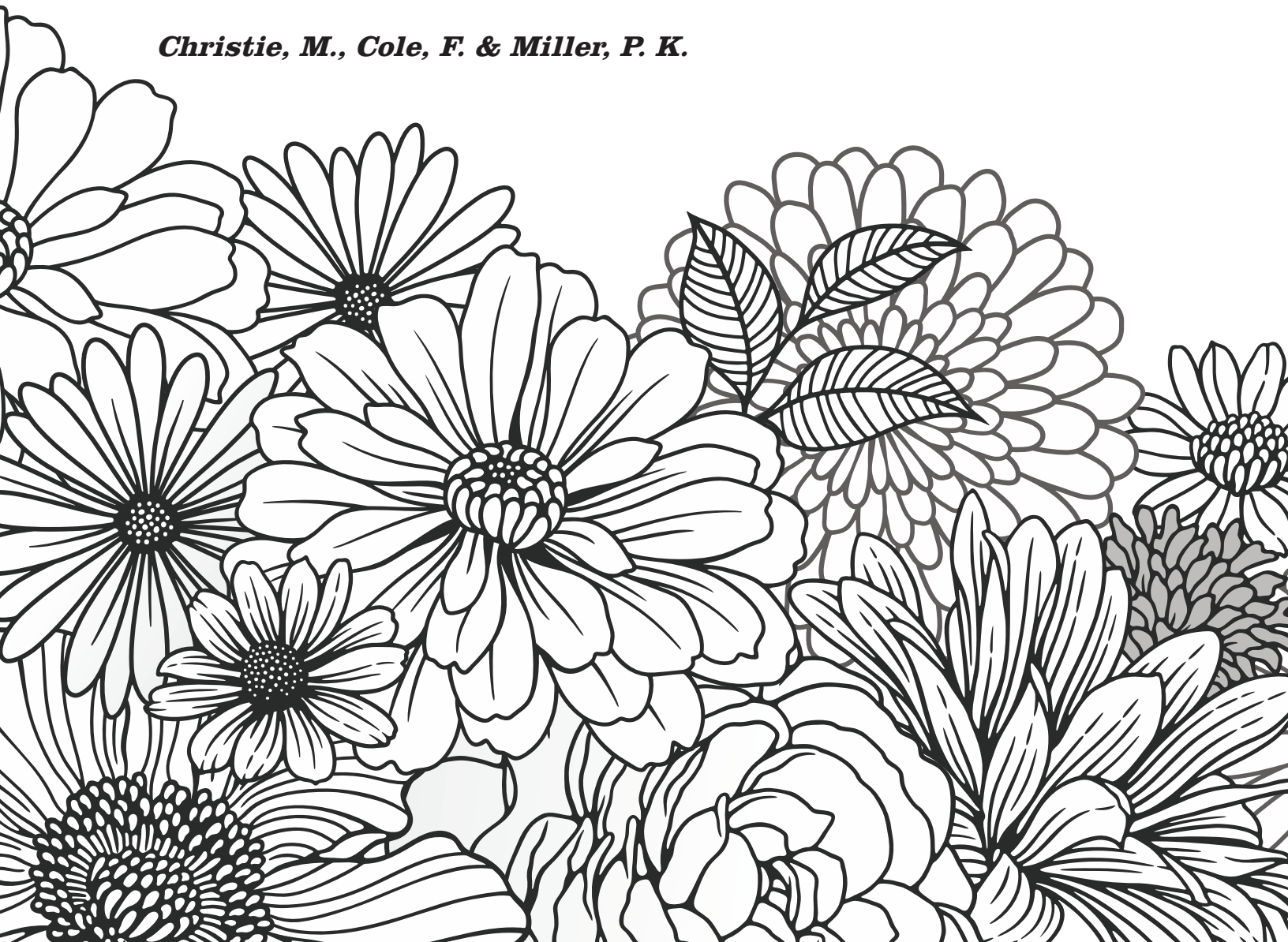


A Piloted Think Aloud Method Within an Investigation of the Impacts of a Therapeutic Green Exercise Project for People Recovering from Mental Ill-Health: Reflections on Ethnographic Utility

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This paper considers a specific and innovative methodological approach to investigating the impacts of a particular mode of therapeutic ‘green exercise’ in enhancing the mental health¹ and wellbeing of a group² of volunteers attending a unique community-based project in a woodland setting in the North of England, UK. The paper was influenced by the distinct lack of studies embracing an ethnographic methodology in understanding the specific impacts of green exercise therapeutic interventions. Hitherto, research has largely focused upon the use of quantitative or less context-sensitive qualitative methodologies; pertinently, prior studies have typically under-emphasised the mediating and moderating influences underpinning reported positive outcomes from green exercise (Rogersen et al, 2020; Clatworthy et al, 2013; Gladwell et al, 2013; Okvat & Zutra, 2011).

The study employed ethnographic data collection including: compilation of fieldwork notes and reflective diaries, including an audio-recorded conversation between the two researchers; taking photographs of participants at work; using participants’ own photographs of the occupations they engaged with (that held specific value and meanings regarding place and connection to nature); and an embedded, innovative use of a ‘think aloud’ method, which elicits participant responses ‘in the moment’ as volunteers were working on autotelic activities within a nature-based environment, including, but not exclusively: dry-stone walling, gardening, horticulture and

pond construction. Two field-based researchers, with a background in sports development and occupational therapy respectively, firstly familiarised themselves with the volunteers and the setting over a six-week pre-data collection period, in order to gain an insider perspective regarding the social dynamics of the group, and the special ethos and cultural dynamics of the centre.

Findings suggest that such a methodological approach to investigating the impacts of a green exercise modality is not only productive, but also essential in fully appreciating the mechanisms and processes underpinning enhancements to mental health and wellbeing.

