

ORIGINAL ARTICLE

International Journal on Homelessness, 2026, (online first): page 1-26.

Using GPS Tracking To Reveal Policy Gaps in Homelessness Support in London

Melissa Reshma Jogie 1* | Zulfikar Putra 2 |

1 University of Roehampton, Roehampton, London, United Kingdom. 2 Universitas Gadjah Mada, Indonesia

*Corresponding Author: Melissa Jogie, Email: contact@melissajogie.com

All content published in IJOH is licensed under a Creative Commons Attribution-Non-Commercial-Share Alike 4.0 International license (CC BY-NC-SA 4.0).

Received: 2 Mar 2026

Accepted: 3 June 2026

Abstract

Understanding how people experiencing homelessness navigate urban space remains methodologically challenging, with most research relying on retrospective accounts that may obscure the spatial and temporal dynamics of daily survival. This study advances homelessness research by integrating longitudinal Global Positioning System (GPS) tracking, Geographic Information System (GIS) heat-mapping, and trajectory-based walking interviews to generate fine-grained, real-time spatial data on mobility, safety, and service access. Conducted in partnership with a local homelessness charity in outer London, the research tracked nine participants across three seasons over a three-month period. Findings reveal how mobility patterns reflect spatialised vulnerability, fragmented healthcare access, exposure to hostile urban infrastructure, and the tactical use of green and public spaces for survival and respite. By combining spatial analytics with narrative interpretation, the study demonstrates how static policy frameworks fail to capture the lived realities of mobile precarity. Methodologically, the paper contributes a replicable, ethically grounded model for integrating participatory GPS research into homelessness scholarship. Substantively, it provides new empirical insight into the spatial production of homelessness and the structural barriers embedded within urban support systems.

Keywords

Homelessness, spatial justice, GPS tracking, Geographic Information Systems, policy barriers, support services

Introduction

How do the daily movements and space usage of individuals experiencing homelessness inform policy changes to improve safety, accessibility, and support services? Exploring their movements, where they find shelter, what areas they avoid, and how they gauge safety reveals key insights into their survival strategies and access to vital services. However, understanding of this issue remains heavily reliant on the oral narratives which are captured largely through ethnographic and qualitative research, where researchers depend on participants' recollections of the lived experiences of those who have endured street homelessness. Pioneering ethnographic work such as *'The Culture of Homelessness'* (Ravenhill, 2016) has laid the foundations for capturing lived experiences over time. Other studies in the United Kingdom (UK) have focused extensively on homelessness in relation to housing and welfare (Anderson, 2004), safeguarding of individuals with complex and dynamic needs (Martineau & Manthorpe, 2020), with increasing attention also being directed toward healthcare (McNeill et al., 2022). However, one limitation of data collection, particularly when informing policy responses for vulnerable groups, is that research designs often rely heavily on participants to narrate and report their lived experiences with service providers. As a result, individuals may omit aspects of their experiences due to poor memory or sequencing of events, trauma associated with recall, or embarrassment about sharing the daily realities of survival.

The British Academy awarded an Innovation Fellowship (Jogie, 2023) in partnership with Sutton Night Homeless Charity (SNW)¹, where a study was undertaken to closely engage with users of the charity who had experienced or were in transient states of street homelessness. The research design used Geographic Information System (GIS software) and GPS mobility trackers to capture their lived experiences through mobility patterns. This data helped us ask more insightful questions about (i) their assessment of safety in public spaces, (ii) what is perceived as comforting or threatening, and (iii) the challenges of being able to access support from public and charity service providers. This research is the first of its kind to be conducted in the UK and in this paper, we share how our partnership with SNW ensured a safe and ethical research design, alongside the top three findings, which offers new insights for charities such as SNW and policymakers to better serve the needs of this vulnerable group.

Existing studies have generally been limited to short-term data collection because of the complexities involved in managing participants, with most datasets spanning only one day to several weeks and being restricted to a single seasonal period, typically autumn or winter (Ilyas et al., 2023; Semborski et al., 2022; Šimon et al., 2020). Research examining homeless mobility through GPS methodologies has largely relied on short recording intervals (e.g., one minute), followed by data aggregation to support analytical manageability. However, such approaches inadvertently concealed finer-scale

¹ Sutton Night Watch Homeless Charity was established in 2017. SNW functions as a day charity and provides meals, laundry services, counselling, programmes for drug and alcohol recovery and support. Over the last 7 years they have assisted over 160 registered and on-going clients. They assist with housing applications and referrals and are a friendly face in the community for those rough sleeping, experiencing transient states of homelessness

movement and rest dynamics, highlighting an important methodological gap within the field (Šimon et al., 2019).

There remains a notable absence of this kind of research within the UK context, particularly in Greater London, where homelessness rates are both concentrated and increasing. Although some previous studies have combined GPS data with interviews, these approaches have typically remained conventional in design and have lacked trajectory-based inquiry that directly engages with spatial movement and lived mobility experiences. Furthermore, collaboration with local homelessness organisations has often been limited, reducing opportunities for co-produced research that meaningfully benefits both participants and service providers.

This study addresses these gaps through a longitudinal, seasonally inclusive design, combining GPS tracking over a three-month period with innovative walking and virtual trajectory-based interviews. The research was also conducted in close collaboration with SNW charity, supporting both ethical co-design and practical relevance for local homelessness services.

Homelessness in the UK is a significant challenge, as the experiences of those affected by a transient living situations that may be considered 'homelessness' can often be hidden from reported statistics. For the purposes of this research, 'homelessness' is considered any state of transience where a person does not have a registered postal address against their name or a legal registered place of dwelling. Whereas 'rough sleeping' is a type of homelessness where a person sleeps in makeshift accommodation or places that are not meant for human occupancy. Rough sleeping in England has more than doubled over the past decade, with nearly 3,900 individuals estimated to be sleeping rough nationally in 2023 and almost 12,000 recorded in London across 2023–24 (Greater London Authority, 2024). While borough-level counts vary considerably, even areas with comparatively lower recorded numbers, such as Sutton, experience persistent forms of visible and hidden homelessness. These figures underscore the need for more precise methods to understand how homelessness is spatially experienced.

Homelessness and Its Geographical Footprints

While considerable research has explored homelessness policy and intervention challenges, there remains a notable gap in the literature regarding how individuals experiencing homelessness themselves interpret and navigate these barriers. Current legislation, such as the Homelessness Reduction Act 2017, mandates that local authorities provide support to individuals at risk of homelessness at least 56 days before they are likely to lose their accommodation. However, research highlights systemic inefficiencies in its implementation, including limited resources, inadequate inter-agency communication, and bureaucratic delays (McCormack et al., 2022; Reeson, 2024). Bureaucratic inefficiencies significantly contribute to delays in delivering essential services to those at risk of homelessness. Administrative backlogs and procedural hurdles often leave individuals waiting for support while struggling to meet basic living costs - an issue particularly acute for those with existing health conditions (Fountain & Howes, 2002). These delays, compounded by financial instability and shortages in suitable

temporary housing, place additional strain on local authorities (National Audit Office, 2024). As a result, many individuals are placed in unsuitable and overcrowded accommodations, such as shared B&Bs or social housing, often under undesirable conditions (Local Government Association, 2017).

For individuals experiencing street homelessness or transient housing, the ability to manage anxiety and engage in planning becomes not just a challenge, but a matter of survival. The constant uncertainty and absence of a stable environment create a psychological landscape where chronic stress is the norm, severely disrupting the capacity to form routines, make decisions, or envision a pathway of stability. The ongoing stress of securing basic needs like food and shelter can heighten feelings of anxiety and depression, as homelessness is often both a cause and consequence of poor mental health (Crisis UK, 2025). Research indicates that nearly half of those experiencing homelessness have been diagnosed with a mental health issue, with this figure rising to 80% among rough sleepers (Crisis UK, 2025). This persistent combination of mental duress and physical instability undermines not only immediate well-being but also the long-term ability to pursue personal growth, change behaviors, build relationships, or achieve independence.

