



Original article

“I came here and it flows”*: An interpretative phenomenological analysis of low-income residents’ experiences with allotment gardening[☆]

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ABSTRACT

Accessing nature can significantly benefit mental and physical health. However, in England, individuals from low-income areas generally do not access nature to the same extent as those from affluent neighbourhoods due to a lack of private and public greenspace. In response, this research uses ethnography combined with Interpretative Phenomenological Analysis to explore the experiences of allotment gardeners living in low-income areas. The paper aims to (i) explore the possible wellbeing benefits of allotment gardens and (ii) examine the potential role of allotments in making low-income areas ‘just green enough’. Three themes were developed from the analysis. “*It’s always going to be something which I associate myself with*”: *Connection to Self* explores the sense of identity and empowerment participants experienced through allotment gardening. “*It’s not just your allotment*”: *Connection with Others* outlines the culture of sharing on site which connects gardeners and the challenges to integrating into the community. Finally, “*I find the allotment a safe place*”: *A Space of Sanctuary* highlights the importance of allotments as a safe and private place for participants to retreat to for mental wellbeing. The findings demonstrate the importance of allotment gardening within low-income areas for identity, community, empowerment and mental health and have implications for government and local councils by highlighting the importance of allotments for tackling the issue of greening low-income areas.

1. Introduction

Having contact with nature for between 120 and 300 minutes a week can significantly benefit physical and mental health (White et al., 2019). The restorative effect which many individuals experience in nature can reduce stress and mental fatigue, decrease depression and increase vitality (Kaplan, 1995; Simonsen et al., 2024). However, access to nature is not equitable across the population within England as people from low-income areas access nature less than those from more affluent areas (Natural England, 2021). In part, this can be explained by having limited access to private and public greenspace (Natural England, 2021; Hoffmann et al., 2017). This is significant as lower stress levels have been recorded in low-income areas where greenspace has been embedded and maintained (Razani et al., 2018). In response, the current paper uses qualitative methods to explore the experiences of allotment gardeners who live in low-income areas. More specifically, the paper aims to (i) explore the potential wellbeing benefits that allotment gardens offer and

(ii) examine the role that allotments could play in tackling inequalities in nature access by making low-income areas ‘just green enough’ (Curran and Hamilton, 2017).

There are substantial differences in access to greenspace between affluent and low-income areas with people living in the latter generally having more significant barriers such as having to travel a greater distance to access nature (Hoffmann et al., 2017). For people living in low-income areas, namely households which earn less than 60 % of the median income in the UK (GOV.UK, 2016), urban greenspace is not often suitable for social cohesion due to being viewed as being low quality and unsafe, due to the prevalence of gang-related activity (Maruthaveeran & Van Den Bosch, 2014).

Previous research has identified the importance of interventions in low-income areas which are aimed at improving access to greenspace (Burt et al., 2022). However, achieving a balance between appropriate greening while preventing the gentrification of low-income areas is a complex issue, as vast increases in urban greenery in these communities

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has caused increases in cost of living and housing prices (De Vries et al., 2013). To prevent the displacement of residents during greening interventions, it is essential for there to be a balance between providing sufficient high-quality greenspace while adhering to the needs of residents by making these areas ‘just green enough’ (Curran and Hamilton, 2017; Rigolon et al., 2020). Rigolon et al. (2020) suggest that this can be achieved through employing local people within green spaces and engaging residents through community events at these sites. Greenspaces therefore need to be developed with the intention of empowering residents by returning control to local people (Reed-Thryselius, 2023).

Allotments are grassroots natural spaces which tend to be developed by the community themselves and provide a space where local people can grow produce, socialise, and have autonomy over their own private greenspace (Ghose and Pettygrove, 2014). In low-income areas, allotments can become important community spaces which nurture social cohesion between residents through the sharing of produce, resources and knowledge (Dobson et al., 2020; Delshammar et al., 2016) and tackling social issues which impact their community (Krasny et al., 2009). Additionally, allotments can also benefit individual mental health and wellbeing, through the restorative effect of nature as well as allowing individuals to learn coping strategies to address mental health issues (Ward Thompson, et al., 2016; Ramsden, 2021).