Introduction

Engagement in activities that provide meaning and value - ‘occupations’ - is now widely accepted to be essential for the health and wellbeing of individuals, groups and societies (Wilcock & Hocking, 2015). At least in part due to this broader recognition, occupationally-focused ‘green exercise’ (Pretty et al, 2005; Pretty et al, 2007) and other nature-based interventions are becoming increasingly integrated into health services across the globe, particularly within the domain of mental health practice (Fieldhouse & Sempik, 2014; Whitham & Hunt, 2010); for example, through the use of ‘care farms’ in Norway (Pedersen et al, 2016), with individuals living with schizophrenia in Korea (Son et al, 2004), individuals with dementia in Canada (Hall et al, 2018) and general psychiatric patients in Hong Kong (Kam & Siu, 2010). In line with this, and particularly since the turn of the century, an expanding body of research has emerged addressing the value of green exercise (henceforth

¹Mental health can change from time to time depending on life circumstances. Good mental health is related to being resilient, having the capability to play a full part in society and realise one’s potential, amongst other indicators. Whereas mental ill-health can be defined in terms of neurotic conditions including depression, anxiety or panic which are more frequently referred to as common mental health problems. Psychotic symptoms are less common and interfere with a person’s perception of reality such as experiencing hallucinations (Mental Health Foundation, 2020).

²Wellbeing defined as: ‘...how people feel and how they function, both on a personal and a social level, and how they evaluate their lives as a whole’ (New Economics Foundation, 2012)

referenced in text as GE) and restorative environments in promoting both mental health and wellbeing (Mitchell et al 2015; Van den Berg 2010; Christie et al, 2016b), including reductions in mental ill-health symptoms such as depression, anger, tension, anxiety and stress-related illness, enhancements to personal and social capital, life satisfaction, and improvements to self-esteem and self-efficacy (Peacock et al, 2007; Gonzalez et al, 2009; Barton & Pretty, 2010; Barton et al, 2012; Fieldhouse & Sempik, 2014; Christie et al, 2015; Pretty et al, 2007). Well-cited primary studies have hitherto outlined innovative interventions in a variety of settings, using a range of occupational GE modalities including allotment work (Genter, Roberts, Richardson & Sheaff, 2015; Page, 2008), gardening (Rappe et al, 2008; Soderback et al, 2004) and horticulture (Christie et al, 2016; Parkinson et al 2011; Kim & Park, 2018; Wichrowski et al, 2005). Moreover, a number of instructive systematic reviews have concluded that such interventions and natural settings have clear facility in improving mental health and wellbeing (Cipriani et al, 2017; Clatworthy et al, 2013; Kamioka et al, 2014; Bowler et al, 2010).

In the context of the rapidly changing nature of service capacity and delivery in many modern (mental) healthcare systems, there is increasing recognition that the needs of harder-to-reach groups often remain largely unmet. Creek (2010) mandates that research into engagement and impact should remain flexible, responsive and methodologically innovative so as to underpin effective future intervention. While the impacts of therapeutic GE interventions on individual and collective mental health have to date been evaluated using a variety of quantitative (Hine et al, 2008; Christie et al, 2015), qualitative (Page, 2008; Stein, 1997; Infantino, 2004; Fieldhouse, 2003; Christie, 2017) and mixed methodologies (McCurdy et al, 2010; Hewitt et al, 2013; Gurski, 2004), it should be noted that the majority of such evaluative studies have been outcome-focused – for example relying on physiological and cognitive measurements, and/or utilising a range of inventories such as the Perceived Restorativeness Scale (PRS) - and attesting to the efficacy of interventions in improving participant wellbeing (Berto, 2014). The

largely unreported factors relate to the *mechanisms and processes* that underpin the positive impacts of interventions, as quantitative methodologies typically fail to reveal the moderating and mediating factors involved, or even the important design features relating to the interventions themselves (Gladwell et al, 2013; Rogersen et al, 2020). Indeed, more recent evidence has suggested that the social interactions fostered within GE projects with the concomitant sense of achievement and purpose involved are essential factors in promoting feelings of wellbeing (Christie, 2017; Barton et al, 2012).

This apparent ‘research gap’ was in part addressed through a previous paper that fully explored the moderating and mediating influences at play in this woodland-based GE programme project³; here, instead, this paper attempts to critically explore the evaluative utility of the overall ethnographic approach, and more specifically the utility of an embedded ‘*think aloud*’ method (Lewis, 1982; Fonteyn et al, 1993) for data collection. Reflecting upon the research practices and theoretical underpinnings of the approach itself, core issues of research outcome, participant feedback and researcher reflexivity⁴ are discussed.

Think aloud: definition and concept

Think aloud (henceforth referenced in text as TA) is defined as a form of cognitive interviewing method undertaken whilst research participants undertake and complete specific tasks. Participants are prompted to ‘*share their thoughts out aloud*’ with the interviewer/s by verbalising any words or ideas that come to mind whilst doing (Charters, 2003). As a concept it is also related to ‘*verbal product*’ and ‘*talk aloud*’ protocols, and, whilst essentially a means of verbalising decision-making choices (Kuusela & Paul, 2000), TA could be adapted and applied in a qualitative research investigation to also appreciate the accounts of experiences as they occur ‘*in action*’ or as part of a reflective, verbalised process subsequent to engagement in an activity, context or intervention (for example, hopes, expectations, concerns). It can be both concurrent (decision making in the ‘now’) as well as retrospective, in reflecting and rationalising upon decisions and experiences after an

³ Formal findings from this study of the experiences of volunteers recovering from mental ill-health are reported in a prior paper [reference redacted for blinded review, though noted during submission for editorial scrutiny].

