Urban influences on the development, perpetuation and mitigation of psychosis: a scoping review in pursuit of participatory research

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Abstract

The urban environment has long been recognised as a risk factor in the development of non-affective psychosis. Whilst epidemiological studies dominate this field, the review aims to capture the seldom-heard service user perspective and expands its scope to explore urban influences on recovery.

A structured review process identified 12 studies conducted almost exclusively in high-income countries. An assortment of methodologies was used across urban settings of varying type and scale. Neighbourhood instability appeared to hasten illness onset and delay treatment uptake. Urban upbringing was associated with a dulled affective response to stress. As symptoms emerged, sensory overload and perceived interpersonal difficulties fuelled avoidant behaviours. Open and green spaces, and everyday community places, provided opportunities for relief, routine and (re)connection with others.

Practitioners are invited to reconceptualise the role of place in the treatment of psychosis and a local geographical survey is proposed as a first step.

Keywords

Psychosis, recovery, human geography, urbanicity, stress, treatment, clinical practice

Introduction

A repository of research dating back to the 1930s informs us that urban living is, in certain societies including the United Kingdom, associated with a raised risk of experiencing 'non-affective psychosis' (Vassos et al 2012), meaning a psychotic condition without a significant mood element. This has become known as *the urbanicity effect*, with urbanicity being the impact of living in urban environments at a given time (Vlahov and Galea 2002). Childhood has been identified as a critical period for this risk-increasing effect (Marcelis et al 1999). No such spatial clustering has been consistently detected for affective psychoses (March et al 2008).

Research has expanded beyond studies of population density (Pedersen and Mortensen 2001) and vulnerable groups (Ödegaard 1932) to take account of numerous social, economic and environmental factors. Although the urbanicity effect, where present, is thought to operate across multiple domains, it is the social geography of localities which appears to be especially impactful. In particular, low social cohesion and ethnic fragmentation are cited as neighbourhood-level risk factors (March et al 2008).

The striking variation in psychosis incidence rates between urban and rural areas across England (Public Health England 2016) indicates that city living endures as a risk factor for psychosis. However, local authority area level data are likely to mask variation across urban neighbourhoods (Kirkbride et al 2007). Nevertheless, given the apparent potency of the urbanicity effect, it is assumed that urban settings may also impact on psychosis recovery. Service users diagnosed with a non-affective psychosis report high levels of agoraphobia and a desire for enhanced social functioning (Freeman et al 2019). However, research investigating urban influences on the lives of those recovering from psychosis is relatively scarce (Ünal et al 2019). Furthermore, it has not been possible to convert the findings from the urbanicity literature into practice (Abrahamyan Empson et al 2020). This constitutes a gap in both research and clinical work.

As well as contemplating the hazards of urban living, it is important to embrace the potential of urban areas to support mental health recovery. Recovery can be defined as "a fundamentally personal process that involves finding a new sense of self and feeling of hope…..it is not only an internal process; it also requires external conditions that facilitate a positive culture of healing" (Kogstad et al 2011, p479). The Community Mental Health Framework for England emphasises the importance of community places and resources in tackling mental health difficulties (NHS England, 2019). Given

that the majority of mental health service users are now supported in community rather than institutional settings (Parr 2008), there is a need and opportunity to expand and strengthen practice towards the recovery aspirations of (re)connection, active engagement and social belonging (Neil et al 2009, Leamy et al 2011). This task can be progressed by developing an understanding of urban matters as experienced first-hand by those affected.

Aim

To summarise the evidence from participatory studies investigating urban factors that impact on the lives of those experiencing or recovering from psychosis in order to inform future research and develop clinical practice.

Method

The scoping review was conducted based on the approach proposed by Arksey and O'Malley (2005). Ethical approval was not required owing to the paper being a scoping review of published studies. A preliminary evaluation of prominent and recent urbanicity reviews led to the development of the following research questions:

1. *Which urban elements are identified by service users as being harmful or distressing?*
2. *Which urban elements are identified by service users as being supportive, restorative or therapeutic?*

3. *What participatory methods have been used in studies that seek to answer the above questions?*

To ensure the reporting of research was robust and coherent, the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist (Tricco et al 2018) was utilised.