Support services for individuals experiencing homelessness increasingly prioritise both wellbeing and housing as central pillars of intervention. A range of services, spanning mental health support and housing assistance, are designed to alleviate anxiety and promote stability. National Health Service (NHS) led initiatives, such as integrated community programs in Birmingham and Solihull, address complex mental health and social needs through cross-sector collaboration. Similarly, targeted interventions by the NHS Leicestershire Partnership offer structured mental health support for individuals aged 16 and over who are rough sleeping, sofa surfing, or living in hostels. Alongside statutory services, local charities like Sutton Night Watch (SNW) complement these efforts by offering therapeutic resources, including creative interventions like Kintsugi art therapy and on-site professional counselling. These services not only work to stabilise housing situations but also foster emotional wellbeing. Moreover, the cultivation of community ties and mutual support within homeless networks contributes to a sense of belonging and resilience, helping individuals cope with the psychological toll of homelessness (Mercado et al., 2021).

Despite the growing emphasis on wellbeing and housing within support services, there remains a critical gap in understanding the personal and often invisible challenges individuals face in accessing and engaging with these interventions. While the infrastructure for support may appear comprehensive on paper, many individuals experiencing homelessness encounter a web of practical and psychological deterrents that go largely unexamined. Official reports tend to focus on systemic or structural shortcomings, yet there is limited insight into the everyday realities, navigating complex referral pathways, meeting rigid eligibility criteria, or dealing with the stress of repeated assessments. Logistical barriers such as lack of transportation, limited digital access, or unstable phone connectivity can make consistent engagement with services nearly impossible. In addition, a deep-seated mistrust of institutions, often shaped by past

negative experiences, further hinders participation. Without a clearer understanding of these micro-level, person-centred obstacles, interventions risk being well-intentioned but inaccessible. Addressing this knowledge gap is essential for developing responsive, inclusive strategies and policies that meet individuals where they are, rather than where systems assume them to be.

While ethnographic research has offered valuable high-level insights into the structural challenges of homelessness (Rife & Burnes, 2020) and the lived experiences of specific populations, such as older adults (Grenier, 2022), there remains a scarcity of research that captures how individuals actively navigate systemic barriers in real time. This study addresses that gap by utilising GPS tracking as an approach to examine patterns of mobility among people experiencing homelessness. Unlike prior studies in this field, which rely primarily on retrospective accounts or static observations, this research foregrounds the dynamic, spatial dimensions of daily survival. By analysing micro-mobility patterns, temporal occupation of spaces, and interactions with local amenities, the study sheds light on the nuanced, moment-to-moment strategies individuals employ to manage logistical, bureaucratic, and psychological deterrents. This real-time, spatially grounded perspective offers a fresh contribution to the field, deepening our understanding of how systemic obstacles are experienced and negotiated on the ground with real-time gaps. The use of GPS technology that is integrated with a geographic information system (GIS) has been widely used in the social policy domain to expose the service location gap, crime hotspots, urban disparities, active living, social care proximity, and marginalised groups (Katapally et al., 2020; Ngongo et al., 2023; Sualp et al., 2025). The use of the technologies offers a shift towards fine-grained location-based evaluations, encouraging geographically informed evidence-based policymaking, providing behaviourally grounded spatial insights, and support more real-time, participatory policymaking (Queralt & Witte, 1998; Shannon, 2015; Yamashita et al., 2014; Yang, 2019).

Despite its proven potential, the use of GPS technology to study homelessness remains underutilised in both academic research and policy development. Existing studies have demonstrated that GPS tracking can uncover otherwise invisible patterns of mobility, offering critical insights into the daily routines, service interactions, and coping strategies of people experiencing homelessness (Šimon et al., 2020). Moreover, GPS data can serve as a proxy for broader indicators of wellbeing, including health status, exposure to unsafe environments, and potential substance use patterns (Ilyas et al., 2023). However, the integration of such data into policymaking has been limited, with some research suggesting a lack of political will or ethical clarity around its application (Semborski et al., 2022). Current policies often overlook the spatial and temporal dynamics of homelessness, focusing instead on static solutions that fail to reflect the lived realities of mobile, precarious lives.

This study addresses that gap by using GPS tracking and GIS mapping to explore barriers across four key policy domains: timely access to support, housing stability, health and safety, and local service interventions. Through this framework, the research aims to identify policy blind spots and generate actionable, person-centred

recommendations that align services more closely with the spatial realities of those they intend to support, while also critically acknowledging the dual potential of GPS data for both benevolent and exclusionary interventions. While some of these findings are well-established issues encountered with people rough sleeping or experiencing homelessness, the methods employed in this research help to inform services (like SNW charity) about a clearer rationale for why some routes are frequented or avoided, where suitable locations for respite provision and future investment may exist for potential partnerships with other service-providing organisations that might be unknown to them.

Methodology

This study builds on and advances previous GPS-based research on homelessness by addressing critical methodological and contextual limitations highlighted in the above literature (Ilyas et al., 2023; Semborski et al., 2022; Šimon et al., 2020; Šimon et al., 2019). It employed two primary methods: (i) GPS tracking of individuals with lived experience of homelessness or those in transient living situations, using SNW as a central hub for movement and participant engagement; and (ii) three rounds of walking interviews with each participant, focusing on specific areas identified from their GPS data. Interview discussions were guided by themes of daily safety and survival. Due to the sensitive and logistically complex nature of the research, the study was designed to track up to 10 participants over a three-month period, with data collection taking place throughout a full year. Between August 2023 and January 2024, the project achieved a 90% participation rate, involving nine participants (eight male, one female) across three seasons: summer, autumn, and winter.

The participant selection process was deliberately developed in partnership with SNW charity as part of a collaborative and practice-informed research design. Drawing on the charity's frontline knowledge and established relationships with the local homeless community, recruitment strategies were shaped to prioritise ethical engagement, participant wellbeing, and inclusivity across different experiences of homelessness. This approach enabled the study to move beyond purely researcher-led sampling and fostered a more grounded understanding of participants' everyday spatial and social realities.

Safe participant recruitment would not have been possible without the support of SNW charity. Given the experimental nature of the study and the novelty of the methods employed, the research team acknowledged the potential for recruitment bias and valued the willingness of participants to engage through SNW. Recruitment was initially slow, but trust in the study increased as early participant experiences were shared within the community.

Participants were reassured that GPS data were not live tracked and would not be shared with government, policing, or homelessness agencies, including SNW charity. To further support participant wellbeing and maintain appropriate boundaries, a Research Assistant acted as the primary point of contact and intermediary throughout the study. Recruitment remained open across the data collection period, with participants onboarded on a rolling basis.

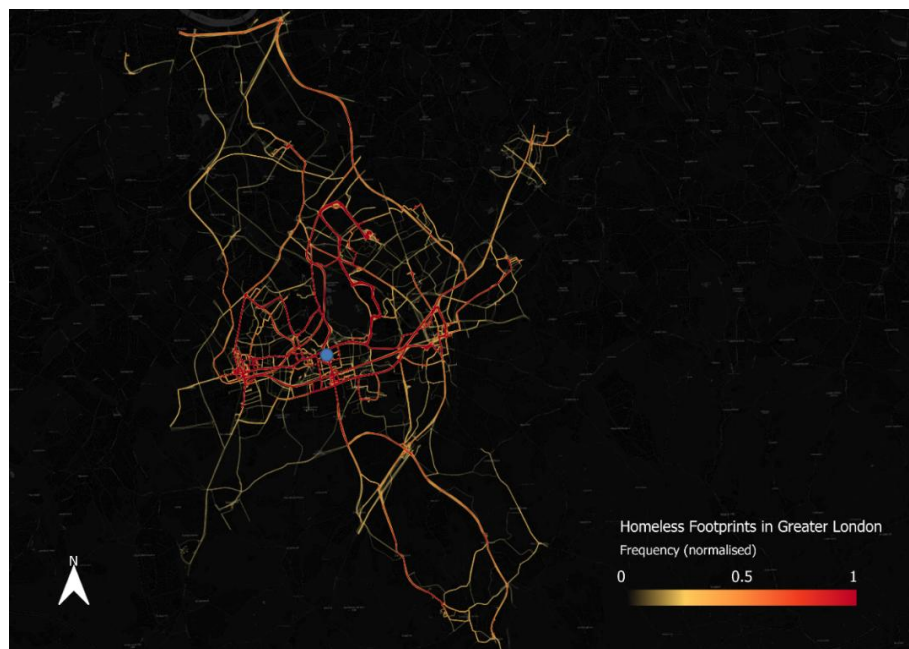
To support engagement and ensure regular contact, participants received a £10 weekly honorarium and were asked to return to SNW for wellbeing check-ins and GPS device charging or replacement. The selection, recruitment, and management of participants were carried out in close collaboration with SNW to ensure safe onboarding and continuous support for participant wellbeing.

