic adults at working age are in full time paid employment (e.g., Mavranouzouli et al., 2014). Furthermore, studies indicate that the challenges autistic adults encounter with regards to gaining and retaining employment often result in poverty (Nicolaidis et al., 2015).

An individual, or family, can be considered homeless if they are rough sleeping (sleeping in the open air), do not have rights to stay where they are (statutory homelessness) or 'sofa surfing' (hidden homelessness) (Fazel, Geddes & Kusel, 2014). Whilst people become homeless for a variety of reasons, it is widely accepted that unemployment is a significant contributing factor to housing instability or homelessness (Steen, Mackenzie, & McCormack, 2012). Additionally, previous research has identified that unemployment and mental health problems are the leading causes of homelessness in the United Kingdom (Crane et al., 2005; Fitzpatrick, Pawson, Bramley & Wilcox, 2012). Many jobs require an

interview process, and homeless individuals often lack the desired communication skills to successfully negotiate this process (Steen et al., 2012). For autistic individuals, these hurdles are heightened further as impairments in social communication and interaction are core features of ASC (APA, 2013). Correspondingly, studies show that autistic people find it harder than non-autistic people to gain and sustain employment (e.g., Hedley et al., 2017; Hendricks, 2010), which could result in poverty (Nicolaidis et al 2015), thus increasing the risk of experiencing homelessness.

Although, many studies have reported that the prevalence rates of various mental disorders among the homeless population are higher than in the general population (for a review see Fazel, Khosla, Doll & Geddes, 2008), little is known about the degree of ASC representation amongst such a group. We know of only one systematic empirical study investigating the links between autism and homelessness. Using informant-report measures on autistic traits by keyworkers in a homeless support service, the study found that in a sample of 106 homeless people, 12.3% (13/106) had elevated autistic traits. It was concluded that autism is likely to be over-represented among the homeless population (Churchard, Ryder, Greenhill & Mandy, 2018). This result lends support to previous findings from two small-scale 'grey literature' studies (non-peer reviewed articles) conducted in statutory and health bodies in the UK (Evans, 2011; Pritchard, 2010). It was specifically reported that 12% of people with a formal ASC diagnosis have experienced homelessness at some point in their lives (Evans, 2011), and that there is a disproportional higher prevalence rate of ASC in rough sleepers (Pritchard, 2010). Thus, an intuitive yet under-investigated hypothesis is that since autistic adults are more likely to be unemployed, face difficulties maintaining employment, and experience mental health issues, they would also be at an increased risk of homelessness.

Autistic people experience significant barriers to accessing health and social services such as lack of provider training and experience, which could result in poor physical and mental-health and economic hardship (e.g. Raymaker, McDonald, Ashkenazy & Nicolaidis, 2016; Neri & Kroll; Weiss, Tint, Paquette-Smith & Lunskey, 2016). UK government legislation (Department of Health, 2010; HM Government, 2014) suggests the development of evidence-based accessible services for people with ASC. However, there is limited evidence identifying specific barriers to guide homeless service provision. Therefore, if indeed autism is over-represented among the homeless population (as preliminary evidence suggests), it would be imperative to identify barriers preventing autistic homeless people from accessing relevant supporting services. This information could be used to guide the provision and tailoring of specific homeless services for people on the autism spectrum. Therefore, the aims of the present study were twofold; to examine the prevalence of ASC in a group of individuals in the homeless population of Lincolnshire; and to identify barriers associated with ASC that prevent individuals from accessing homeless services.

## **Methods**

### *Participants*

Participants were recruited through two Lincolnshire-based charities: 'Framework', a registered charity who provide temporary housing and support to those who are experiencing homelessness, and 'The Forge', who provide a day centre for individuals who are homeless or struggling with poverty. Individuals who had already made contact with homeless services were invited to take part in the study. In total, 65 participants took part in the study (62 male, 3 female; Age groups: 18-25, n=13; 26-30, n=9; 31-60 n=43).

## *Materials*

### **Autism Spectrum Screen**

The principal instrument used to screen for autism was the Autism Quotient-10 (AQ-10). The AQ-10 is a 10-question self-administered ASC screening tool designed for adults with average IQ or above (Allison, Auyeung & Baron-Cohen, 2012). The questions on the AQ-10 are drawn equally from five domains, including: attention to detail, attention switching, communication, imagination and social. Participants are asked to indicate whether they 'definitely agree', 'slightly agree', 'definitely disagree', or 'slightly disagree' with the questions. Responses are scored using a binary system, with each question assigned a score of 0 or 1 (i.e., 1 = endorsement of autistic-like behaviour; 0 = endorsement of non-autistic-like behaviour). The total score of the AQ-10 ranges from 0 to 10. The scale has been reported to have good sensitivity of 0.88, and specificity of 0.91 and a positive predictive value of 0.85. Thus, individuals who score 7 or more have a high probability of meeting the criteria for a clinical ASC diagnosis (Booth et al., 2013). Finally, it is worth highlighting that the AQ-10 is commonly used by frontline health professionals to guide their decision as to whether an individual should be referred for a full diagnostic assessment for autism (National Institute for Health and Clinical Excellence (NICE), 2012), and was therefore considered an appropriate tool for this study.