⁴ Reflexivity is important for qualitative researchers who seek to achieve ‘objectivity and neutrality’ (Ritchie & Lewis, 2003). For example, in addressing issues of researcher bias, and acknowledging own backgrounds and beliefs, thus enabling others to scrutinise the investigation (and investigators) in terms of their objectivity.

activity/event/situation has occurred (Smagorinsky, 1994). Equally, in remaining true to the original concept, TA can also help explain, in the context of this study, the *motives* behind engagement and continued participation in the specific project, its activities and its setting, and the *meanings* participants attached to these. It can essentially give researchers an insight into whatever thoughts and emotions are in play as, in this scenario, research participants go about their occupations. Studies have, for instance, involved the use of TA methods with writers, in classroom, library and clinical health settings, with golfers, poets, racing cyclists and when trying to solve puzzles (Smagorinsky, 1994; Whitehead et al, 2018; Whitehead et al, 2015; Lundgrén-Laine & Salanterä, 2010; Van Den Haak et al, 2003).

Charters (2003) however states that qualitative research inquiry involving TA needs to design and implement an approach which considers a range of factors, including the utility of the task/s, choice of participants, a clearly defined role for the researcher/s, a means of triangulation, and, importantly, the treatment of the data. Participants should also be as fully involved with the research process as possible – in the study referred to here, this involved discussions with the participant group prior to the research study to explain its purpose and intended data collection approach; the use of member verification of transcribed data; and subsequent presentations to the group to validate the findings as a true and accurate account of participant experiences.

TA (unlike ‘talk aloud’ that simply facilitates a description of actions, but not the thoughts and feelings behind or derived from action) - can therefore be a research tool to facilitate the verbalisation of participants’ actions and experiences (Kuusela & Paul, 2000). TA has positivist and empiricist origins and application within experimental psychology to explore individuals’ information-processing (Fonteyn et al, 1993), and therefore it may be questioned whether it has a place within qualitative research. However, in response to this, Eccles & Arsal (2017) cautioned that the process of coding and quantifying thoughts can be at the expense of reporting on the thoughts themselves other than as an illustration of the coding process. They argue that a constructionist epistemology underpinning the overall approach to research can enable an alternative perspective on thoughts that does not claim to be a valid and objective means of presenting a ‘truth’. Since this research was situated in a particular social and cultural milieu, representing the socially constructed nature of

the volunteers’ thoughts, feelings and experiences as they *thought aloud*, and reporting on these within the findings, was essential.

Research aims and objectives

This paper therefore chose to fully embrace the considerations regarding the use of TA as a method within a broader ethnographic approach to researching the participant experiences within this unique setting and culture, and thus argues that TA research can be effectively interpreted through a qualitative lens (Charters, 2003) – notably here, in researching the utility of a GE modality in enhancing mental health and wellbeing.

The manifest aim of the study conducted was to gain an in-depth understanding of how being occupationally engaged in such a programme of collective green activities, in an informal social and physical woodland place, impacted upon volunteers’ mental health and wellbeing - the cognitive, physical and emotional enhancements they may have gained. Within this, there was a further imperative to understand participants’ personalised experiences of being involved in the activities, the meaning of such engagement to them, and their relationships with other involved individuals and the physical environment itself – drawn out not only through the interviews in the field, but also through their *own photographic representations* of the setting, and its meaning and value in their own personal mental health recovery journey (see photographs later).

In this instance, the centre embodied values of informal mental health support, without any tabulated referral criteria, formal commitments to attend, record keeping or therapy goals; but it emphasised non-judgmental acceptance of volunteers for who they are and what they are able to contribute. The researchers were, thus, concerned that their academic identities, and any intention to transparently ‘research’ the volunteers, would not necessarily be welcomed, nor consistent with the empowering and non-hierarchical character of the centre itself.

The Green Exercise Programme and Location

The programme empirically addressed throughout this paper was based at a single centre in the North West of England, which offers a range of GE and nature-based activities to promote health and wellbeing amongst its users. A rural establishment, the centre is situated in a woodland setting within a wider location designated

as an 'area of outstanding natural beauty' (AONB) and is unsupported by any statutory or non-statutory organisations but overseen by a Community Interest Group. Anecdotally, it appeared that the centre was (at the time of research) meeting the support needs and contributing to the health and well-being of a number of individuals living with mental ill health, and who could be regarded as being marginalised and disengaged from traditional services (see below). The two-acre grounds of the centre comprise natural woodland, gardens, ponds, and an area for growing fruit and vegetables. Man-made facilities include an impressive dwelling house (which also houses a community pub), a variety of 'follies' dotted around the site, recycling facilities and a renovated building used as a workshop and space in which to socialise over tea or coffee (Figures 1 & 2).

Philanthropist owners have been offering access to their centre for several years, specifically to benefit people presenting in mental health recovery on a 'drop-in' basis, with organised sessions twice weekly throughout the year. The owners stress that the intention is to promote a 'non-judgemental' opportunity for individuals and groups to immerse themselves in a range of occupations in a natural woodland setting, with a view to enhancing individuals' mental health and general wellbeing. Whilst the centre has no formal links with statutory health services locally, it does have an informal partnership

with a local charity that supports adults with mental health needs. The relaxed access approach offered by the venue and its owners extends to the principle that no formally trained health practitioners lead the activity sessions, though the owners are careful to enable occupational engagement through activities that are of interest, meaningful, motivational and within individuals' capabilities (Pentland et al, 2018). The centre's work can reasonably be thus framed as akin to social and therapeutic horticulture (Thrive, 2020).

The participants in the studied programme, addressed herein as volunteers, along with the site owners, engaged in autotelic activities on two occasions per week for at least four hours per visit. Volunteers had open access so there was no time limit to engage and disengage in the programme - the ones the researchers interacted with had mostly been with the project for between a year and three years. The researchers themselves adopted an 'active participant' role (DeWalt & DeWalt, 2002; Silverman, 2016), working alongside the volunteers in practical activities over several weeks (see later description), and also socialising during coffee and lunch breaks, thereby placing a premium on the experiential nature of the research approach (Mason, 2003; Etherington, 2004). This also provided further insight into the social and situational dynamics of the setting. Options for occupational engagement included



Figure 1. The main 'barn' for socialising over a tea break and lunch



Figure 2. Construction of a small pond from recycled components

horticultural and gardening work; dry-stone walling; renovating outbuildings; and smaller, and less strenuous projects such as constructing bird tables and painting (Figures 3 & 4).