Eligibility criteria

This review was concerned with primary studies exploring the experiences of individuals recovering from a non-affective psychosis. No age limits were applied, reflecting the drive for ageless early intervention in psychosis services in England (National Institute for Health and Care Excellence 2014).

Participatory research is characterised by direct collaboration between researchers and those affected by the issue under study (Vaughn & Jacquez 2020). The review's inclusion criteria required participants to have contributed to the data collection process and had an awareness of the research being conducted. This awareness was either stated or implicit in the studies included.

A loose definition of 'urban' as large population settlements was used. No date limits were set. Papers were required to be peer-reviewed and published in English to ensure high-quality research that could be readily understood and appraised.

Information sources

Searches of the PsychINFO, Medline and CINAHL databases were performed during September and October 2021. These databases span a range of journals and disciplines relevant to the topic.

Search strategy

The following search terms were employed to locate relevant literature: *urban* AND *psychosis* OR *psychoses* OR *"psychotic disorder"* OR *schizophrenia* OR *"schizophrenia spectrum disorder"* OR *delusion** OR *hallucination** OR *paranoia* AND *"lived experience"* OR *"qualitative study"* OR *participants* OR *patients* OR *"service users"* OR *clients*. A further search conducted four weeks later replaced *urban* with the terms *neighbourhood* OR *neighborhood* OR *city* OR *cities*.

Selection process

Rayyan software for systematic reviews facilitated the screening process by storing, displaying and labelling records and by identifying potential duplicates. These duplicates were checked and removed by the first author and the titles and abstracts of those remaining were screened for relevance to the review questions. Literature reviews, commentaries and pilot / feasibility studies were also excluded by the first author at this stage. Where there was any uncertainty, this was discussed and resolved with the second

author. Thereafter, the first two authors independently screened the papers against the eligibility criteria. Any conflicts were discussed before agreeing on the final studies for review.

Data charting

The first author re-read the eligible studies and colour coded pertinent findings. Relevant data were tabulated, while this charting process included a review of study methodologies by the second author for the extraction table (See Table 1).

Collation and summary of results

Key findings were categorised in sympathy with the review questions listed earlier in this section. The authors then discussed each thematic category to summarise and interpret the data.

Findings

The database searches returned 1,195 records after duplicates were removed. A further eight records were identified through scanning the reference lists of key texts. Twenty-one records remained following the initial screening process. Due to the relatively small number of records remaining, a decision was made at this point to relax the inclusion criteria to accommodate studies with a lesser degree of participant involvement.

Nevertheless, a further nine records were excluded at the full text screening stage, producing a total of 12 studies for the review. These studies were conducted in England (*n*=2), mainland Europe (*n*=5), North America (*n*=3), Australia (*n*=1) and India (*n*=1). The urban settings varied from specific districts or busy streets to entire city regions.

Five of the studies recruited participants with a range of diagnoses or self-identified mental health problems, not exclusively non-affective psychosis. Four studies focused exclusively on individuals recovering from a first psychotic episode. The demographic profile of participants varied across studies.

Research methodologies

The studies adopted a range of quantitative, qualitative and mixed methods approaches (see Table 1). Freeman et al (2015) utilised a classic experimental design, whilst the remaining studies investigated the lived experience of service users, sometimes by employing participatory methods not commonly seen in health research. These include participatory mapping (Townley et al 2009, Duff 2012, McGrath and Reavey 2015), video ethnography (Söderström et al 2017), in-situ environmental response surveys (Frissen et al 2014, Henson et al 2020) and participant photography (Duff 2012). The degree of service user involvement in data collection and analysis varied accordingly.

[Table 1 here]

Development of psychosis

Only two studies investigated urban influences in the development of psychosis. Frissen et al (2014) compared data from individuals diagnosed with non-affective psychosis with close family members and a healthy control group. Emotional reactivity to everyday stress was found to be dampened amongst those raised in more urban areas. Significantly, this effect was detected across all three of the groups studied. Ku et al (2020) surveyed individuals being treated in a psychiatric hospital and found that high rates of residential turnover were associated with a younger age of symptom onset.