The social capital individuals gain through their membership to an allotment community can also nurture a sense of belonging (Mmako et al., 2019). One way in which this social capital develops is through the exchange of resources, produce and knowledge as allotment tenants build interpersonal relationships with one another (Martin et al., 2017). Sharing resources with others can be a mechanism for building trust between tenants and in this way, allotments can act as a catalyst for social inclusion within a low-income community (Delshammar et al., 2016; Fieldhouse, 2003).

This sense of social cohesion relates to Wenger’s (2011, 1999) Communities of Practice (CoP), where a group of individuals come together collectively to learn in a shared domain of competence. To achieve competence, the members of the CoP connect with one another through sharing knowledge and resources which are conducive to learning (Wenger, 2011). As the members of the CoP continue to practice together, they develop different rituals and routines which form a central part of the identity of that particular CoP (Ingram et al., 2014). Thus, there is a shared history between members of a CoP who become connected through the discourses and repertoire specific to that group and their own tailored approach to a domain (Ingram et al., 2014).

To explore the proposed benefits of allotments, the current study focused on the experiences of allotment holders. This allotment site is situated within the inner-city suburb of St Anns, Nottingham (see Fig. 1), an area placed within the most deprived decile of the indices of multiple deprivation (Consumer Data Research Centre, 2023; Renewal Trust, 2023). Spanning over 75 acres with 670 plots and a history tracing back to the 1830s, St Ann’s allotments is one of the largest and oldest allotment sites globally (Renewal Trust, 2023). The rich history of the site earned it Grade Two status from English Heritage, which highlights the special status of this allotment site.

Plots at St Ann’s allotments can be rented by residents local to Nottingham from £ 125 per year with most plots being separated from one another by 6-foot-high hedges. The site is managed by a dedicated team of staff and supported by volunteers who complete tasks such as clearing disused plots, site maintenance and supporting community events. The community coordinators at St Ann’s allotments work to ensure that St Ann’s residents are represented on the site through employing people from the local area as well as bringing the community together through events and workshops aimed at improving health, wellbeing and social connection (Renewal Trust, 2023). St Ann’s allotments strike a balance between providing appropriate high-quality greenspace in line with the needs of residents while preventing displacement and therefore it was a suitable research site to investigate the question: What are the experiences of allotment gardening for

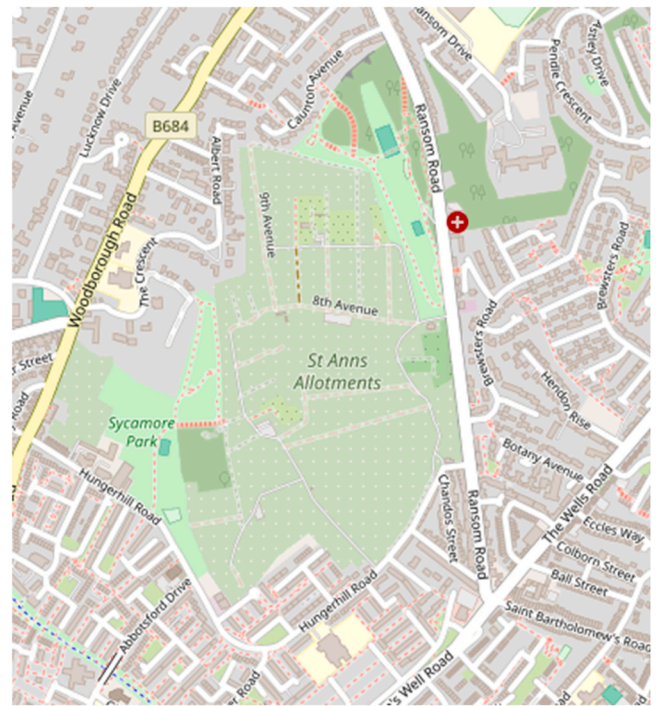


Fig. 1. Placement of St Ann’s allotments within St Ann’s, Nottingham adapted from OpenStreetMap.

individuals living in low-income areas?