Individuals worked either on their own, in pairs or small groups, with a tea break mid-morning and afternoon, and a designated lunchtime. These social activities involved all participants and it was manifestly apparent to the researchers that they were highly valued as part of the day's experience. Herein, volunteers could collectively reflect upon the work they were busily undertaking, discuss issues of importance to their daily lives, or alternatively just engage in social 'banter'. Others could sit quietly whenever they so wished, but still feel part of the group.

Participants – recruitment and demographics

With any type of research enquiry, a major issue is who, and how many, people should be recruited. This also needs to consider the specifics of who will provide the richest, and optimal insight into the research problem (Ritchie & Lewis, 2003). Whilst this might appear to be obvious, it is essential to think through factors including the roles, knowledge, and behaviour of those available and willing to participate. Participants for this study were purposively recruited during the initial six-week researcher engagement (familiarisation) period. Eleven people volunteered to participate (ages 35-67); of these seven recounted experiencing poor mental health (6

male, 1 female), two volunteer supporters (1 male, 1 female) and the two site owners (1 male, 1 female). The volunteers all had at least one years' experience of participation at the centre, and lived within a fifteen mile radius (with some reliant on transportation by a volunteer associated with the project to access the site), thus providing a homogenous participant group⁵ that could facilitate a genuine insight into the social processes within this specific and somewhat unusual context (Ritchie & Lewis, 2003). All research participants embraced the description of being a 'volunteer' in the study context.

Ethics

Ethical approval was firstly obtained from the University's ethics committee. The researchers subsequently made an initial visit to the study location to meet with the volunteers and owners to explain the purpose of the research, and to answer any questions regarding their participation. The centre owners, who knew all volunteers well, acted as gatekeepers (Holloway & Wheeler, 2002) to ensure that only volunteers whom they judged would not be caused any distress by participating, and who were able to give informed consent were recruited. All informed consents were obtained. In addition to following ethical processes, potential ethical issues were also acknowledged and managed. Hammersley & Atkinson (2007) caution that in ethnographic research, being researched can be



Figure 3 & 4. Dry stone walling and wildlife pond development

⁵ Note: participant demographics were withheld in order to minimise the risk of identification as requested by some participants, and therefore no table of participant profiles is provided here.

anxiety provoking, especially if there is a perception that participants themselves or their lives are being evaluated, or that there is a risk of exploitation if the study is only for the benefit of the researchers. In this study, the researchers' intentional efforts at establishing rapport and building trust concur with Hammersley & Atkinson's assertion that through this, such effects may lessen or disappear over time; and also, through taking a full share of the gardening and renovation activities, the researchers did in fact 'give something back' to contribute to the ongoing work of the centre (Hammersley & Atkinson, 2007: 218).

Methodological Framework, Methods and Procedures

Qualitative research is by its nature situated within a particular empirical context (Knight, 2002; Silverman, 2016), which will influence the specific choice of methodology and research procedures. Given the nature of the centre, noted above, it was reasoned that

a participant-observational ethnographic methodology (Hammersley & Atkinson, 2007; Naaeke et al, 2011), combined with a variant of the TA approach, was most appropriate in order to sensitively address the research aims by working 'with' volunteers, rather than researching 'on' them as they carried out their routine occupations, and encouraging reflections regarding their participation 'in the moment'. This formulation of this reasoning, and choice of specific methods, was guided by thinking schematised in Figure 5.

It was also influenced by the relative lack of ethnographic methodology in understanding the impacts of gardening and horticultural-based therapeutic intervention studies, despite a rich tradition of ethnography within broader health research (Cook, 2005). One recent notable exception in respect of GE modes was by Joyce et al (2016), a novel approach in a field hitherto dominated by the use of questionnaires and controlled trials (Clatworthy et al, 2013). Here, in