### **Perception of Homeless Services**

Participants were asked questions about how accessible they found homeless services. They were asked to rate service accessibility on a scale from 1 (very accessible) to 5 (totally inaccessible). Individuals were also asked to select which, if any, of the following barriers prevented them from accessing services; 'Commuting/travel', 'Sensory Issues', 'Big Groups in Shared Accommodation', 'Interview Process' or 'No Barriers'. These areas are recognised

as important autism related barriers for healthcare (Nicolaidis et al., 2015; Raymaker et al., 2016).

### *Procedure*

Participants were recruited from the homeless services in Lincolnshire (Framework & The Forge). The research was advertised on posters in the respective services prior to researchers coming. All individuals accessing the partner services on the days the researchers collected data were invited to take part in the study by their support workers. Those that agreed received the study's information pack. Participants were briefed on the nature of the study and provided informed consent before the study began. Participation was voluntary and all data were anonymised and remained confidential. Participants completed an online survey on a computer provided at their homeless services including sociodemographic questions, questions relating to barriers to accessing homeless services and the AQ-10. The study was approved by the University of Lincoln School of Psychology Research Ethics Committee (SOPREC, Ref: PSY1617320).

### *Statistical Analysis*

Pearson's correlation coefficient was used to measure the linear relationship between continuous variables. Chi square analyses were used to measure differences in proportional distribution for categorical variables. Fishers Exact statistic was reported where cell counts were low. Independent samples *t* tests were used for between groups analysis on continuous variables. Alpha was accepted at .05, and Levene's Test was used to assess equality of variance, where appropriate. Participants were removed from a specific statistical analysis when the datapoint was missing.

## Results

### *Prevalence rate of ASC within the homeless population*

The primary finding from the data was that 18.5% (12/65) of our sample scored 7 or more on the AQ-10, indicating that a high proportion of our homeless sample reported clinical levels of autistic traits.

### **Autistic traits and barriers to accessing homeless services**

#### *Correlation analyses*

Pearson correlations were performed to explore if the level of autistic traits was associated with the number of barriers to accessing homeless services. The results revealed significant positive correlations ( $r(52) = .27, p = .026$ ) between AQ-10 scores and number of barriers identified, indicating that higher levels of autistic traits were positively associated with a greater number of barriers to accessing homeless services.

#### *AQ subgroups sample characteristics*

To discern which ranges of the AQ-10 scores were influencing the correlation between autistic traits and number of barriers to accessing homeless services respondents were divided into two groups; Below Clinical Threshold AQ group (BCT-AQ; scores between 0 and 6;  $n = 53, M = 4.13, SD = .1.49$ ) and Above Clinical Threshold AQ group (ACT-AQ; scores between 7 and 10;  $n = 12, M = 7.41, SD = .67$ ). There was no difference in age category distribution (18-25, 26-30, 31+) between the BCT-AQ and ACT-AQ groups ( $\chi^2(2) 1.76, p = .48$ , Fishers Exact  $p = .40$ ).

## *AQ subgroup comparisons*

### *Individual barriers*

The identification of specific barriers to accessing homeless services were analysed individually. Overall, the categorical distribution for how accessible individuals found homelessness services did not vary significantly between group ( $\chi^2 (4) = 3.84, p = .43$ ). The ACT-AQ group were significantly more likely to identify big groups in shared accommodation as a barrier to accessing homeless services than the BCT-AQ group (BCT-AQ: No=23, Yes=5; ACT-AQ: No=7, Yes=10; ( $\chi^2 (1) = 7.12, p = .008$ , Fishers Exact .019)). None of the other barriers differed significantly between groups: Interview Process ( $\chi^2 (1) = 2.19, p=.14$ , Fishers Exact  $p = .20$ ); Sensory Issues ( $\chi^2 (1) = 1.99, p=.16$ , Fishers Exact = .20); Commuting ( $\chi^2 (1) = 2.3, p=.13$ , Fishers Exact = .24). See table 1.