2. Method

This study utilised ethnography to gain in-depth insight into the experiences of allotment gardeners at St Ann’s allotments. In ethnography a variety of methods such as interviewing, observation, photography and field noting are used to understand the actions and experiences of individuals (Gobo & Marchiniak, 2016). Consequently, the researcher plays an active role in the research and spends extensive time within the field overtly or covertly participating in the activities and daily lives of the participants (Atkinson, 2007). The use of ethnography in this project allowed for the lead researcher to build a strong level of rapport with tenants, staff and volunteers on site which may not have been possible through typical recruitment. This allowed the first author to become a part of the community, gain a first-hand account of the culture of St Ann’s allotments and place the participants’ experiences in context.

2.1. Data collection

The first author spent 18 months working as a volunteer at St Ann’s allotments. During the first 3 months they worked alongside other volunteers and staff on the site, taking part in tasks such as planting, weeding, hedge trimming, and removing litter. These activities allowed the first author to become part of the community and facilitated an informal introduction to the people on the site. New tenants were recruited during plot tours on the site which took place between May and October 2022. New tenants who expressed interest in taking part in the research were then invited for a brief discussion to help them understand what their participation in the study would involve and to give them the opportunity to ask any questions. Nine new tenants gave informed consent to participate in a semi-structured interview in which they discussed their motivations for taking on an allotment tenancy, their prior experiences of gardening and nature, and their hopes related to having an allotment. These interviews are the focus of this paper. To protect the participants’ identities specific information about

individuals is not provided. The participants were 3 men and 6 women aged between 30 and 68. 7 participants identified as white, 1 as black Caribbean and 1 as Gypsy or Irish traveller. Each of the participants lived within one of nine low-income areas of Nottingham highlighted as being in the top 20 % most deprived nationally by the Indices of Multiple Deprivation (Consumer Data Research Centre, 2023). This was established by asking the participants to share the post code of the area they lived in. After the initial interviews the first researcher spent a year working in the field collecting a range of data from the allotment gardeners. This included taking photographs and doing follow up interviews with participants. Some of these photographs have been included in this paper to illustrate the participants' experiences and provide further context to the analysis.

2.2. Data analysis

This paper focuses on the first round of semi-structured interviews with tenants. The interviews were transcribed verbatim for analysis using interpretative phenomenological analysis (IPA). IPA is a qualitative method of enquiry developed by Smith (1996) and is concerned with the exploration of individual lived experiences (Eatough & Smith, 2017). Within IPA, individuals' experiences are viewed as being unique and thus a subjective and inductive approach to explore these experiences is applied (Pietkiewicz and Smith, 2014; Reid et al., 2005). IPA explores these experiences through three schools of thought; i) Phenomenology, whereby the focus is on revealing participants' experiences of a phenomenon; ii) Hermeneutics, in which these experiences are interpreted in relation to the social and cultural contexts of the phenomenon and the researcher's own experiences; and iii) Idiography through IPA's commitment to working with small samples of homogeneous groups (Smith et al., 2022). IPA uses several methods to collect data including interviews, focus groups and diaries which are then transcribed verbatim prior to the analytic procedure (Pietkiewicz and Smith, 2014). The combination of IPA with ethnography provides a novel approach in which the unique experiences of the participants are situated in the context of the allotment culture through the researcher's own observations. As suggested by Maggs-Rapport (2000), this combination of approaches contextualises the findings as the researcher is more able to understand the participants' experiences in relation to the wider community. The interviews were analysed using seven steps (Smith et al., 2022). This process involved reading and re-reading each transcript several times with initial notes and annotations being developed. Personal Experiential Statements (PESs) were then produced from patterns within the data. Next, the first author explored connections between the PESs to create Personal Experiential Themes (PETs) for the case. These steps were then repeated across each case, with the resultant PETs then used to develop Group Experiential Themes (GETs) for the cohort and the extracts which best represented the themes being chosen for the analysis. The third and fourth author were critical friends in the development of the GETS and the write up of themes.

2.3. Reflexivity

There was a range of insider and outsider identities captured in the research team. As such each author brought a different lens to the analysis as for some there was a sense of shared understanding with the participants and for others there was a sense of naivety that was brought about from their very different background. These different perspectives shaped the way in which the authors interpreted the data thereby deepening the analytic scope. The first author comes from a low-income background, however, grew up in an area with good access to private and public greenspace. Prior to the ethnographic phase of the research, he did not identify as a gardener, however, he has since gained a keen interest in gardening and regularly participates in his home garden. The second author comes from a lower middle-class background. Her parents and grandparents were keen gardeners which ignited her love of nature,

and she spent a year working as a gardener after first leaving school. She has her own garden and has experience of allotment gardening, and lives in a semi-rural location with easy access to nature. She has previous experience of working with St Ann's Allotments on a separate project. The third author has a small home garden and has great access to natural spaces locally. She comes from middle class parents and working-class grandparents, some of whom were keen gardeners. The fourth author comes from a working-class background. She does not have a garden but has a strong connection to nature cultivated through time spent in locally accessible nature and her grandparents' gardens as she grew up.