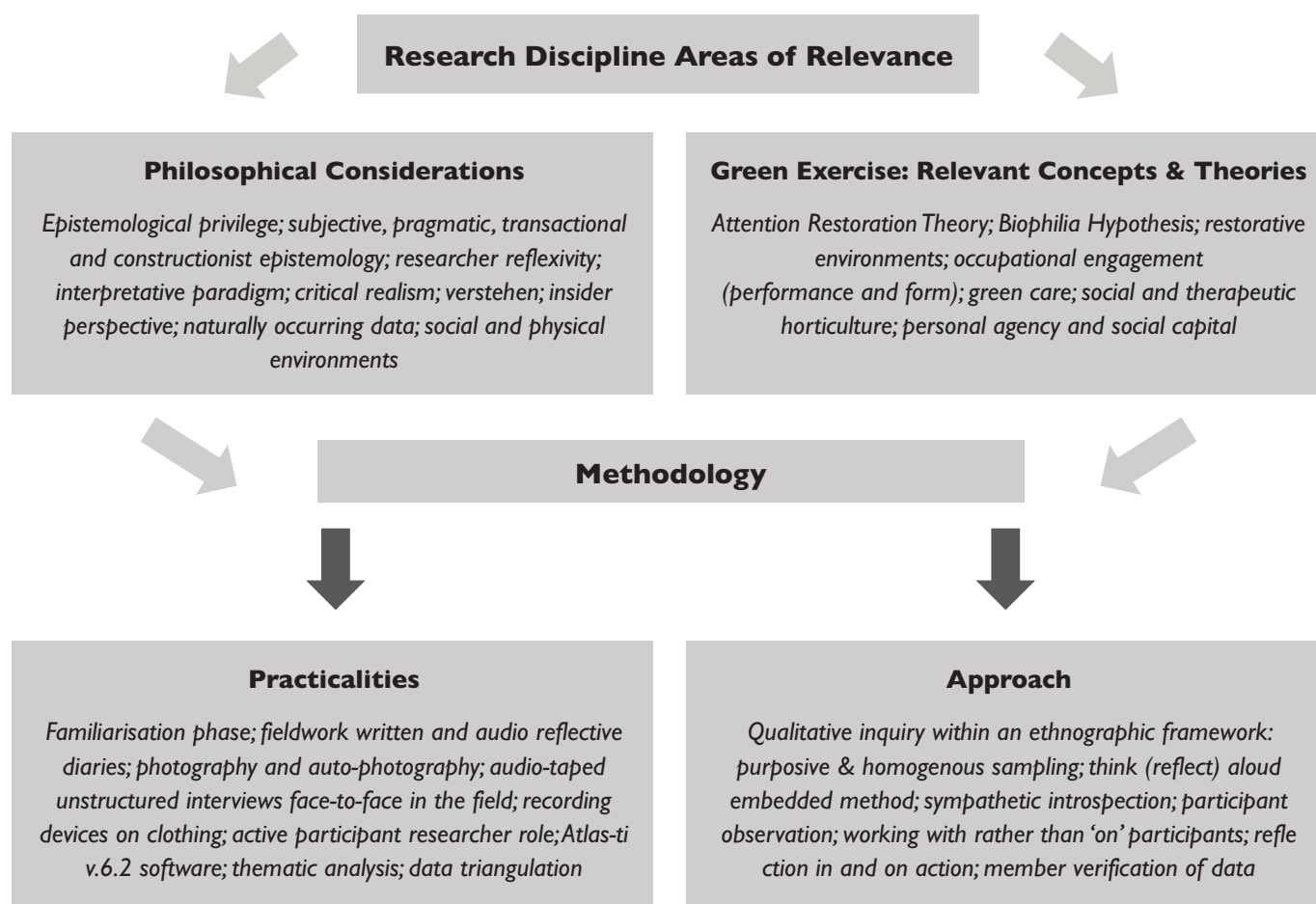


Figure 5. Methodological considerations

promoting research innovation and with the desired intent of informing future practice, the researchers added the extra methodological layer of the TA approach within the broader ethnographic methodology adopted (as noted previously).

The researchers therefore were explicit about the value of using an ethnographic approach to investigate the volunteers' experiences as being the most valid means of gaining their perspectives on the centre, the environment, the activities and the interaction therein. Further, identifying the precise means by which mental health and wellbeing could be enhanced through participation was more likely to be uncovered through encouraging open-ended dialogue '*in the moment*'. This would be enhanced by capturing data as volunteers were actively engaged in their activities, rather than interviewing post-activity. This lent itself to embracing a form of TA, seeking to elicit the thought processes behind volunteers' engagement, and ongoing experiences in respect of making sense of the impact of their involvement in the project. Therefore, the research approach actively avoided the trappings of a quantitative methodology, which may have facilitated more 'outcome focused' findings, and thereby missed important details such as the thoughts, emotions, perspectives and behaviours of those involved (Atkinson, 2012; Silverman, 1997). The richness of the data obtained through the adapted TA approach could not have been obtained through a quantitative approach. Therefore, the researchers reflected a 'critical realist' perspective in their thinking, offering a more subjective, pragmatic and transactional epistemology (Guba & Lincoln, 1994); and so it was a deliberate decision to pursue a methodology and method that would, in the researchers' collective views, lead to a more in-depth interpretation of the setting and its effects, and, by association, obtain useful insight into such impacts that may be useful to disseminate in respect of furthering the case for social prescription.

Data Collection

Occupational engagement is regarded as a synthesis of the person, their occupations, and the environments within which these occupations take place (Pentland et al 2018). Given that the researchers aimed to gain an in depth understanding of a *person's* experiences

of engaging in these *occupations*, gathering data in real time rather than retrospectively in the social and physical *environments* of interest was deemed most appropriate. Therefore, interview data were collected via the TA method of recording unstructured interviews, that is, participants were asked about their thoughts and feelings whilst engaging in the activities. For example, what they were thinking whilst '*doing*' the occupation such as painting, renovating, digging, weeding, planting, harvesting (for example, learning, skills development, challenge, achievement), the feelings and responses derived from such involvement (mood, sense of wellbeing, satisfaction, contribution), and experiences derived from the social and physical environment around them (being in nature, the presence of others; escaping from the stress in their lives).

Procedure

The researchers actively worked alongside the group for a six-week familiarisation period on a twice weekly basis participating in the same practical activities, in addition to the socialising over tea and lunch breaks. The intention was to facilitate as far as possible acceptance within the group's cultural dynamics, and also provide the opportunity to develop a framework for subsequent interview prompts to be used during the data collection phase. It further provided the conditions whereby volunteer accounts were more likely to be accurate reflections of their circumstance, as the researchers had made considerable efforts to facilitate relaxed engagement with the research process, promoting a more intimate and empathetic relationship with the 'researched' (Somekh & Lewin, 2005; Best, 2014), as opposed to the potential for anxiety if adopting an alternative approach akin to '*observers on participants*'.

Complementing the use of TA, other ethnographic methods involved the compilation of fieldwork notes; use of reflective journals and audio reflections between the two researchers; taking photographs of participants undertaking activities (consent given) and using participants' own photographs of their experiences.