(i) GPS Tracking

This study employed GPS tracking as a central methodological tool to capture fine-grained movement data from participants experiencing homelessness. A device known as Track-i² was used for this purpose due to its practical suitability: it is small, lightweight, waterproof, and durable, with full UK-wide coverage³. The device recorded participants' location, time, speed, and movement status every 30 seconds, providing a detailed and continuous record of daily activities. Participants were asked to carry the device with them throughout their daily routines. GPS data was retrieved weekly via the Track-i dashboard, covering a full seven-day period from Monday to Sunday. The data was compiled into a single CSV file and enriched with additional information, such as participant ID and calculated stop durations, before being processed in QGIS software and converted into spatial formats for analysis.

Figure 1.

Summary Heat Map Capturing Project Scope



The spatial data was cleaned and organised into two formats: “Point” and “Polyline” (see Figure 1). Point data was used to identify and categorise rest locations based on duration: Short rests (20-119 minutes) and Extended rests (over 120 minutes). Polyline

² Further information about the device, please see <https://gb-tracki.glopalstore.com/>

³ The GPS trackers were commissioned as a bespoke design by Thunderbolt Technologies Ltd

data was used to represent patterns of movement over time, helping to detect where and when participants were most active. Movement periods were grouped into four-time bands: Morning (06:00–11:59), Afternoon (12:00–17:59), Evening (18:00–23:59), and Night (00:00–05:59). These data were used to generate heatmaps⁴, both aggregated and participant-specific, to identify frequently visited or accessed areas during the day and night. The heatmap shows a value between 0 – 1. The higher the intensity, the closer its value to 1, and vice versa. This provided valuable insight into mobility patterns and spatial behaviours across different times of day and environmental conditions.

The GPS data were cleaned to remove errors and outliers and then analysed in two ways. First, data points were categorised into the two stop-duration types, excluding those under 20 minutes and more than 20 hours. Second, the points were converted into polylines by sequentially linking locations based on timestamp, which were then used to generate a heatmap using the “line density” tool in QGIS. This tool calculated line thickness and intensity within a 20-metre search radius, chosen to reflect typical road width, producing high-resolution raster data (GeoTIFF) with a 1 mm pixel size. The resulting heatmap (Figure 2) was clipped, as a general summary, to focus only on areas with concentrated activity, excluding locations visited infrequently. It was then integrated with point-of-interest (PoI) and road network data from Open Street Map (Geofabrik, 2024)⁵ to support more meaningful interpretation of participant movement patterns.

Figure 2.

An Example Case of Healthcare System Barriers

⁴ In this research, heatmap refers to the visualisation of the movement intensity of the participants based on the geographical data, which is represented as a map.

⁵ <https://download.geofabrik.de/europe/great-britain.html>



(ii) Walking Interviews

To complement the GPS tracking data, walking interviews were conducted with each participant once a month over the three-month data collection period, resulting in three interviews per participant. These were semi-structured in format, with core questions informed by each participant's recent movement patterns as recorded by the GPS device. Additional questions were tailored to the individual's experiences of daily safety, navigation, and survival strategies. Most walking interviews took place around SNW charity in Wallington Town, a familiar area for participants. Audio was recorded using a discreet upper-arm device worn by the interviewer, while the route was simultaneously tracked using a GPS app on the interviewer's phone. For participants unable to complete in-person walks (due to health or mobility issues), virtual walking interviews were conducted using Google Earth and Google Street View, allowing both participant and researcher to reflect on specific streets or locations discussed during the interview.

Participants were recruited in collaboration with SNW, based on their regular engagement with the charity, willingness to participate, and ability to commit to the three-month study. Health and wellbeing were also considered to ensure safe participation. Due to the nature of the study, the recruitment process was staggered as it took some participants time to consent. The first wave of six participants began in July and August 2023, and the second wave of three participants joined in October 2023. Each participant was involved for approximately 12 weeks, with data collection concluding in January 2024. In total, 19 walking interviews were completed over the course of the study. This phased approach ensured sustained engagement and allowed for seasonal variation in the data.

All walking interview transcripts were analysed thematically using NVivo software. Statements were coded to identify recurring themes and insights related to the research objectives. These qualitative findings served two key purposes: first, to enhance the interpretation of GPS tracking data by providing contextual narratives around specific locations and patterns of movement; and second, to uncover experiences and barriers that were not visible through spatial analysis alone. By integrating these methods, the study was able to generate a richer, more holistic understanding of how individuals experiencing homelessness navigate their environments and interact with available services.

Ethical Considerations⁶

Ethical considerations were central to the design and implementation of this research, particularly in ensuring that informed consent was meaningful, sustained, and grounded in a partnership model with participants as equitable collaborators. Recognising past critiques of extractive research practices (Hibbert, 2025), we engaged participants not merely as subjects but as community-led partners from the outset. In collaboration with SNW and a participant advisory group, we co-developed all study materials, including an accessible infographic that clearly communicated key information about research aims, procedures, and potential risks in plain language. Participants reviewed draft versions of the infographic, provided feedback on phrasing and illustrations, and endorsed the final design, reinforcing their role in shaping how information was conveyed and ensuring respect for their perspectives.

Participant selection criteria, established jointly with SNW and community representatives, emphasised stability of mental and emotional wellbeing while also prioritising diversity across age, gender, and lived experience. Weekly check-ins during battery pack exchanges functioned as more than a consent reaffirmation; they served as participatory research moments. During these sessions, participants shaped emerging questions, reflected on initial findings, and co-interpreted their experiences, ensuring that data collection and analysis remained transparent and accountable. This iterative, dialogic approach to consent and engagement recognised the fluid nature of participants' circumstances and upheld their ongoing autonomy, dignity, and safety.

Given the human rights implications of location tracking, we implemented multiple safeguards to respect privacy and mitigate risks of surveillance or coercion. Devices were custom-built to be waterproof, lightweight, and discreet within clothing, minimising attention and potential victimisation. Crucially, GPS data were stored locally and encrypted, with a 24-hour delay before research-team access; live tracking was never deployed. Upon data retrieval, participants had the option to review their own movement records before the senior researcher accessed them. During feedback sessions, we shared findings with participants in a collaborative manner; participants could annotate, contextualise, or redact any segments they felt sensitive, ensuring data interpretation honoured their rights and experiences.

⁶ This research project received ethical approval from the University of Roehampton's Research and Ethics Integrity Committee (reference EDU 23/243).

To acknowledge the valuable time and expertise participants contributed, we provided a weekly £10 honorarium. This rate was determined in consultation with SNW and the advisory group, benchmarking against local living-wage guidelines and participant preferences. The honorarium was framed not as compensation for their vulnerability but as recognition of their co-ownership of the research process. It was administered transparently, with participants invited to discuss budget allocations, decide on community reinvestment options, or recommend alternative forms of acknowledgement.