2.4. Ethical concerns

The study was approved by the institution's ethics committee (ETH2223-0137) and conformed to the requirements of The British Psychological Society (2021) code of ethics. All participants gave informed consent to participate and were fully debriefed afterwards. Participants were aware that they could withdraw any time before and during the interviews and up to two weeks after taking part. No one chose to withdraw. All participants' identities are protected via the use of pseudonyms and the removal of any identifying information from the transcripts. All participants were given a £ 10 voucher to thank them for their time and insight.

3. Analysis

Three GETs, outlined in Table 1, were developed from the analytic process described above which related to the sense of connection with self, connection to others and feeling of sanctuary the participants gained from their experiences with their allotment.

3.1. "It's always going to be something which I associate myself with": connection to self

A sense of connection to self was evident through participants' accounts of their interactions with nature and with their allotment.

"It's quite essential": Identity with the Land

Half of the participants expressed a sense of connection with their upbringing through allotment gardening. This link with their childhood evoked a sense of *identity with the land* for the participants.

Vic's rural upbringing prior to living in inner-city Nottingham was viewed as central to his personal identity:

from an identity point of view and an interest point of view it's quite essential so most of my spare time I try to do something with going outside I think living in a city having grown up in the countryside I think it's always going to be something which I associate myself with to some degree – Vic

The role of nature in Vic's life was connected through two "essential"

Table 1
Table of Group experiential themes.

Group Experiential Theme	Subthemes
"It's always going to be something which I associate myself with": Connection to Self	"It's quite essential": Identity with the land "I feel like this is more my doing": Empowerment through agency
"It's not just your allotment": Connection to Others	"There's such a wealth of knowledge here": A culture of sharing "It's a bit harder on our plot": Challenges to social connection
"I find the allotment a safe place": A space of Sanctuary	"There's two locked gates": Sanctuary from the inner-city "It's cheaper than therapy": A place of inner sanctuary

components of his experience: “interest” and “identity”. In dedicating “most” of his “spare time” to engaging with nature, we see agency in adulthood to maintain his relationship with nature. In contrast, more passively, his relationship with nature is also expressed through the term “always associate” which suggests his early experiences with the countryside were inseparable from his identity. The allotments therefore provided a platform to explore his strong connection with nature into adulthood. For Rhian, the transition to urban life was challenging compared to her rural upbringing:

I get pretty distressed about not being in matty fields and stuff to be honest and not having a lot of countryside around and I used to be really into fishing. I sort of tried to, tried to pick it back up when I moved to Nottingham and it's just not really the same as [rural home county] – Rhian

Rhian expresses a sense of nostalgia over her rural upbringing, with the word “matty” indicating a fondness for the messy nature of rural landscapes. Her use of the term “distress” indicates the strength of the emotional impact and anxiety of being away from nature for her. With this there is tension between the idyllic rural environment that she grew up in and a sense of disharmony and loss in her new urban environment where she is unable to take part in meaningful outdoor activities.

“I feel like this is more my doing”: Empowerment Through Agency

Through their experiences with gardening, the participants rediscovered a sense of empowerment and control through the agency they gained from physically developing their allotments. This subtheme highlights the participants’ experiences of rediscovering hidden abilities and their recognition of their own personal agency.