Using audio recorders attached to clothing, fieldwork interviews with all eleven volunteers were subsequently conducted over the course of four weeks' *post-familiarisation* phase. Volunteers were actively engaged

in their activities and prompted to 'think aloud' their thoughts and feelings about their experiences to encourage open ended discussion. Some volunteers preferred to pause in their activity in order to speak, but their thoughts and feelings were very much within the immediacy of their occupational engagement. Some structure was provided by pre-determined prompts, which focused, for example, on motives for engagement, the meaning associated with participation, and how the environment influenced their activity levels and choice of occupations. This can be problematic if the interview takes an unexpected trajectory, subsequently creating problems for the synthesis of data across the respondent data set. However, given the sample size was relatively small, and appropriate for an ethnographic study (Hammersley & Atkinson 2007; Ritchie & Lewis, 2003), such a process was manifestly manageable, and there were no indications that the data analysis process was complicated to any degree.

Further, in ethnographic research considerations extend to the 'what' to study – for example, visual images, activities/events, processes or settings/context. Here the researchers considered the approaches that were most conducive not only to facilitating authentic accounts of volunteer experiences, but also that gave sufficient insight into the context and uniqueness of the setting. Some overlap existed here – researchers, for instance, took their own photographs to convey meaning in respect of 'place', but one volunteer also was keen to contribute his own meaning to this through photographs that were not only artistic in composition but also digitally and creatively enhanced to appear congruent with his interpretation of the setting and his connection to it (see Figures 6, 7, 10-14). Embracing auto-photography thus facilitated the capture of the cultural environment for this individual through his own eyes, complementing and indeed extending his own testimonies from the interview format, given he admitted that he found it difficult to give voice to his thoughts and feelings (Glaw et al 2017; Harper, 2000). Such a carefully crafted approach is acknowledged by Charters (2003) as essential in ensuring concerns regarding research design are minimised; this necessitates selecting a suitable role for the researcher (participant observer), a source of triangulation (other modes outlined above), and, most importantly, an appropriate method of data analysis and interpretation (thematic analysis reinforced by member verification). This paper argues that TA facilitated research can

therefore be effectively interpreted through a 'qualitative lens' (Charters, 2003).

Data analysis, and approaches to ensure trustworthiness and credibility

The researchers employed Atlas-ti v.6.2 software⁶, a specific qualitative research software tool, to facilitate analysis of transcribed data, from which initial codes were generated. Subsequently, sub-themes and core themes were determined and refined, firstly in isolation by each researcher, and then after comparison of analytical work between them – which highlighted that similar themes had been arrived at. It is arguable that the six weeks of familiarisation with the group and setting, and then the subsequent engagement conducting fieldwork and disseminating findings to the group, were sufficient to truly acquire the status of a 'knower'. A robust audit trail exists that promotes trustworthiness (Braun & Clarke, 2006), which was further facilitated by discussing volunteers' contributions at the centre on three follow up occasions, including a poster presentation written in more layman's terms. A presentation of the final themes with supporting extracts from interviews was also undertaken, thereby enhancing the value and relevance of analysed data. This enabled the research team to overcome the 'simplistic standpoint' criticism (Mason, 2003) that might be applied to such circumstances; as such, the researchers were proactive in ensuring that transcribed data accurately reflected both words and context through this process of member checking (Thomas, 2017), and thereby to confirm the findings as being representative of volunteer contributions, which, in turn, ensured a higher degree of validity and reliability that might otherwise have not been afforded.

Reflexivity was essential in order to maintain the integrity and trustworthiness of this research, therefore, researchers needed to be self-aware of their own role within the research process. Since researchers were closely involved with the activities of the centre, in addition to conducting the interviews, it is important to acknowledge that this will have influenced participants' responses. Finlay (2002) refers to such research being co-constituted and that although researchers' behaviours and subjective experiences will influence the direction of the findings, this can be an opportunity rather than a problem. Thus, the researchers acknowledge their personal interests in GE, nature, and health, including the impact on their own wellbeing of engaging in the activities of the centre. Reflexive journal entries and

Table 1.
Core Themes

Core Theme	Example From Transcripts
Beneficial environmental influences	"The physical environment, the limestone, the trees, the animal life, sometimes deer go past or you have got different trees and stuff like that...it's special" (Alan)
	"We can come here and not feel marginalised, worried that like if we were in a normal work programme, you know there is a chance of being bullied or...being singled out like "Oh here's that weird guy who does this 'n that" (Dan)
Doing meaningful occupations	"The positivity of that sense of achievement, of things made or rectified." (Griff)
	"We don't do intense gardening (or) pretty gardening, we do wildlife gardening... and the benefit is the insects, the butterflies... You've just seen a bathtub turned into a pond and that's what we do. Upcyclers and recyclers, it's a fashionable thing, but we've done it for years" (Frank)
Social connectedness	"They know each other, that is one of the wonderful things, just so friendly. They all sit down and eat together." (Jane)
	"I think one thing that is characteristic of here is that we work with each other on an equal basis... there is nobody who is above or below, it's equity and its working in partnership with people. That may be a simple thing to say but actually within [mental health] services that is not always the case" (Alan)

notes of discussions that formed part of the ethnographic research process authenticate that as researchers it is not possible to be *independent* of the researched, but the accounts and analysis for this study are deemed both honest and trustworthy.

Findings

Eleven interviews were conducted that lasted between 15 and 40 minutes. Pseudonyms are used for each participant in the quotes provided below. The original research paper identified three core themes (Table 1) from analysing the data from analysing the data to represent the meaning and value attached by the volunteer group to their engagement at the centre: 1) beneficial environmental influences; 2) doing meaningful occupations; and 3) social connectedness. This paper is not intended to detail more expansively the core themes, or the analysis of those, but to focus on the methodology associated with the research inquiry. However, it is useful to briefly recap some of the findings as noted with extracts below.