Perpetuation of psychosis

Most studies focussed on the challenges of urban living and these can be grouped into two broad categories: environmental influences and inter-personal factors. The former relates to the sensory impact of the urban environment, as demonstrated by this response from a service user when asked if they would spent time in a particular densely built place in their city. 'No I wouldn't. Hum…too surrounded by buildings to the right and to the left [….] I don't like to be in the middle of all this' (quoted in Söderström et al 2016, p108). Service users reported finding visual elements of the city especially unpleasant compared to a control group. This perception appears

to have developed after the onset of psychotic symptoms (Conus et al 2019). Difficulties managing sensory demands posed by modern urban settings such as noise tended to lead to behaviours such as avoiding urban centres at busy times (Söderström et al 2016).

Many service users reported difficulties navigating the urban social environment. The presence of others, particularly in crowded areas or at busy times of the day, was found to affect adversely mental health (Kamal & Gupta 1988, Söderström et al 2017). Traversing busy urban streets was particularly taxing for those troubled by persecutory thoughts. The experience impacted negatively on beliefs, exacerbated symptoms of anxiety and depression, and led to paranoid thoughts and auditory disturbances (Freeman et al 2015).

The challenges of the urban milieu appeared to relate to a fear of encountering acquaintances as well as the perceived threat posed by strangers. However, stigmatisation was found to be more anticipatory than grounded in actual experiences (Angermeyer et al 2004). These difficulties were especially potent during periods of crisis when some individuals reported feeling exposed and vulnerable in populated public spaces (McGrath & Reavey 2015).

Mitigation of psychosis

A slim majority of the studies (*n*=7) included information relating to how service users engaged with urban environments in ways that supported their recovery or enabled coping during periods of high distress. The anonymity of city life provided a sense of safety for some from the perceived challenges of inter-personal interactions (Angermeyer et al 2004, Söderström et al 2016). Meanwhile, service users sought out spaces that offered relief from the demands of urban life (Söderström et al 2017). Greenspace was found to benefit service users to a greater extent than healthy controls (Henson et al 2020), perhaps as a result of the greater need in the former group. Notably, this effect was not reported by service users surveyed in a separate study (Conus et al 2019). This discrepancy suggests that in-situ research approaches may produce different results to conventional surveys. It may also indicate that the benefits of spending time in nature are short-lived.

When experiencing anxiety, home provided a strong sense of sanctuary whereas moving freely through outside spaces was a tactic adopted in situations typically associated with the acute phase of psychosis such as experiencing perceptual disturbances and unusual beliefs (McGrath & Reavey 2015). Service users strived to support their recovery by establishing connections with community places that provided opportunities for informal social contact (Duff 2012), often everyday places associated with activities of

daily living (Townley et al 2009). This is reflected in Melissa's account of spending time in her local hair salon.

'I might have holes in my shoes, but if my hair is looking good then I feel like I am getting better, looking better, fitting in I suppose. I am who I am supposed to be. It's also a great place to meet people and just talk, like lots of other women will be there with their kids or pets or whatever and you just have this time to talk to people, with no pressure, and it all just adds to my confidence.' (quoted in Duff 2012, p1391)

Seemingly, the warmth and familiarity of these places holds value rather than any special innate element.

Discussion

The hazards and possibilities of place

Participatory research investigating urban influences on the development of psychosis appears small compared to the epidemiological research in this area. Asking individuals about their childhood and the period leading up to their first psychotic episode presents some ethical challenges, specifically in relation to the recall of potentially traumatic events. Moreover, participants may struggle to remember this period in their lives in sufficient detail. However, the contribution of the two studies identified is valuable as it

supports the notion that an urban childhood impacts on mental health, sometimes in ways that can increase the risk of psychosis. Furthermore, residential instability at an earlier age was also linked to psychosis, reflecting the findings of a recent multinational study (Jongsma et al 2018). Therefore, it appears that neighbourhood uncertainty and volatility and a disrupted attachment to place all pose a threat to the healthy development of young people.