As evidenced in Fig. 2, work on the allotment required physical labour and reinvention of the space. For Amber, this was an empowering experience:

carrying a baby you're like strong but you just get strong enough, then they get heavier and you become stronger but you also get weaker at the same time because you carrying them is like a drain you know because it's not the easiest thing to do, but yeah when you're gardening you're in your own body, you're moving yourself so actually it's a different kind of movement so I enjoyed that bit of



Fig. 2. A footpath Amber created for herself and her child.

space and freedom to be physical but like not with a baby carrying, that's quite empowering - Amber

Using the metaphor of a “drain”, Amber highlights the sense of fatigue she experienced while carrying her baby. In this way she suggests that any strength she gained while pregnant was purely for the benefit of her baby with little being left for herself as she fought the demands of pregnancy. In contrast, following her pregnancy, she suggests that she experienced a feeling of lightness in which she was able to regain the strength and ability to do physical work on her allotment. Through doing this physical work on her plot, Amber was able to utilise a “different kind of movement” in which she gained a greater control over her movements rather than her energy being solely dedicated to the survival of her unborn child. In this way she gained a sense of liberation through feeling embodied during this physical work. The feeling of control this evoked in her therefore empowered Amber through discovering an inner strength that she unlocked through moving herself for herself rather than purely for her child. For Ivy, having autonomy over her environment allowed her to give back to nature:

at home we have a garden but it my neighbour is sort of in control and manages it and we do have feeders up but it's their feeders and their food and I can top them up and look at the birds but here I feel like this is more my doing like I've put it up and I put the seeds up so it feels a bit more like I've done something to help – Ivy

Ivy's experience in the allotment in which she had autonomy over the space, contrasts with the limited control she experienced in her shared home garden. There is a positive transition suggested by the word “but” in which she moved away from a lack of autonomy towards a feeling like everything she does in her space is her “doing”. Here, her ability to “put the seeds up” evokes a sense of pride with the words “I” and “I've” suggesting a transition of power from being a passive observer to having agency over the running of the space. The importance of this agency was the freedom it gave her to more fully give back to nature.

3.2. “It's not just your allotment”: connection to others

As the participants became accustomed to the allotments, the social connection between tenants on the site became a central component of their experience.

“There's such a wealth of knowledge here”: A culture of sharing

As illustrated in Fig. 3, the sharing of produce was an important part of the allotment culture. Furthermore, the sharing of knowledge was also an essential part of sense of connection between allotment holders. In this way, sharing acted as a social currency between members of the allotment community.

Megan described this:



Fig. 3. Leaving resources for others to use was commonplace on site.

the other gardeners that we have met are really, really helpful and there's such a wealth of knowledge here that's-that we're really kind of almost relying on to get us through and everyone's been really, really generous as well with sharing you know I mean barely walk past a garden without them saying "oh hi how are you, have a look around take a sack for the vegetables let me know if you're up to give me a shout if you need a hand" that kind of thing so yeah that's great – Megan

The sharing of food and knowledge on site can be interpreted as a social currency between gardeners who exchange resources with an expectation being built that this favour might be returned. There is a prosperity evoked through Megan's use of the term "wealth of knowledge" and rather than being frugal with this wealth, Megan suggests that this was something which was generously shared. The description that she was "barely" able to walk past other tenants' plots without being offered assistance or produce, creates an image of a rich social hub, where members of the allotment community are keen to help one another. For Megan, as a new tenant, the social etiquette that this sharing represented was an essential aspect of her experience. It helped her to become more integrated into the allotment community as well as find her way as a gardener.

For Bombadil, the knowledge sharing on site allowed him to connect with other working-class people:

I very rarely get to enjoy time with working class people and I love that they're represented love that they're here in this garden in this space and there's this knowledge base and it's being shared I just think that's absolutely wonderful so my first ever meeting in St Ann's allotment I got to hear some people that look and sound like me and I just think that for me that's worth its weight in gold – Bombadil

Through seeing working class people represented at the allotments, Bombadil's world grew larger. Bombadil felt seen through being in a community of people from a similar background to him, and with this, he was able to connect with a wider community of working-class people, as well as with his own working-class identity. This provided an opportunity for him to learn and participate in a more accessible pool of knowledge. Seeing people who "look" and "sound" like him was an important part of the allotment site and was "worth its weight in gold" for Bombadil, suggesting the precious nature of this connection with the community.

"It is a little bit harder on our plot": Challenges to Social Connection

Several barriers created challenges to social connection on site. For some participants, this impacted their ability to connect with other people at the allotments.