Examples of the TA approach which evoked manifestly positive thoughts, emotions and feelings from the capture of data whilst *'in action'* in respect of the three core themes included the following collection of extracts from transcribed data. For this volunteer, the experience

at the centre appeared to evoke an innate and profoundly positive connection to nature, as suggested by the biophilia hypothesis (Wilson, 1984):

"I don't think there is another place like this, it's unique, it offers (up) so much. The work; just looking around (here). Like today, when we were clearing the weeds, (the owner) said 'that's a walnut tree!' – I've never seen a walnut tree, it's so big!"
(Griff - Beneficial environmental influences)

The uniqueness of the setting was consistently referenced by the volunteers through TA, and complemented by the researchers' own notations about the setting and participant experiences within; and it was also reflected in numerous photographs offered up by Dan. The images not only helped Dan make sense of his relationship with place and 'being' in nature, but also enabled him to connect to his own struggles with mental health and his journey to recovery. Figure 7, for example, Dan viewed as being:

"Out of place, and out of time. The fact that it doesn't quite belong there makes it belong there all the more. I'm sure there's a fascinating story behind it, but I prefer not to know, since it would lose some of its mystery..." (Dan)

He shared his sense of wonder and fascination with both the flora and fauna on site, as did others over tea breaks, but also with the quirky, man-made objects that were randomly distributed around the site, ‘*seemingly abandoned but also cared for*’ (Researcher notes) – a somewhat suitable metaphor for the personal narratives of those who had struggled for many years with their mental health and wellbeing. Yet the site also offered hope in the achievements and soft fascination nature provided on their visits, as noted by one of the research team:

“There’s a real sense of renewal here in respect of the activities and achievements the volunteers are engaged with. Renewal in a physical sense in respect



Figure 6. (photos by volunteer)



Figure 7. (photos by volunteer)

of the landscape they are collectively shaping, developing and renovating, and the apparent physical fitness associated with that effort; but more pertinently, the reciprocity of this process in promoting friendships, giving them a renewed sense of personal agency, and just generally feeling better about their lives – even if this might be temporary whilst here in the gardens and woodland. Dan showed us some of his amazing photos – you just sensed that, for example in one or two featuring nature reclaiming man-made features, that this was mirrored in themselves reclaiming their own lives. It’s hard to properly articulate... but there’s tangible hope here, hope for a better future, however uncertain that may be, and that we may never know the final destination in terms of their personal recovery from mental ill-health”. (Researcher notes, Day 8)

Meanwhile, Bob highlighted knowledge acquisition as an outcome that concurrently facilitated a re-engagement with the natural world:

“...it’s (the place) rekindled my interest in nature, which was limited, and it still is, but I know a bit more than I did! You know, I know what a sycamore tree looks like now, because we have to keep cutting them back, they are very tenacious.”
(Bob: Doing meaningful occupations)

George highlighted enhanced social capital as a highly



Figure 8. (researcher photo)

valued component of his engagement:

"It's just the spirit of being together...it's almost like being a part of a football team. I used to play a lot of football and it's sort of, like nice, to have a good bond with people of different ages and to listen to what they are about"

(George: Social connectedness)

And in respect of reflection 'on action', or reflecting upon continued engagement, Katie linked occupational engagement to the elicitation of improvements in self-esteem:

"...you're feeling valued, because at the end of the day we can stand and look at what we have done, [the owners] will say "Ooh, you have done really well on that today" and it makes you feel good."

(Katie: Doing meaningful occupations)

From an observational standpoint, researchers thus gained a greater and more explicit appreciation of the cognitive processes of volunteers during occupational

engagement, and not only from an 'end-product' perspective. This can then be carried forwards into data analysis, whereby such verbalizations are later transcribed, analysed, and, ideally, as in the case of the study under review, validated through member checking data with research participants.

Discussion, including limitations of the methodology

Ethnographic research cannot be an objective instrument, in that those being studied in an interactive way can be affected by the research process, and that research may be biased due to findings being mediated through the researcher who has been working in close proximity to the 'researched' (Hammersley & Atkinson, 2007). In addition, there is always the criticism that analysing data collected through any form of qualitative technique, including TA, is open to misinterpretation (Smagorinsky, 1994). Equally, not all cognitions may be captured, perhaps promoting an over-reliance on the researcher's insight into the context of the study and the volunteers' behaviour within it (Cooper and Holtzman, 1983). This might suggest more than one data collection



Figure 9. Constructing a greenhouse

session with each volunteer might be necessary to better represent and capture their world in respect of the context being studied, and their relationship with it. Ethnography, however, can involve multiple types of data, and the researchers' photographs, fieldnotes (for example from informal, social conversations) and reflexive journal entries also contributed to interpreting the context of the volunteers' thoughts and associated experiences. The collective contribution of these methods can thereby promote deeper meaning of contexts and cultures (Dicks et al, 2006; Atkinson et al, 2001). Indeed, this is reinforced by Lundgren-Laine & Salanterä's (2010) assertion that, when interviewing using TA, researchers must be able to use skills of observation in order to interpret the cognitive processes of participants in an accurate and reliable manner. Some respondents might have issues with expressing personal thoughts, nonetheless, Charters (2003) suggests that a significant body of research literature demonstrates a solid theoretical basis, and thereby confidence, for the use of TA in providing a valid source of qualitative data about volunteer thinking, whilst acknowledging concerns about the precise means of gathering data efficiently and effectively.

Strict adherence to TA would typically require a protocol to explore the particular elements in the process of

performing an activity (Lundgren-Laine & Salanterä, 2010) requiring volunteers to verbalise their thoughts about exactly what they are doing step by step. However, such a protocol would not ask them to describe or explain (Eccles & Arsal, 2017). This could be useful from an occupational analysis perspective and would support the development of therapeutic programmes to engage people in such green care activities, but it would not convey the complexity of the experiences of the volunteers whilst participating.

Therefore, in keeping with the overall ethnographic methodology, a more flexible interview approach rather than protocol was used which may be challenged as deviating from the method. TA typically places an emphasis upon '*reasoning*' and '*problem solving*' in an operational organisational context, for instance in nursing practice (Banning, 2008). Here, the process of reasoning has relevance in the sense that the volunteers were encouraged through TA to reflect upon and evaluate their current mental health status, consider how their wellbeing was being influenced by their engagement in the project, and explore how their own personal journey at the centre promotes resilience and problem solving of their personal situation. For example, Dan suggested a growth in self-esteem and self-worth hitherto lacking from his recent life:



Figure 10. Tree stump



Figure 11. Mushrooms



Figure 12. Belongs to the ocean?