Finally, reflexivity and positionality were integral throughout the project. The research team comprised a BA Innovation Fellow (Jogie) and a research assistant (Putra) both of whom engaged in reflexive journaling and peer debriefing to interrogate their biases and power dynamics. Only the research assistant maintained direct contact with participants to promote continuity and trust, while Jogie focused on design, analysis, and ethical oversight. Regular debriefs with SNW and the advisory group scrutinised researcher decisions, ensuring accountability. By embedding collaboration, transparency, and human rights principles at every stage, from consent to dissemination, we sought to transform what might be extractive into a genuinely participatory and empowering research endeavour.

Findings and Discussion

The demographic table of the pseudonymised participants (see Table 1) can be used to help contextualise some of their narratives explored below.

Table 1.

Pseudonymised Participant Demographic Data

Name	Age	Years Homeless	Nationality	Unique Characteristics
Jose	50-55	>10	British (white)	Known for helping others in the homeless community; waiting for housing for more than 3 years, got temporary accommodation, but then forced to leave it after 3 months due to conflicts with neighbour; bitten by a wolf spider causing health issues; have alcohol addiction issue; depends on Fran (a participant in this study).
Ronan	50-55	>5	Irish	Former construction worker; became homeless after partner's death; enjoys cycling and nature; recovering from drug addiction; have liver diseases issue recently; dedicate himself to voluntary activities.
Orlando	50-55	>10	British (white)	Prefers solitude in parks or cemeteries; recovering heroin addict; stabbed previously over drugs; build local social networks with other homeless; sometimes begging nearby grocery store.

Fran	50-55	>5	British (white)	Lives in a garage; dependent on Jose (a participant in this study) for emotional support; suffers from anxiety and health issues.
Miles	40-45	<1	Foreign national (NA)	Struggles with immigration status and family issue (need to send money to his ex-partner and child due to court order); ever been jailed due to violent; lives in temporary locations; experiences mental health challenges.
Bruno	60-65	<5	Foreign national (Mauritius)	Avoids Croydon due to safety concerns even though his accommodation is in there due to other homeless who threaten and bother him near his accommodation; sleep in a space under stair of his cousin but forced to leave the house during the day; still have family in Mauritius; frequents Wallington and Sutton; lives in fear of a specific individual.
Mike	20-25	<5	British	Unemployed; Cannot pay rent; Doesn't seem to engage with a job; Live in a tent at a park; Attach to Wallington area as this is his childhood area and doesn't want to live outside this area; always depend on other people when try something for the first time.
Philip	25-30	<5	British (Black)	Domestic issue; Separated with his partner and child, hence need to leave the house; had a car but then sold it for money; often go to his mother's house to watch TV and clean himself, but not to stay or sleep.
Chris	50-55	>5	British (White)	Rough sleeping with history of heroin addition issues. Known to SNW but has a tendency to dip in and out of service usage depending on frequency and intensity of substance abuse activities.

Figures 3 and 4 (below) are superimposed GPS maps with photo-mappings to capture the places and images frequented around SNW Charity (Figure 3) and the wider Sutton Borough region (Figure 4). The associated A and B codes on the images are reference points in the analysis for cross-referencing.

Figure 3.

Photo Map of Places around SNW Charity

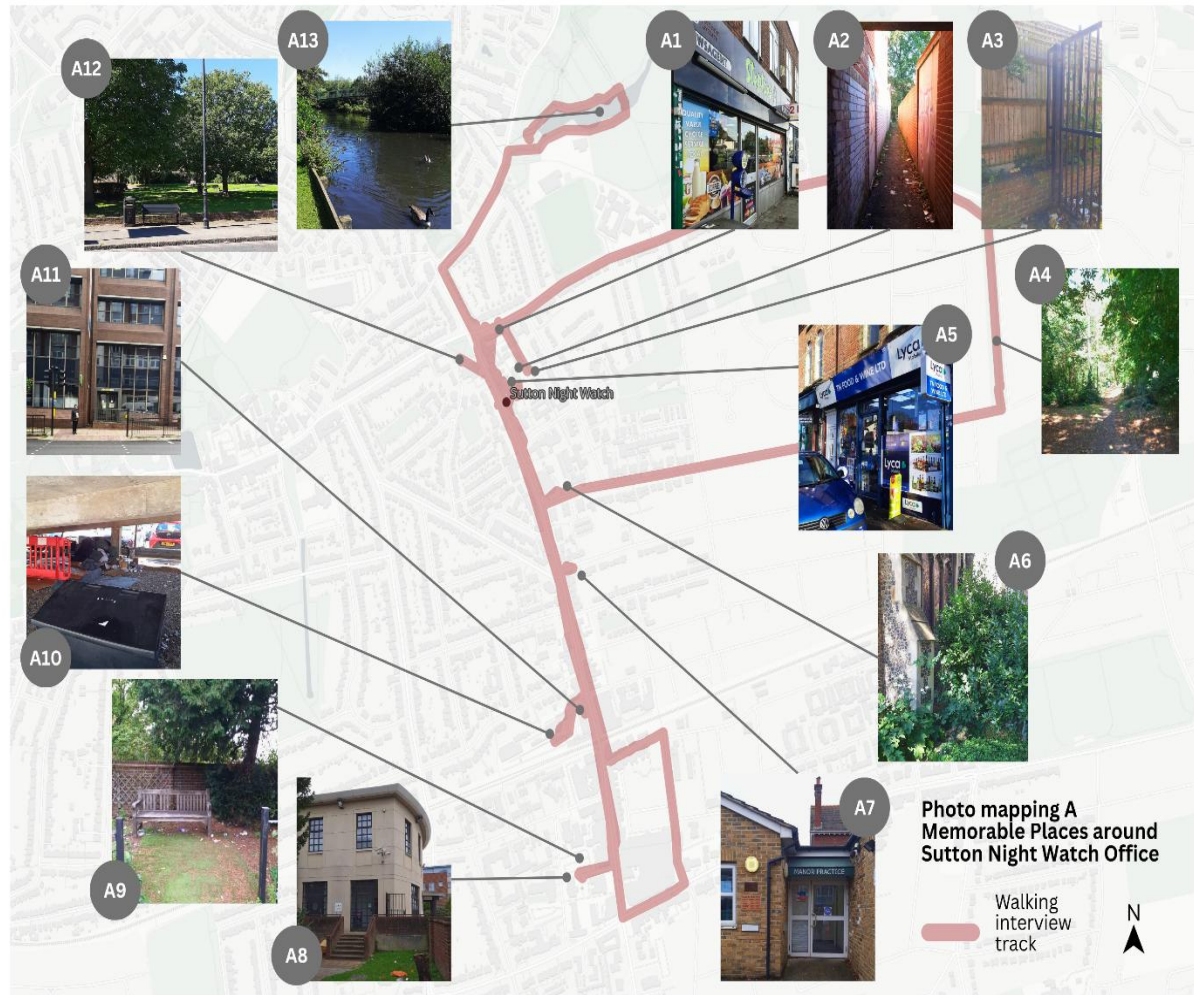


Figure 4.
Photo Map of Places around Sutton Borough, London



Safety, Security and Vulnerability:

Homeless individuals face persistent threats to their safety, strongly affecting both physical and mental wellbeing. Many participants described constant fear of violence, theft, and harassment, particularly at night. Bruno avoided Croydon due to aggression, Orlando hid in cemeteries or wooded areas, and Ronan swam through icy water to reach an islet for safety, prioritising security over comfort. These extreme strategies reveal the precariousness of rough sleeping and the urgent need for safer alternatives. Studies confirm that sleep is considered particularly risky for rough sleepers, where falling asleep means an increased vulnerability of being attacked or robbed by strangers (Edmed et al., 2025). Crisis UK (2016) found that rough sleepers are 17 times more likely to have been victims of violence and 15 times more likely to be verbally abused.