As depicted in Fig. 4, some plots are isolated on rows away from the main path. Similarly, the location of Megan's plot meant that she felt isolated from the rest of the community:

there is a degree to which some people are social I think it is a little bit harder on our plot because it is on the little avenue which is locked either side so you can only really come onto this avenue if you also have a plot on here and there are a lot of vacant plots on this particular avenue so that's also made it a little bit harder for that thing as well yeah I mean I got the feeling that if we just wander round and people with that then more people would come and chat to us and it would be okay mean everyone's here because they want to be here and they love what they're doing which helps with I think just finding a point at which to jump off into a conversation - Megan

Megan's world at the allotments felt smaller due to feeling physically separated and consequently isolated from the rest of the community. By recognising her own limitations in breaking into this community, she accepted responsibility to be more proactive and realised that if she approached others first then "more people would come and chat to us". Megan viewed other tenants on the site as being part of an open,

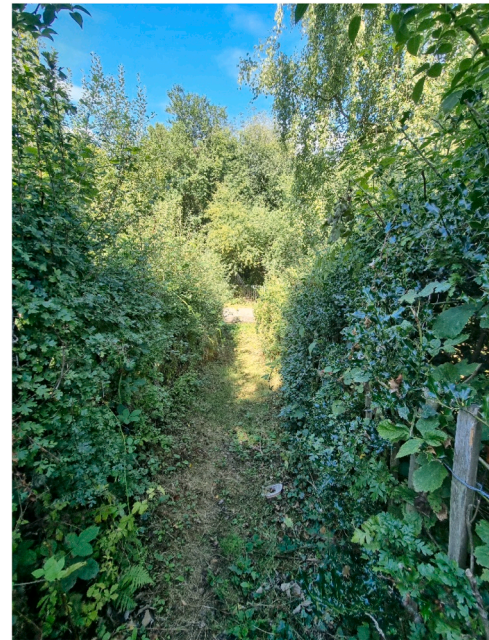


Fig. 4. Some rows* are isolated and away from the main path, *Some allotments are accessed via narrow "rows" which are bordered by tall hedges.

welcoming and like-minded community and viewed other people in a positive way. There is a sense of this effort as being a leap of faith in which she needed to believe that the other person would accept her and reciprocate to be able to "jump off" into conversation. In this way, the allotments are suggested to not necessarily be a naturally social place but one where effort is needed initially which is then reciprocated. Individuals who are able to be forthright in their ability to socialise are socially rewarded. In contrast, Rhian felt she was able to overcome a tendency to isolate herself through working at her allotment:

It might be a better start for me to start off with these smaller ones with the people around because it reminds me to-to-to talk to more people rather than just sort of just yeah, getting hyper focused on what I wanna do. Not even, even if I then saw an interest - So if I started an allotment, getting too focused on that, and then just getting to talk to people around me, I can be a bit of a bookworm and stuff. So it could be it could be a bit of a – I don't need to remind myself to do those things. So I think having that open plan one would be useful in the long term as I become more integrated. Maybe Nottingham, I don't know if I would still find it so you, I'd still like to be kind of connected with the allotment community - Rhian

Rhian recognised that her tendency to become "hyper focused" created a barrier to connecting with other people, as the world around her became blocked out. Through having a smaller plot, Rhian hoped she might be opened to the world around her and more likely to interact with other tenants. Her introverted personality was highlighted by her suggestion that she was a "bookworm" who valued privacy. The need to "remind" herself to socialise suggests this was not something that came naturally to her. Like Megan, Rhian recognised a sense of responsibility to step out of her comfort zone and identify the isolating habits which prevent her from socialising. In this way, there is a sense that socialising was a chore for her and something she had to do, while simultaneously she understood the benefit of connecting with others. Rhian therefore reflected positively on the efforts she was making towards being more social in the future.

3.3. *"I find the allotment a safe place": a space of sanctuary*

For many participants the allotments were a place where they could

escape from both the lack of safety and privacy in the areas where they lived, but also from the negative effects of poor mental health.