“...each day... I go home I look back and see that I have done something. Something worthwhile, that I have kind of made a difference, somehow. It gives me a sense of achievement that I have not had from any kind of paid work”

(Dan – Doing meaningful occupations)

Whilst Bob maintained the centre’s approach and activities was a far better therapy than traditional interventions, suggesting his engagement was within a highly restorative setting as exemplified by Attention Restoration Theory (Kaplan & Kaplan, 1989):

“I like the chickens wandering around, and if you are doing some digging you will chuck them a worm... I think this has done more for my mental health than any talking therapies or anything like that that I have done in the past.”

(Bob – Beneficial environmental influences)

As noted earlier, other methods complemented what was revealed through TA, and provided important insight into the mediating and moderating influences enhancing volunteer’s health and wellbeing. For example, Dan’s inspiring photographs effectively captured the quirkiness of the setting, and its relative ‘wildness’, but also, manifestly, the meaning and value volunteers consistently referred to in their conversations with researchers, both informally and through the interview process. Nature provided a means of escape from daily worries, and regular surprise encounters with fauna such as slow-worms, insect and bird life; and promoted opportunities to ‘reset’, reflect and find solace

(with or without others). The flora also offered up some fascinating exhibits, as pictured by Dan in Figures 10 and 11, with an unusual tree stump, and mushrooms sprouting by a fallen branch; and as Dan suggested, something that seemed incongruous enough to have featured on the ocean floor (*Figure 12*).

Dan’s photographs were an occasional feature of discussions over tea or coffee. Others also testified to the uniqueness of the setting, and its restorative properties, in an almost spiritual way. A photograph as simple as a path running alongside a wall was akin to a path leading to a more hopeful future, or, perhaps, an uncertain one, but one worth exploring nonetheless (*Figure 13*). The connectedness volunteers thus had with this natural environment (and indeed their fellow volunteers), combined with their enthusiastic engagement with the varied activities that served to enhance the setting, were clearly powerful influences at play.

As noted earlier, researchers kept their own fieldnotes and reflective diaries to complement the use of TA. Empathising with, and understanding, participant perspectives was an important consideration. As the researchers became more immersed in the social and cultural milieu of the location, they began to make sense of the various man-made relics located around the site:

“This place is starting to make a bit of sense now. At first the quirkiness that is so apparent on first arriving, characterised by these follies dotted around like the old cart and fairground ride artefact, it just seemed to be totally random. And it is of course,



Figure 13. Woodland path



Figure 14. ‘Gold Mine Ride’ photo by Dan

that's why it's quirky. These things are seemingly abandoned and yet cared for by this group of dedicated volunteers. It's pretty much a metaphor for their own battles with mental ill-health – lost in their struggles for long periods of their lives, without seeming hope or support; yet now they've found some purpose, some hope to cling onto – a life-raft of sorts – and are slowly but surely finding the support they need in this weird but wonderful place.”
(Researcher: Day 10)

The same researcher was also finding some parallels in the participants' lives with the features of the grounds that extended to several acres of woodland:

“Then there's the landscape – a mix of tamed nature, with lawns, flowers and vegetable plots – and the wild, almost unkempt parts. The former suggests some order, the latter work to be done. Much mirrored I think in these guys' lives – partly restored, yet a long and somewhat uncertain path still to follow”.
(Researcher: Day 10)

In respect of the specific activities engaged with at the centre, George considered that, to a large extent, his recent problems of homelessness, having a stroke and overwhelming sense of powerlessness from long-term unemployment, were now being mitigated through the sense of purpose provided through using his skills sets and contributing successfully to a number of small-scale projects:

“This has been very useful to me, to actually be and doing something.”
(George: Doing meaningful occupations)

The ethnographic research approach, with the integrated component of TA, therefore generated some powerful testimony about the positive influence of place, purpose and social connectedness, with resultant impacts on mental wellbeing, articulated in more detail in the original research paper. Nonetheless, it is acknowledged that any research method may not be able to fully appreciate the motives, influences and manifestations of behaviour that result from ethnographic approaches. However, the use of multiple methods, combined with member verification, can go some way to ensuring that the data collected, sifted, analysed and interpreted provides an effective means of mitigating any such inadequacies to promote confidence in researchers'

claims about the volunteers' experiences, the context and their actions within.

Conclusion

Adopting an insider perspective as part of an ethnographic approach is essential in order to derive sufficient understanding and meaning of a specific context (nature-based activity), specific population (volunteers presenting with a history of mental health difficulties) and a specific phenomenon (impacts of GE). This ontological perspective to the research also necessitated a relationship between researchers and volunteers based on trust, promoting an open and honest dialogue, and thereby encouraging meaningful, rich responses through use of a TA approach that are grounded in the occupations and the specific setting the volunteer group are motivated to engage with.

Given this study employed an adaptation to TA from more problem solving contexts it has hitherto been utilised with, the authors humbly suggest a new, qualitative focused version, called 'Reflect Aloud' (RA), which is more suited to eliciting the thoughts, feelings, emotions, impacts and meanings participants would typically evoke in the context of their engagement in a specific social and cultural milieu. The authors suggest more qualitative ethnographic research employing such a variant of TA in the form of RA is a worthy approach that can help fill an important gap in research in understanding the precise mechanisms and processes involved in good mental health and wellbeing outcomes associated with GE modalities, and thus more accurately 'unearth' the meaning and value attached to participant experiences. This may prove influential in promoting the value of nature-based social prescribing interventions for tackling the scourge of mental ill-health within society.

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