Table 1: Barriers to accessing homeless services per AQ group

	BCT-AQ10		ACT-AQ10	
	No	Yes	No	Yes
Interview Process	24	5	11	6
Big Groups in Shared Accommodation	23	5	7	10*
Sensory Issues	26	2	15	2
Commuting / Travel	20	8	11	6

\* = Significant between group difference ( $p < .01$ )

## **Discussion**

Two key findings emerged from this study. Firstly, our results support previous reports suggesting a strong relationship between ASC and homelessness (Churchard et al., 2018; Evans, 2011; Pritchard, 2010). Specifically, according to the NICE clinical guideline (2012), 18.5% of our participants (12 out of 65) had a total score of 7 and above on the AQ-10, which

indicates that they should be referred for a full ASC diagnostic assessment. The exceptionally high percentage (in comparison to an ASC prevalence rate of 1.5% reported within the general population; Center for Disease Control and Prevention, 2014) suggests the possibility of a disproportional prevalence rate of ASC within the homeless population (see also Churchard et al., 2018).

Secondly, our findings, to our knowledge are the first in the UK to show a link between all levels of autistic traits (low/high/clinical) and barriers to accessing homeless services, indicating that higher levels of autistic traits were associated with a greater number of barriers to accessing such services. Specifically, our results revealed that participants in the ACT-AQ group tend to avoid engaging with homeless services due to the presence of big groups in shared accommodation. This finding is consistent with previous research reporting that one of the main barriers encountered by autistic people in accessing community health and social services is the lack of autism-friendly facilities (e.g., Nicolaidis et al., 2015; Raymaker et al., 2016; Warfield, Crossman, Delahave, Deer Weerd & Kuhlthau, 2015). Avoidance behaviours such as avoiding crowded or noisy places are thought to be common autistic characteristics as well as a source of anxiety issues (e.g., Trembath, Germano, Johanson, Dissanayake, 2012). As a result, it can be surmised that a proportion of autistic homeless individuals might become rough sleepers as a consequence of being incapable of dealing with unexpected changes in the environment and/or social encounters. Further supporting evidence for this premise is provided by Pritchard (2010) who reported that in a sample of 14 entrenched rough sleepers in Devon (United Kingdom), 65 % of them had been diagnosed with ASC. Furthermore, we did not collect data from rough sleepers as we recruited from temporary accommodation shelters. It is possible that the number of people on the autism spectrum among such a group is much greater than those accessing homeless

services. Accordingly, we strongly suggest that future research is carried to investigate ASC amongst the rough sleeping population.

The present research was not without limitations and these should be considered when interpreting the findings. Autistic traits were measured using a self-report questionnaire (AQ-10), which means that the quality of data relies on the participants' ability to give accurate responses. However, it must be noted that self-report data has become a common method for studies in ASC (e.g., Robertson & Simmons, 2013). The AQ-10 is a diagnostic screening instrument and is not designed to give a formal diagnosis but merely helps identify whether an individual should be referred for a comprehensive autism assessment (Allison et al., 2012; Ashwood et al., 2016; Booth et al., 2013; Kenny & Stansfield, 2016). However, the AQ questionnaire is widely used both in clinical practice (NICE, 2012) and in research for measuring autistic traits within clinical groups (Mealey, Abbott, Byrne, & McGillivray, 2014; Mito et al., 2014; Westwood et al., 2016) and the general population (e.g., Robertson & Simmons, 2013) as well as for identifying ASC prevalence rates within specific populations (e.g., Bates, 2016). Furthermore, the AQ-10 is designed for people with average and above intelligence who do not have a moderate or severe learning disability and we did not measure either. There has been shown to be a high prevalence of intellectual disability among homeless populations (Van Straaten et al., 2014). However, all participants reported that they understood the questions and had no difficulties responding. Finally, the present study only focused on investigating the prevalence of ASC among a small homeless sample already accessing homeless services in Lincolnshire and who were willing to take part in this study. Moreover, Lincoln has an above average 2016 Rough Sleeping Rate (per 1,000 households) of .029, compared to the national average is .020. This per 1,000 household rough sleeping rate is the 59th highest out of 326 local authorities in the UK (MHCLG, 2017). Therefore, the

prevalence rate of 18.5% does not relate to the overall homeless population open to the study and thus this statistic should be interpreted with caution.

### **Conclusion**

Our findings highlight the importance of developing autism accessible services for homeless individuals. Specifically, consistent with previous reports, we found that clinical levels of autistic traits were over-represented among our homeless sample (18.5 %). We suggest that this finding may be indicative of a disproportional prevalence rate of ASC within the homeless population and that further research is needed to clarify this suggestion (see also Churchard et al., 2018). Furthermore, we reported evidence indicating that big groups in shared accommodation are a significant barrier to engaging with homeless services for people who are likely to be autistic. The autistic population has increased health risks (Vohra, Madhavan & Sambamoothi, 2016) and reduced life expectancy (Hirvikoski et al., 2016) yet they face multiple obstacles to accessing the same services that others are able to. Such a finding could be used to inform policy and practice changes to address accessibility issues and disparities among the autistic homeless population. We suggest that future studies should give further consideration on understanding the underlying factors and behaviours that might prevent autistic homeless people accessing homeless services.

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