“There’s two locked gates: “Sanctuary” From the Inner City

Participants who did not have an appropriate garden space at home felt they could gain a sense of sanctuary, privacy and safety at their allotment.

there’s two locked gates here so our gate with lock than that gate that you lock there’s three as there’s another gate at the front so I felt very safe very secure and then yeah it’s just really energised me brought me out of a really bad space I think so yeah it was amazing – Bombadil

Having several “locked gates”, similar to the one depicted in Fig. 5, which acted as physical barriers to the dangers of the world outside the allotments gave Bombadil a sense of safety. The gates were also interpreted as a physical metaphor for separating himself from the problems in his life as once he was on his allotment, where no unauthorised people were allowed, he felt protected. This feeling “energised” him, offering him a space to rest and become rejuvenated as well as being able to forget the problems in his life. He reports that he was brought “out of a really bad space” through this rejuvenation, something which the word “amazing” suggests was a rare experience for him. For Vic, a similar sense of peace was experienced through having a private retreat:

the relaxation of being able to be in a private outdoor, and I say private but a more secluded outdoor space which isn’t necessarily overlooked which is really important and I can just be up there for hours and hours because I find it so relaxing. In my garden I tend to be quite quick going in and out because I don’t find it so relaxing when I think there are, maybe it’s a minor issue but I feel like everyone would be looking and it’d put me a bit on edge – Vic

There was a sense of being under surveillance evoked through Vic’s description of being overlooked in his home garden leading to a sense of unease and anxiety. The allotments therefore provided Vic with a sense of peace through having a place for him to feel secluded and separated from other people as well as free from the gaze of his neighbours.

“It’s cheaper than therapy”: A Place of Inner Sanctuary

As well as being a safe and private place where the participants could escape from the danger and surveillance of the outside world, the



Fig. 5. Safety behind a locked gate.

allotments also provided a respite from the psychological stresses in the participants’ lives.

Locke felt deeply connected with the natural environment on her plot through a feeling of calmness:

I came here and it flows, you can feel it moving out the end of your fingertips just flowing out and it’s lovely feeling going out and coming back in it’s like breathing it’s just a really lovely atmosphere, it’s not constricted, it’s not contained it’s just free - Locke

Stepping onto her plot brought a change in both Locke’s physical environment as well as her inner world in which she connected with her allotment and everything in it. Through this connection, she experienced a harmony between the sense of time and energy within her and the surrounding environment. The phrases “feel it moving out the end of your fingertips” and “flowing out” suggests that the energy connecting everything in the allotment was extended to include her as well. This sense of flow can be likened to an essential and life affirming lifeforce through her description of it as being “like breathing”. Bombadil experienced a therapeutic effect from the clear mindedness he felt at the allotments:

I spent years and years and years trying to get some support I can’t so we can’t afford to go private and that’s how we came to it so that was it it’s cheaper than therapy and it’s cheaper than the studio space and yeah so maybe the allotment might be a space where I could go in just clear my mind - Bombadil

The repetition of the word “years” highlights a feeling of exhaustion from fighting to get help for his mental health and having to defend himself continually from rejection. The allotments therefore provided a space where he could take control of his mental health and redirect his focus away from the issues in his life towards what he was doing in the present. With this, the word “clear” suggests a sense of cleansing his mind and creating some temporary distance from distress.

4. Discussion

This analysis explored the experience of allotment gardening for new tenants from low-income areas at St Ann’s allotments in Nottingham and the implications of having access to high quality greenspace on individual wellbeing. These findings provide a valuable insight into the importance of allotment gardening for a sense of identity, empowerment, community and mental wellbeing for individuals from low-income areas. This research supports recommendations by Curran and Hamilton (2017) and Rigolon et al. (2020) for making low-income areas “just green enough” by providing a real-world example of a high-quality greenspace which does not negatively impact the liveability of the area. Furthermore, this study also supports previous research which suggests allotments can be beneficial for mental and social wellbeing within low-income areas (Ghose and Pettygrove, 2014; Dobson et al., 2020; Delshammar et al., 2016; Krasny et al., 2009; Ward Thompson, et al., 2016; Ramsden, 2021; Martin et al., 2017; Mmako et al., 2019). The allotments were found to be a safe and private place for the participants to retreat to for a sense of calm and to benefit their mental health. Thus, the findings suggest that allotments can be important spaces to support the wellbeing of people living in low-income areas.