The challenges of urban life for individuals experiencing or recovering from psychosis resonate with Georg Simmel's 1903 essay *The Metropolis and Mental Life* (Simmel 2012). The city can offer a sense of liberation from the stifling atmosphere of the small town, yet its complexity and intensity can overpower, and the human response is to seek refuge in the private realm. Moreover, many interpersonal interactions in large urban areas are transactional and perfunctory. In this way, the city alienates its inhabitants from one another. The experience of psychosis can make the city appear even more threatening and overwhelming, fuelling avoidant behaviours such as steering clear of busy areas, and further isolating individuals from their local communities.

As well as coping with the challenges presented by urban environments, it was evident that service users sought out meaning and connection with the material and social world around them. The way in which individuals cultivate

subjectively valuable *enabling places* as described by Duff (2012) is especially helpful in understanding this process. What such a place looks like clearly varies between individuals according to their needs and preferences and is influenced by sociodemographic and cultural factors. It is also likely to depend on the stage of their recovery.

Integrating visual methods

Visual research methods utilise images of one kind or another during the inquiry process (Rose 2014). Those used in a participatory fashion, such as photography and mapping, appear to have been especially fruitful in the studies reviewed. As McGrath and Reavey (2015, p117) state, the visual 'can help participants to articulate aspects of experience which are hard to put into words'. This is an obvious benefit when engaging with individuals experiencing or recovering from psychosis. Furthermore, the process may itself hold therapeutic value, as implied by a participant reflecting on his experience of participant mapping. 'That was fun. It was cool telling you all the places that I go during the day. I've never thought about it like that' (Townley et al 2009, p9).

Limitations

All but one (Kamal and Gupta 1988) of the studies were conducted in high-income countries. This geographical concentration of research has obvious

limitations, especially given the apparent importance of local context. It is possible that by limiting our search to health databases, we overlooked some important and relevant studies within the sub-field of 'mental health geography'. Finally, our early decision to restrict the review to studies published in peer-reviewed journals meant that autobiographical service user accounts were mostly overlooked.

Implications for practice

Drawing on the findings of this and other reviews that relate to the risks and resources of urban settings, practitioners may consider (re)assessing the lived geographies of service users in their care. Engaging service users in conversations about place could help practitioners develop an understanding of the ways in which individuals currently relate to and traverse urban space.

The assessment tool proposed by Baumann et al (2022, p7) acts as a useful guide to frame these discussions, which might be better held outside the sterile and spatially disembodied clinic room. Indeed, some of the participatory research methods utilised in the studies reviewed here such as sketch mapping and neighbourhood walks could be adapted to support this assessment task.

Zooming out to the city / district scale, clinical departments could develop a sense of how urban stressors and resources appear locally by conducting a rudimentary survey informed by the following questions:

- Which parts of the operational area are urban / suburban / rural?
- What is the tenure mix and demographic composition of the various neighbourhoods? e.g. proportion of private rented accommodation or single person households, levels of ethnic diversity.
- Which areas are densely populated or built-up?
- Which districts or streets are especially noisy or visually stimulating?
- What do local statistics tell us about deprivation and inequality in the area?
- Where do the service users typically live? Are they located in clusters or distributed evenly across the area?
- Which publicly accessible spaces or facilities offer the potential for restoration or social connection?

This exercise could be conducted in a small group using coloured pens and a large base map. Local area statistics are available online to support this task. The resulting map could then be utilised to inform and support recovery-focused practice.

Future Research

We can progress our knowledge and understanding of how and when individuals experience discomfort, distress or benefit from urban environments and encounters by involving service users in further experience-based research. Although delicate territory, a carefully constructed narrative approach could shed further light on the aetiology of psychosis in urban settings. Given the apparent importance of local context to the development, perpetuation and mitigation of psychosis, future research would also benefit from a closer examination of the specific urban area in which the research takes place. Participatory research methods should be used where possible in order to provide depth to the research process and engage service users in collaborative assessment.

Conclusion

The participatory research identified by this review, although limited, offers a different perspective on the urbanicity literature. By assembling studies airing or at least engaging the service user voice, the review sketches a picture of how individuals living with or recovering from psychosis engage with places and spaces in order to cope or thrive.