Interactions with the police frequently deepened feelings of displacement, with participants being moved on from sleeping spaces (A9, A10) without support or alternatives. Jose's request for guidance on safe places to sleep was met with no meaningful assistance, reinforcing feelings of dehumanisation. This reflects a broader systemic tendency in England and Wales, whereby legal powers have been used to punish the rough sleepers deemed a "*nuisance*", distancing them from the support they actually need (Crisis UK, 2024). Although it is shown that rough sleepers are more likely to be the victims of crime than perpetrators (Crisis UK, 2017), legal enforcement continues to be applied disproportionately against them rather than offered as support. This reflects

the criminalisation of a basic survival behaviour, pushing the problem out of sight instead of addressing the root causes, which is unique across each rough sleeper.

Sleeping locations were unpredictable and often in non-residential or unsafe areas (A4, A8, A9, A10, B4, B6, B8). Participants constantly moved between sites for protection. Miles sought secure corridors in buildings (A11, B4), Orlando remained hidden in bushes (A6), and Ronan avoided alleyways linked to drug activity (A2). This ongoing state of vigilance highlights the need for stable, designated, and safe sleeping infrastructure. Similar patterns have been identified elsewhere, where individuals choose their hidden locations, such as empty sheds or public toilets, to avoid possible violence, harassment, and sexual assault (Foreman, 2025).

Health and Wellbeing

Homelessness severely affected participants' physical and mental health. Chronic conditions—such as Jose's leg injury, Ronan's kidney issues, and Orlando's history of substance use—were compounded by poor sleep, exposure, and limited healthcare access. Most of the time, people experiencing homelessness are more likely to have experienced substance misuse, abuse, and family instability, which is aggravated by unequal healthcare access, leading to shorter life expectancies (Bell et al., 2024).

Heatmap analysis showed intense movement around Sutton, Wallington, and Mitcham Junction, closely aligned with clusters of off-licenses (A1, A5). These locations play a central role in daily routines and increase exposure to alcohol and tobacco. In contrast, green spaces (A4, A12, B5) were used for respite and substance consumption, creating a harmful cycle in spaces that otherwise offer relief. This dual role of urban infrastructure illustrates how environments can simultaneously support survival and undermine wellbeing (Baillergeau, 2014).

Mental health struggles were common, with episodes of anxiety, depression, and suicidal ideation. Fran's distress when separated from Jose and Miles' despair over his immigration status show how structural insecurity intensifies emotional harm (Jordan & Sage, 2024). These mental health problems are the outcomes of experiencing homelessness (Pinillo & Pinillo, 2021). There are high prevalence rates of depressive and anxiety disorders, substance use disorders, and physical health issues among people experiencing homelessness (Hossain et al., 2020). Participants attempting recovery, such as Ronan and Orlando, faced constant exposure to drug use, making recovery more difficult. These findings highlight the need for integrated policies that combine trauma-informed mental health care, addiction support, and stable housing to enable lasting wellbeing.

Community and Relationships

All participants strongly emphasised the importance of community and relationships as vital sources of emotional support and stability amid the ongoing challenges of homelessness. Informal networks often served as lifelines, providing both practical assistance and a sense of belonging. For instance, Jose actively supported others in the homeless community, fostering a sense of solidarity, while Fran relied heavily on Jose for

emotional security, describing him as her "*backbone*." Similarly, Bruno sought to avoid isolation by engaging with others in Wallington, and Ronan stayed with friends when possible to maintain connections. This supports existing research on homelessness resilience, where peer support networks function as crucial sources of emotional and practical assistance that may reinforce unhealthy behaviours among people experiencing homelessness (Ketel & Abdoli, 2024). It is proven that support networks among them become a buffer from the impact of stressful events, substance abuse recovery, and increase motivation for positive behavioural change (Green et al., 2013).

Figures 3 and 4 (above) show examples of how people experiencing homelessness use different types of public spaces. The churchyard and surrounding environment (B7, B8, B9), with its quiet and sheltered environment, provides a place for rest or reflection. The small public green space with benches (A12, B1), open space in city centre (B2), and shopping areas (B11) offer a more visible space for socialising during the day. The fenced playground, although intended for children, may serve as a quiet spot after hours. In contrast, the gated corner filled with litter (A3) shows how some are pushed into less maintained and more hidden areas. These images reflect how homeless individuals use available spaces - both welcoming and marginal to meet basic needs and maintain social connections in a city that often overlooks their presence.

An interesting observation was their commentary on the lack of private spaces for sexual intimacy and the fact that some housing arrangements (like Fran's) did not permit male visitors, so having her partner Jose around could result in her losing her home. Younger participants also commented on the lack of privacy for physical intimacy (self or with a partner), which meant the natural human touch or comfort of intimacy was almost unreachable when you have no personal space or privacy. Despite the friendship bonds that were shared, participants shared their experience of loneliness or that they chose to distance themselves from close relationships due to pride or past trauma. Ronan concealed his homelessness from his family out of pride and would not reveal where he spent his time, while Miles described estrangement from his relatives, feeling stigmatised and unsupported. This is a common situation in the UK, in which people experiencing homelessness withdraw from potential resources of support because of stigma associated with them and feeling of rejection and marginalisation, leading to compound feelings of loneliness and isolation (Lachaud et al., 2024; Rea, 2023). These dynamics reveal the complex interplay between the need for connection and the emotional risks associated with vulnerability.

For policymakers, these insights underscore the importance of fostering community-based interventions that strengthen social networks among homeless individuals. Peer-led programs show a range of forms of social support that mainstream services cannot readily replicate, especially because they share similar experiences and feelings as people experiencing homelessness (Barker & Maguire, 2017). Programs that provide safe spaces for connection – such as drop-in centers or peer-led support groups – can help mitigate the isolation and emotional strain often experienced by those living on the streets.

Systemic Barriers and Frustrations

Participants consistently highlighted systemic barriers that hindered their ability to achieve stability and rebuild their lives. Housing insecurity was a major concern, with long waits for accommodation or placement in unsafe environments being common experiences. For example, Jose spoke of the prolonged wait for housing, while Ronan described being placed in emergency housing in Mitcham, which he likened to "Beirut" due to its dangerous conditions involving violence and drug activity.

Immigration issues further compounded the challenges for some individuals. Miles's unresolved immigration status left him unable to access stable housing or employment, forcing him into prolonged homelessness. His situation exemplifies how bureaucratic delays and legal obstacles can trap individuals in cycles of instability. Unfortunately, this situation is also faced by many migrants experiencing homelessness in the UK, which these individuals are increasingly excluded from productive calendars of activity as they spend their time going from one government office to another to process and wait for the outcome of their status (Stewart & Sanders, 2024).

Additionally, participants were critical of the limited scope of support provided by councils and charities. While basic services such as food and hygiene facilities were appreciated, deeper needs, such as long-term housing solutions, legal assistance, or mental health care, were often unmet. Miles expressed frustration at the lack of comprehensive support, noting that charities primarily focused on immediate needs without addressing the structural issues keeping people homeless.

These accounts highlight the urgent need for policies that prioritise accessible housing options, streamline immigration processes for vulnerable individuals, and expand the scope of support services. Comprehensive interventions that address both immediate and systemic institutional challenges are essential to breaking the cycle of homelessness and fostering long-term stability (Dobson, 2019).

Of particular interest (refer to Figure 2) is an example of the systemic barriers experienced when accessing healthcare amenities, including hospitals, surgeries, pharmacies, and dentists, overlaid with a heatmap indicating the intensity of movement. The most concentrated routes, marked in red and orange, show frequent and repetitive travel, particularly in the areas between Sutton, Mitcham Junction, and Tooting Broadway.

Supporting the analysis of Fran's routines (see Figure 2), the map visually demonstrates how access to healthcare often involves extensive and high-intensity movement across multiple sites. Fran's path reflects a pattern of visiting different medical practices and hospitals rather than consistent, localised care. Despite the presence of healthcare amenities across the area, particularly near major hubs like Sutton, the disjointed pattern of travel suggests barriers such as lack of continuity in care, eligibility restrictions, or inaccessible services that force individuals to move frequently between providers.