The analysis also highlighted the connection with self which the participants gained through working on their allotment. The natural landscape of the allotments evoked a connection with participants’ early childhood identity with nature which provides support for the meaning pathway to nature connectedness whereby individuals connect to the natural world through symbolism (Lumber et al., 2017). Therefore, identity with nature may form a meaningful pathway to nature connectedness. The identity expressed by the participants can also relate to ‘being’ from the dimensions of occupational therapy in which individuals can become aware of their place in the world through rediscovery of their sense of self (Bishop and Purcell, 2013; Gallagher et al.,

2015). This suggests that allotment gardening has implications for self-worth through providing a sense of equilibrium with the self (Wilcock, 2006; Gallagher et al., 2015). However, those participants who had grown up in rural areas before moving to inner-city Nottingham may have had a strong existing connection with nature that influenced the benefits they gained from allotment gardening. While this was not the case for all participants as some were born and raised in inner-city Nottingham, this sense of identity may not be as apparent among those with limited access to nature early in life.

Additionally, in connection with their sense of self, the participants experienced empowerment through allotment gardening. This evoked a sense of control over what they did with the allotment space but also the discovery of an inner strength. These findings are reflective of the autonomy and competence components of Ryan and Deci's (2002) Self Determination Theory (SDT). Autonomy is shown through participants' motivation from discovering their physical strength and having agency over themselves and their allotment. Likewise, competence is highlighted through the participants' sense of confidence in their ability to use their autonomy to give back to nature and mold the allotment in their own way. Finally, the participants experienced relatedness through feeling accepted into the community, with allotments and community gardens frequently being found to be spaces where people feel supported and guided by other members (Abramovic et al., 2019; Gerber et al., 2017; Harris et al., 2014). Thus, these findings highlight allotment gardening as embodying human motivation and demonstrate how autonomy, competence and relatedness can be nurtured practically in individuals from low-income areas.

Similarly, the sense of belonging identified in the analysis aligns with Wenger's Communities of Practice (1999). The allotments could be considered a CoP due to highlighting how the sharing of knowledge and resources on site (Barthel et al., 2010; Dobson et al., 2020) can connect a group of likeminded people in a shared domain of competence. These findings therefore demonstrate how greater togetherness and belonging in low-income communities forms through the development of CoPs and emphasises the importance of providing spaces where these groups can develop. Conversely, the participants also highlighted challenges in integrating into the allotment community such as gardeners' schedules not aligning, and barriers to community through being on an isolated row. Therefore, this may indicate that there are still challenges to be addressed in making allotments fully welcoming community spaces.

5. Conclusion

The research demonstrates the role that allotments play in making low-income areas 'just green enough' (Curran and Hamilton, 2017; Rigolon et al., 2020). Rigolon et al. (2020) suggest that green spaces need to be developed in a way which engages and employs local people to prevent the effects of green gentrification and make these areas 'just green enough'. As allotments link directly with the communities they are connected to, these spaces can be appropriate greenspaces which do not negatively impact the local area. Furthermore, the analysis suggests these spaces are beneficial for individual well-being and provide a safe and private place to retreat to for poor mental health and a sense of relaxation and calm. Beyond this, in line with the meaning pathway to nature connectedness (Lumber et al., 2017), the allotments also offer a space where people nurture meaningful, or personally important, well-being benefits through a sense of empowerment by having agency over self and space and a connection with identity. Additionally, allotments were found to be spaces of social connection whereby tenants can form CoPs (Wenger, 1999) and develop a sense of belonging. In this way, the findings suggest that allotment gardening embodies human motivation in line with SDT (Ryan & Deci, 2002). However, this project was limited in the demographic sample of the participant group with the participants largely being from a white ethnic background. However, as the demographic of Nottingham is 65.9 % white (ONS, 2021), this sample may be reflective of the local area. Additionally, while the ethnographic

approach used allowed for a greater level of context to the participants' experiences and aided the rapport building process, the limited time the researcher had to dedicate to volunteering meant the project only captured a partial account of the experiences of people who use the site. St Ann's allotments also offers space for a multitude of support groups who use the site and their experiences may not be reflected within the data. Future research in this area could therefore turn the focus towards different demographic groups who use the allotment site to gain an understanding of the experience of individuals from a more diverse ethnic sample. Additionally, exploring the experience of local children and young people who use the space could foster understandings of the benefits of growing up in a low-income area with access to high quality greenspace.

CRedit authorship contribution statement

Jenny Hallam: Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization. **Fiona Holland:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization. **Caroline Harvey:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Rhys Thomas Furlong:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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