We should not lose sight of the fact that the city holds the potential to support recovery. As Hester Parr (2008) notes, individuals living with mental health difficulties are active in shaping their own recoveries through a

multiplicity of spaces. It is perhaps the job of mental health services to augment clinical practice to support them in this endeavour.

References

Abrahamyan Empson L, Baumann PS, Söderström O et al (2020) Urbanicity: The need for new avenues to explore the link between urban living and psychosis. Early Intervention in Psychiatry. 14, 4, 398-409. doi: 10.1111/eip.12861.

Angermeyer MC, Beck M, Dietrich S et al (2004) The Stigma of Mental Illness: Patients' Anticipations and Experiences. International Journal of Social Psychiatry. 50, 2, 153-162. doi: 10.1177/0020764004043115.

Arksey H, O'Malley L (2005) Scoping studies: towards a methodological framework. International journal of social research methodology. 8, 1, 19-32. doi: 10.1080/1364557032000119616.

Baumann PS, Söderström O, Abrahamyan Empson L et al (2022) Mapping personal geographies in psychosis: from space to place. Schizophrenia Bulletin Open. 3, 1, 1-11. doi: 10.1093/schizbullopen/sgab051.

Conus P, Abrahamyan Empson L, Codeluppi Z et al (2019) City Avoidance in the Early Phase of Psychosis: A Neglected Domain of Assessment and a Potential Target for Recovery Strategies. Frontiers in Psychiatry. 10, 342, 1-6. doi: 10.3389/fpsyt.2019.00342.

Duff C (2012) Exploring the role of 'enabling places' in promoting recovery from mental illness: A qualitative test of a relational model. Health & Place. 18, 6, 1388-1395. doi: 10.1016/j.healthplace.2012.07.003.

Freeman D, Emsley R, Dunn G et al (2015) The stress of the street for patients with persecutory delusions: a test of the symptomatic and psychological effects of going outside into a busy urban area. Schizophrenia Bulletin. 41, 4, 971-979. doi: 10.1093/schbul/sbu173.

Freeman D, Taylor KM, Molodynski A et al (2019) Treatable clinical intervention targets for patients with schizophrenia. Schizophrenia Research. 211, 44-50. doi: 10.1016/j.schres.2019.07.016.

Frissen A, Lieverse R, Drukker M et al (2014) Evidence that childhood urban environment is associated with blunted stress reactivity across groups of patients with psychosis, relatives of patients and controls. Social Psychiatry and Psychiatric Epidemiology. 49, 10, 1579-1587. doi: 10.1007/s00127-014-0859-3.

Henson P, Pearson JF, Keshavan M et al (2020) Impact of dynamic greenspace exposure on symptomatology in individuals with schizophrenia. Plos One. 15, 9, 1-9. doi: 10.1016/j.healthplace.2008.08.011.

Jongsma HE, Gayer-Anderson C, Lasalvia A et al (2018) Treated Incidence of Psychotic Disorders in the Multinational EU-GEI study. JAMA Psychiatry. 75, 1, 36-46. doi: 10.1001/jamapsychiatry.2017.3554.

Kamal P, Gupta ID (1988). Feeling of Crowding and Psychiatric Disorders. Indian Journal of Psychiatry. 30, 1, 85-89.

Kirkbride JB, Fearon P, Morgan C et al (2007) Neighbourhood variation in the incidence of psychotic disorders in Southeast London. Social Psychiatry and Psychiatric Epidemiology. 42, 6, 438-445. doi: 10.1007/s00127-007-0193-0.

Kogstad RE, Ekeland TJ, Hummelvoll JK (2011) In defence of a humanistic approach to mental health care: recovery processes investigated with the help of clients' narratives on turning points and processes of gradual change. Journal of Psychiatric and Mental Health Nursing. 18, 6, 479-486. doi: 10.1111/j.1365-2850.2011.01695.x

Ku BS, Pauselli L, Manseau M et al (2020) Neighborhood-level predictors of age at onset and duration of untreated psychosis in first-episode psychotic disorders. Schizophrenia Research. 218, 247-254. Doi: 10.1016/j.schres.2019.12.036.