Most people experiencing homelessness in the UK face key barriers to healthcare access, including denial of care, lack of continuity of care due to unstable accommodation, fragmented services, and discrimination (Gunner et al., 2019). Fragmented services

represent a key barrier, demonstrating the disconnection between the service providers and the preferred healthcare locations. This spatial representation underscores how the structure of the healthcare system can unintentionally create additional burdens for people experiencing homelessness. Instead of care being streamlined or geographically convenient, the system often requires high mobility and persistence from individuals who may already face physical and mental health challenges. For policy audiences, the map makes clear that the problem is not only about the availability of services but also about how fragmented access leads to inefficiencies and health inequalities.

Coping Mechanisms and Resilience

Despite the severe challenges of homelessness, participants demonstrated remarkable adaptability and resilience through various coping mechanisms. Many developed personal strategies to navigate risks and maintain a sense of safety. For example, Orlando sought refuge in cemeteries (B8), while Ronan found temporary shelter on a secluded island (A13). These choices reflect the tactical decisions homeless individuals make to avoid danger, harassment, or police surveillance in the absence of formal security or stable housing. This demonstrates considerable resilience among participants, especially chronically homeless individuals, where multidimensional and psychological resilience play crucial roles in their survival strategies (Cummings et al., 2022).

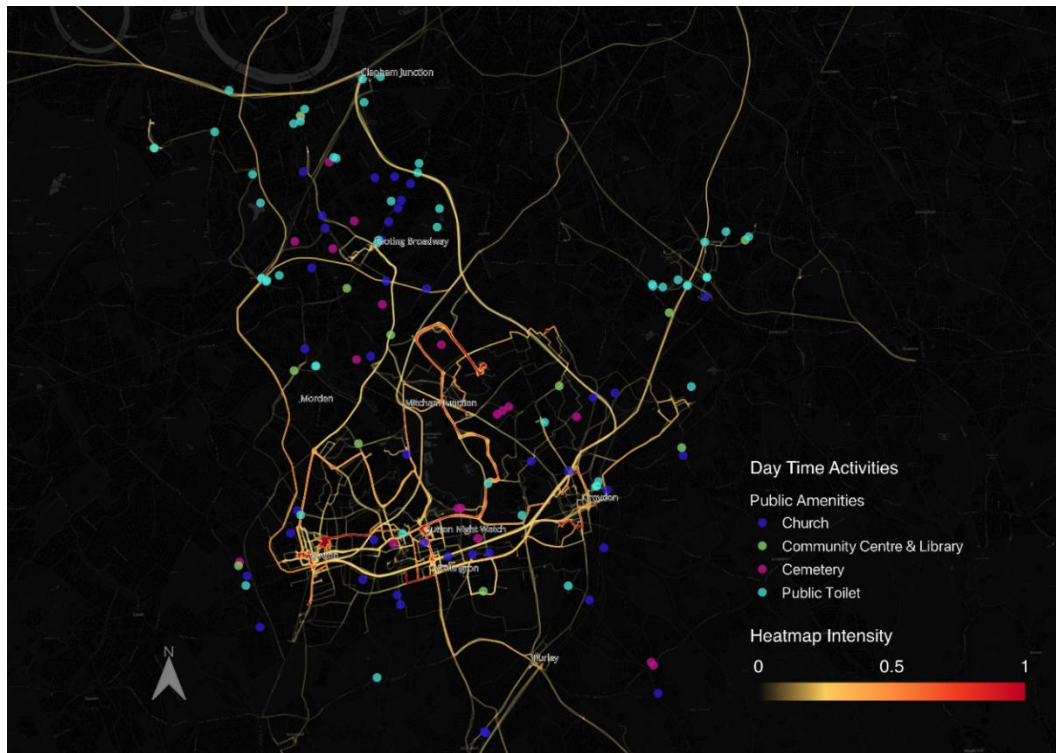
Figure 5 (below) highlights night-time activities and extended rest locations (12:00–05:59 AM) for participants, revealing a concentration of rest points along high roads, main thoroughfares marked in purple. These roads, which include primary, secondary, and tertiary routes, are typically areas with increased vehicle traffic, street lighting, and commercial activity, even during late-night hours. The clustering of rest locations along these corridors suggests limited alternatives for safer or quieter environments, forcing individuals to rest in exposed and often disruptive conditions.

The positioning of extended rest areas directly along busy streets indicates that rest is frequently compromised by environmental factors such as bright lighting and persistent noise. Streetlights, headlights, and passing traffic can interfere with sleep cycles, while the presence of pedestrians, delivery services, or late-night businesses can increase the risk of disturbance or confrontation.

This spatial pattern reflects not only a lack of accessible, sheltered rest spaces but also the ways in which urban infrastructure actively disrupts basic needs like rest and recovery. One striking finding was how far participants travelled in search of spaces for mental quiet away from light and noise to get some quality rest. For policy audiences, this data underlines the urgent need for protected, low-stimulus environments where people experiencing homelessness can sleep without the physical and psychological stress imposed by high-traffic urban settings.

Beyond practical strategies for survival, participants found solace in nature, which provided moments of peace and emotional grounding. Parks and green spaces were

Figure 5.
Day Activity Distribution of Participants



frequently mentioned as places of comfort. Ronan spoke of cycling to Box Hill for solitude and mental reprieve, while Orlando described sleeping in natural surroundings to escape the stress and unpredictability of urban areas. These connections to nature highlight the importance of accessible green spaces for mental well-being among homeless populations. It is supported by wider studies on green space and mental health, in which most studies suggest that green space has beneficial effects on mental health through the mitigation of harmful environmental aspects, restoration of depleted emotions, and psychological restoration (Beute et al., 2023).

Figure 6 (below) illustrates the use of public amenities by participants during daytime hours. The map shows that individuals frequently access facilities such as public toilets, libraries, community centres, churches, and cemeteries throughout the day. Libraries and civic centres (A11, B3, B4) are commonly used for accessing computers, reading, or staying indoors in a safe environment. Churches and cemeteries, in contrast, offer quieter and more secluded spaces where participants can find a sense of calm or solitude. They use unmonitored public toilets, such as in a library (A7, B3) and a GP surgery building (B10), to cope with sanitary needs. These locations serve as important daytime refuges, offering both practical resources and moments of respite within a demanding urban landscape.

Crucially, many participants also maintained a strong sense of hope despite their circumstances. Fran expressed her aspiration to live with Jose in a stable home, while Miles remained determined to rebuild his life beyond street homelessness. These expressions of hope underscore the human capacity for resilience even in the face of systemic barriers.

Figure 6.

Night Activity Distribution of Participants



For policymakers, these insights point to the need for interventions that address both immediate survival needs and long-term stability. Policies should prioritise safe sleeping arrangements, access to green spaces, and programs that foster hope and agency, such as pathways to housing, employment support, and mental health services, to empower individuals as they work toward rebuilding their lives.

These findings suggest that homelessness policy often operates on territorially fixed assumptions, while lived experience is characterised by continual movement across fragmented service landscapes. The spatial data illustrate how mobility becomes both a survival strategy and a symptom of systemic discontinuity. In this sense, GPS tracking functions not merely as a data collection tool but as an epistemic intervention, making visible forms of infrastructural strain and bureaucratic misalignment that remain obscured in conventional qualitative accounts. Recognising mobility as structurally produced rather than individually chosen reframes homelessness as a spatial governance challenge as much as a housing crisis.

Implications for Practice, Limitations and Future Research

The findings indicate the importance of incorporating spatial and mobility-sensitive approaches into homelessness research and service design. Rather than treating homelessness as a static housing status, the GPS and GIS data demonstrate that it is experienced as a highly mobile and spatially negotiated condition. Individuals must constantly navigate fragmented services, unsafe infrastructures, and shifting zones of access and exclusion.

First, the study suggests that spatial data can inform more strategically located and coordinated support services. Heatmap patterns revealed concentrated mobility corridors between healthcare sites, retail areas, and temporary rest locations. These patterns indicate that service accessibility is not simply a matter of availability, but of spatial coherence and continuity. Integrating spatial mapping into service planning may help identify areas where fragmented provision produces unnecessary mobility burdens for already vulnerable populations.