Leamy M, Bird V, Le Boutillier C et al (2011) Conceptual framework for personal recovery in mental health: systematic review and narrative synthesis. The British Journal of Psychiatry. 199, 6, 445-452. doi: 10.1192/bjp.bp.110.083733.

Marcelis M, Takei N, van Os J (1999) Urbanization and risk for schizophrenia: does the effect operate before or around the time of illness onset? Psychological Medicine. 29, 5, 1197-1203. doi: 10.1017/S0033291799008983.

March D, Hatch SL, Morgan C et al (2008) Psychosis and Place. Epidemiologic Reviews. 30, 1, 84-100. doi: 10.1093/epirev/mxn006.

McGrath L, Reavey P (2015) Seeking fluid possibility and solid ground: Space and movement in mental health service users' experiences of 'crisis'. Social Science & Medicine. 128, 115-125. doi: 10.1016/j.socscimed.2015.01.017.

National Institute for Health and Care Excellence (2014) Psychosis and schizophrenia in adults: prevention and management. Clinical guideline No. 178. NICE, London.

Neil ST, Kilbride M, Pitt L et al (2009) The questionnaire about the process of recovery (QPR): a measurement tool developed in collaboration with service users. Psychosis. 1, 2, 145-155. doi: 10.1080/17522430902913450.

NHS England (2019) The Community Mental Health Framework for Adults and Older Adults. NHS England.

Ödegaard Ö (1932) Emigration and insanity. Acta Psychiatrica Scandinavica. 7, s4, 1-206.

Parr H (2008) Mental health and social space: Towards inclusionary geographies? Blackwell Publishing, Oxford.

Pedersen CB, Mortensen PB (2001) Evidence of a dose-response relationship between urbanicity during upbringing and schizophrenia risk. Archives of General Psychiatry. 58, 11, 1039-1046. doi: 10.1001/archpsyc.58.11.1039.

Public Health England (2016) Psychosis Data Report: Describing variation in numbers of people with psychosis and their access to care in England. PHE, London.

Rose G (2014) On the relation between 'visual research methods' and contemporary visual culture. The Sociological Review. 62, 1, 24-46. doi: 10.1111/1467-954X.12109

Simmel G (2012) The metropolis and mental life. In Lin J, Mele C (Eds) The urban sociology reader. Second edition. Routledge, Abingdon, 37-45.

Söderström O, Abrahamyan Empson L, Codeluppi Z et al (2016) Unpacking 'the City': An experience-based approach to the role of urban living in psychosis. Health & Place. 42, 104-110. doi: 10.1016/j.healthplace.2016.09.002.

Söderström O, Söderström D, Codeluppi Z et al (2017). Emplacing recovery: how persons diagnosed with psychosis handle stress in cities. Psychosis. 9, 4, 322-329. doi: 10.1080/17522439.2017.1344296.

Townley G, Kloos B, Wright, PA (2009) Understanding the experience of place: Expanding methods to conceptualize and measure community integration of persons with serious mental illness. Health & Place. 15, 2, 520-531. doi: 10.1016/j.healthplace.2008.08.011.

Tricco AC, Lillie E, Zarin W et al (2018) PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Annals of Internal Medicine. 169, 7, 467-473. doi: 10.7326/M18-0850.

Ünal B, Akgül, Ö, Binbay T et al (2019) Association of wider social environment with relapse in Schizophrenia: Registry based six-year follow-up study. Archives of Neuropsychiatry. 56, 4, 235-242. doi: 10.29399/npa.23619.

Vassos E, Pedersen CB, Murray RM et al (2012) Meta-analysis of the association of urbanicity with schizophrenia. Schizophrenia Bulletin. 38, 6, 1118-1123. doi: 10.1093/schbul/sbs096.

Vaughn LM, Jacquez F (2020) Participatory Research Methods – Choice Points in the Research Process. Journal of Participatory Research Methods. 1, 1, 1-13. doi: 10.35844/001c.13244 .

Vlahov D, Galea S (2002) Urbanization, urbanicity, and health. Journal of Urban Health. 79, 1, S1-S12. doi: 10.1093/jurban/79.suppl_1.S1.