Second, the research demonstrates that healthcare access is frequently geographically dispersed and discontinuous. Participants often travelled repeatedly across borough boundaries to access different providers, reflecting systemic inefficiencies rather than individual choice. A mobility-aware framework for commissioning and service coordination may reduce these burdens by recognising how spatial fragmentation contributes to health inequality.

Third, the participatory use of GPS tracking, combined with trajectory-based interviews, offers a replicable methodological model for future research. By grounding spatial data in lived experience narratives, the study moves beyond extractive tracking practices and demonstrates how ethically co-produced spatial analysis can generate deeper insight into survival strategies, environmental stressors, and infrastructural exclusion.

The findings should be interpreted within the context of several study limitations. The study involved a small sample (nine participants) recruited through a single homelessness organisation located within one London borough. However, given the exploratory and methodologically experimental nature of the research, the study intentionally prioritised depth of engagement and the feasibility of longitudinal GPS-based tracking within a real-world homelessness context. The collaborative design with SNW charity enabled the research team to better understand participant trust, engagement, and willingness to participate in this form of mobility research (beyond offering an honorarium). While the findings are therefore not intended to be broadly generalisable across all homelessness contexts, they provide important insight into the practical and methodological potential of longitudinal spatial research with homeless populations.

An additional limitation relates to gender representation, as only one female participant took part in the study. Consequently, the findings may not fully capture the distinct mobility experiences, risks, and support needs associated with women experiencing homelessness, particularly given evidence that women's homelessness experiences can differ significantly from those of men.

Future research should explore how such spatial methodologies can be applied comparatively across boroughs or cities, and how longitudinal tracking over extended periods might reveal seasonal or policy-driven shifts in mobility. As urban environments evolve, incorporating real-time spatial evidence into homelessness scholarship may strengthen both analytical precision and applied relevance.

Conclusion

This study demonstrates the analytical value of integrating longitudinal GPS tracking with participatory walking interviews to examine homelessness as a spatially dynamic condition. By revealing how mobility patterns reflect safety negotiations, fragmented healthcare access, infrastructural exclusion, and tactical use of public and green spaces, the research challenges static representations of homelessness embedded in many policy frameworks.

Methodologically, the study contributes an ethically grounded and replicable model for combining spatial analytics with narrative interpretation. Substantively, it advances understanding of how urban environments structure both vulnerability and resilience. The findings suggest that homelessness is not only a housing issue but a spatial governance issue, shaped by the organisation of services, urban design, and bureaucratic fragmentation.

In foregrounding mobility as both survival strategy and structural constraint, this research offers a framework for examining homelessness through the lens of spatial justice and infrastructural inequality. Integrating such approaches into future scholarship may deepen understanding of how urban systems can either compound precarity or support pathways toward stability. To interact with features of the online map we suggest you [click through here](#) or contact the author for further details.

Declarations

Funding: This research was funded by The British Academy under an Innovation Fellowship 2022-23 (IF2223\230018).

Competing interests/Conflict of interest: There are no competing interest or conflict of interest with this work.

Ethics approval: Ethics was award through the University of Roehampton Research Ethics and Integrity Committee (Reference EDU 23/243).

Author contributions: MJ (lead author and Principal Investigator of the Fellowship), ZP (research assistant, second author)

Acknowledgments: Special thanks to Sutton Night Watch Homeless Charity (Andy Fulker, Lisa Brown and Kelly McMullen) for their ongoing support and commitment to our collaborations. Thanks extends to the Research Office at the University of Roehampton for administrative oversight on the facilitation of the grant. We would like to thank the article reviewers for their time and contributions to revising and enhancing this manuscript.

References

Anderson, I. (2004). Housing, homelessness and the welfare state in the UK. *European Journal of Housing Policy*, 4(3), 369–389.
<https://doi.org/10.1080/1461671042000307305>

- Baillergeau, E. (2014). Governing public nuisance: Collaboration and conflict regarding the presence of homeless people in public spaces of Montreal. *Critical Social Policy*, 34(3), 354–373. <https://doi.org/10.1177/0261018314527716>
- Barker, S. L., & Maguire, N. (2017). Experts by experience: Peer support and its use with the homeless. *Community Mental Health Journal*, 53(5), 598. <https://doi.org/10.1007/S10597-017-0102-2>
- Bell, L., Whelan, M., Lycett, D., Fernandez, E., Khera-Butler, T., Kehal, I., & Patel, R. (2024). Healthcare and housing provision for a UK homeless community: A qualitative service evaluation. *Public Health*, 229, 1–6. <https://doi.org/10.1016/J.PUHE.2024.01.017>
- Beute, F., Marselle, M. R., Olszewska-Guizzo, A., Andreucci, M. B., Lammel, A., Davies, Z. G., Glanville, J., Keune, H., O'Brien, L., Remmen, R., Russo, A., & de Vries, S. (2023). How do different types and characteristics of green space impact mental health? A scoping review. *People and Nature*, 5(6), 1839–1876. <https://doi.org/10.1002/PAN3.10529>
- Crisis UK. (2016). *New research reveals the scale of violence against rough sleepers*. <https://www.crisis.org.uk/about-us/latest-news/new-research-reveals-the-scale-of-violence-against-rough-sleepers>
- Crisis UK. (2017). *Rough sleepers being targeted by legal powers designed for antisocial behaviour*. <https://www.crisis.org.uk/about-us/crisis-media-centre/rough-sleepers-being-targeted-by-legal-powers-designed-for-antisocial-behaviour/>
- Crisis UK. (2024). *Sign shows cruel reality of criminalising homelessness*. <https://www.crisis.org.uk/about-us/latest-news/crisis-sign-shows-cruel-reality-of-criminalising-homelessness/>
- Crisis UK. (2025). *Homelessness and mental health*. <https://www.crisis.org.uk/ending-homelessness/key-homelessness-policy-areas/health-and-wellbeing/mental-health/>
- Cummings, C., Lei, Q., Hochberg, L., Hones, V., & Brown, M. (2022). Social support and networks among people experiencing chronic homelessness: A systematic review. *American Journal of Orthopsychiatry*, 92(3), 349–363. <https://doi.org/10.1037/ORT0000616>
- Dobson, R. (2019). Policy responses to 'rough sleepers': Opportunities and barriers for homeless adults in England. *Critical Social Policy*, 39(2), 309–321. <https://doi.org/10.1177/0261018318817483>
- Edmed, S. L., de Waal, L., Rossa, K. R., Pattinson, C. L., Salom, C., Gadam, S., Lorimer, N., & Smith, S. S. (2025). Sleep health in people experiencing homelessness: A scoping review. *Health & Social Care in the Community*, 2025(1), 8766803. <https://doi.org/10.1155/HSC/8766803>
- Foreman, E. R. (2025). *Confronting a blind spot in homelessness data: the invisibility of women who are rough sleeping*. <https://www.homelessnessimpact.org/news/confronting-a-long-standing-blind-spot-in-national-homelessness-data-the-invisibility-of-women-who-are-rough-sleeping>
- Fountain, J., & Howes, S. (2002). *Home and dry? Homelessness and substance use in London*.

- Geofabrik GmbH. (2024). *Download OpenStreetMap data for Greater London*. Retrieved August 2, 2026, from <https://download.geofabrik.de/europe/united-kingdom/england/greater-london.html>
- Greater London Authority. (2024). *CHAIN Annual Report*. <http://data.london.gov.uk>
- Green, H. D., Tucker, J. S., Golinelli, D., & Wenzel, S. L. (2013). Social networks, time homeless, and social support: A study of men on Skid Row. *Network Science*, 1(3), 305–320. <https://doi.org/10.1017/NWS.2013.18>
- Grenier, A. (2022). *Late-Life Homelessness: Experiences of Disadvantage and Unequal Aging*. McGill-Queen's University Press. <https://doi.org/10.1515/9780228009535>
- Gunner, E., Chandan, S. K., Yahyouche, A., Paudyal, V., Marwick, S., Saunders, K., & Burwood, S. (2019). Provision and accessibility of primary healthcare services for people who are homeless: A qualitative study of patient perspectives in the UK. *British Journal of General Practice*, 69(685), e526–e536. <https://doi.org/10.3399/BJGP19X704633>
- Hibbert, P. (2025). Formative, not extractive: How critically reflexive research makes a difference. *Management Learning*, 56(1), 107–114. <https://doi.org/10.1177/13505076241284351>
- Hossain, M. M., Sultana, A., Tasnim, S., Fan, Q., Ma, P., McKyer, E. L. J., & Purohit, N. (2020). Prevalence of mental disorders among people who are homeless: An umbrella review. *International Journal of Social Psychiatry*, 66(6), 528–541. <https://doi.org/10.1177/0020764020924689>
- Ilyas, Y., Daryani, S. H., Kiriella, D., Pachwicz, P., Boley, R. A., Reyes, K. M., Smith, D. L., Zalta, A. K., Schueller, S. M., Karnik, N. S., & Stiles-Shields, C. (2023). Geolocation patterns, Wi-Fi connectivity rates, and psychiatric symptoms among urban homeless youth: Mixed methods study using self-report and smartphone data. *JMIR Formative Research*, 7, e45309. <https://doi.org/10.2196/45309>
- Jordan, U., & Sage, D. (2024). A constant threat? A narrative exploration of the relationship between benefit receipt, mental distress and the threat of homelessness. *Critical Social Policy*, 44(3), 357–377. <https://doi.org/10.1177/02610183231199674>
- Katapally, T. R., Bhawra, J., & Patel, P. (2020). A systematic review of the evolution of GPS use in active living research: A state of the evidence for research, policy, and practice. *Health and Place*, 66, 102453. <https://doi.org/10.1016/j.healthplace.2020.102453>
- Ketel, C., & Abdoli, S. (2024). Resiliency in persons experiencing homelessness: A concept analysis using the evolutionary framework. *Journal of Advanced Nursing*, 81(2), 749. <https://doi.org/10.1111/JAN.16440>
- Lachaud, J., Yusuf, A. A., Maelzer, F., Perri, M., Gogosis, E., Ziegler, C., Mejia-Lancheros, C., & Hwang, S. W. (2024). Social isolation and loneliness among people living with experience of homelessness: A scoping review. *BMC Public Health* 24(1), 2515-. <https://doi.org/10.1186/S12889-024-19850-7>
- Local Government Association. (2017). *Council Innovation and Learning in Housing Our Homeless Households*.

- Martineau, S., & Manthorpe, J. (2020). Safeguarding adults reviews and homelessness: making the connections. *Journal of Adult Protection*, 22(4), 181–197. <https://doi.org/10.1108/JAP-02-2020-0004>
- McCormack, F., Parry, S., Gidlow, C., Meakin, A., & Cornes, M. (2022). Homelessness, hospital discharge and challenges in the context of limited resources: A qualitative study of stakeholders' views on how to improve practice in a deprived setting. *Health and Social Care in the Community*, 30(6), e4802–e4811. <https://doi.org/10.1111/HSC.13887>
- McNeill, S., O'Donovan, D., & Hart, N. (2022). Access to healthcare for people experiencing homelessness in the UK and Ireland: A scoping review. *BMC Health Services Research*, 22(1), 1–13. <https://doi.org/10.1186/s12913-022-08265-y>
- Mercado, M., Marroquín, J. M., Ferguson, K. M., Bender, K., Shelton, J., Prock, K. A., Maria, D. S., Hsu, H. T., Narendorf, S. C., Petering, R., & Barman-Adhikari, A. (2021). The intersection of housing and mental well-being: Examining the needs of formerly homeless young adults transitioning to stable housing. *SSM - Population Health*, 14, 100775. <https://doi.org/10.1016/J.SSMPH.2021.100775>
- National Audit Office. (2024). *The effectiveness of government in tackling homelessness*.
- Ngongo, W. M., Peterson, J., Lipiszko, D., Gard, L. A., Wright, K. M., Parzuchowski, A. S., Ravenna, P. A., Cooper, A. J., Persell, S. D., O'Brien, M. J., & Goel, M. S. (2023). Examining how social risk factors are integrated into clinical settings using existing data: A scoping review. *Annals of Family Medicine*, 21(Suppl 2), 68–74. <https://doi.org/10.1370/afm.2932>
- Pinillo, M., & Pinillo, M. (2021). Precursors and outcomes: A look at mental health in relation to homelessness. *Modern Psychological Studies*, 26(1), 2. <https://scholar.utc.edu/mps/vol26/iss1/2>
- Queralt, M., & Witte, A. D. (1998). A Map for You? Geographic Information Systems in the Social Services. *Social Work*, 43(5), 455–469. <https://doi.org/10.1093/SW/43.5.455>
- Ravenhill, M. (2016). The Culture of Homelessness. *The Culture of Homelessness*, 1–274. <https://doi.org/10.4324/9781315615240/CULTURE-HOMELESSNESS-MEGAN-RAVENHILL/ACCESSIBILITY-INFORMATION>
- Rea, J. (2023). Social relationships, stigma, and wellbeing through experiences of homelessness in the United Kingdom. *Journal of Social Issues*, 79(1), 465–493. <https://doi.org/10.1111/JOSI.12572>
- Reeson, C. (2024). Personalisation under the Homelessness Reduction Act 2017: how personal are personal housing plans? *Journal of Social Welfare and Family Law*, 46(3), 390–412. <https://doi.org/10.1080/09649069.2024.2381993>
- Rife, J., & Burnes, D. W. (2020). *Journeys out of homelessness : the voices of lived experience*. Lynne Rienner Publishers.
- Semborski, S., Winn, J. G., Rhoades, H., Petry, L., & Henwood, B. F. (2022). The application of GIS in homelessness research and service delivery: A qualitative systematic review. *Health and Place*, 75, 102776. <https://doi.org/10.1016/j.healthplace.2022.102776>

- Shannon, J. (2015). Rethinking Food Deserts Using Mixed-Methods GIS. *Cityscape: A Journal of Policy Development and Research*, 17(1), 85–96. <https://www.proquest.com/scholarly-journals/rethinking-food-deserts-using-mixed-methods-gis/docview/1681428651/se-2>
- Šimon, M., Vašát, P., Daňková, H., Gibas, P., & Poláková, M. (2020). Mobilities and commons unseen: Spatial mobility in homeless people explored through the analysis of GPS tracking data. *GeoJournal*, 85(5), 1411–1427. <https://doi.org/10.1007/s10708-019-10030-4>
- Šimon, M., Vašát, P., Poláková, M., Gibas, P., & Daňková, H. (2019). Activity spaces of homeless men and women measured by GPS tracking data: A comparative analysis of Prague and Pilsen. *Cities*, 86, 145–153. <https://doi.org/10.1016/j.cities.2018.09.011>
- Stewart, S., & Sanders, C. (2024). Enduring borders: Precarity, swift falls and stretched time in the lives of migrants experiencing homelessness in the UK. *Sociology*, 58(2), 403–419. <https://doi.org/10.1177/00380385231184793>
- Sualp, K., Yalim, A. C., & Gammonley, D. (2025). From hull-house maps and papers to geographic information system (GIS) applications: A systematic review for utilization of GIS in a social work grand challenge of closing the health gap. *Health and Social Work*, 50(1), 7–17. <https://doi.org/10.1093/HSW/HLAE040>
- Yamashita, T., Carr, D. C., & Brown, J. S. (2014). Initial exploration of newly implemented public health policy using geographic information systems: The case of a U.S. Silver Alert Program. *Journal of Health and Human Services Administration*, 37(3), 379–404. <https://doi.org/10.1177/107937391403700305>
- Yang, B. (2019). GIS crime mapping to support evidence-based solutions provided by community-based organizations. *Sustainability*, 11(18), 4889. <https://doi.org/10.3390/SU11184889>