The Social Dimensions of Therapeutic Horticulture

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Abstract
Harnessing nature to promote mental health is increasingly seen as a sustainable solution to health care across the industrialised world. The benefits of these approaches to wellbeing include reduced symptoms of anxiety, depression and improved social functioning. Many studies assume that contact with nature is the main therapeutic component of these interventions yet 'green care' programmes typically include activities not based on 'nature' that may contribute to positive outcomes. This study explored the views of service users participating in a Therapeutic Horticultural programme on what factors promoted their engagement in the project, to identify variables other than 'nature' that may be responsible for successful engagement in these programmes. A secondary aim was to assess the significance 'nature' plays including for example, whether a prior interest in horticultural related activities, such as gardening, is significant. Two focus groups were held with mental health service users (n=15) attending a gardening project in south-east England. Findings revealed that the social element of the project was the key facilitator to engagement; the flexible structure of the gardening project was also significant and allowed service users to feel empowered. 'Nature' evoked a sense of calm and provided participants with a non-threatening space that was engaging.

Keywords: mental health, engagement, green care, social and therapeutic horticulture.

What is known about the topic?

- Therapeutic Horticulture is part of the 'green care' approach to mental health
- The benefits reported include improved psychological, physical and social functioning
- There is limited evidence to determine the causal relationship between Therapeutic Horticulture and mental health

What this paper adds

- Engagement in Therapeutic Horticulture is not dependent on personal interest in gardening or 'nature'
- The social dimension of Therapeutic Horticulture is a primary engagement factor
- Projects open to wider community involvement offer opportunities for social integration beyond the programme

Introduction

Harnessing nature through interventions that include 'green care' (Sempik *et al*. 2003; Haubenhofer *et al*. 2010), 'ecotherapy' (Burls and Caan, 2005; MIND, 2007) and 'therapeutic horticulture' (Sempik *et al*., 2003) is increasingly viewed as an effective means to improving mental health outcomes in many parts of the world. The approach can be traced back to earlier traditions within Europe and North America where hospitals and psychiatric institutions used farms and gardens as therapeutic interventions for people with mental illnesses (Wilson *et al*., 2009; Sempik, 2010, Thomas, 2014). In the last 20 years there has been a growth in nature-based interventions to support mental health, hereafter referred to as Therapeutic Horticulture (TH), and this has been accompanied by a growing evidence base reporting its benefits. Thrive, the national charity in the UK supporting Social and Therapeutic Horticulture for people with physical, learning and sensory difficulties as well as people experiencing mental distress has seen the number of registered projects increase from just 45 in the mid-1980's to 900 currently (Thrive 2016).

There is recognition that robust methodologies investigating the *causal* relationships between 'nature' and mental health are lacking (Sempik *et al*., 2003; Wilson *et al*., 2009; Dean *et al*., 2011; Clatworthy *et al*., 2013). Aside from a need to better understand nature's role in improving mental health, it is important to examine what other factors are implicated; TH programmes are

characteristically multi-dimensional (Sempik, 2010) involving activities that may not only be unrelated to 'nature' but may even take place outside of nature, 'indoors'. Furthermore, in the UK policy arena, several reports stress the social dimensions of nature-based interventions as a key benefit for individuals and the financial health of health care systems (Bragg *et al*., 2013; Greenspace Scotland, 2008; Faculty of Public Health, 2008; Mind, 2007; Public Health England, 2014). As interest in TH grows it is therefore vital that this relationship is more clearly articulated. There is an assumption for example that individuals who are already predisposed to nature-based activities are more likely to engage in TH than people who do not profess to be interested (Haubenhofer *et al*., 2010; Parkinson et al., 2011; Clatworthy et al., 2013). This research was interested to explore what factors, including 'nature', may be attributed to successful engagement in TH.

Theories of Nature and Wellbeing

Historically, the therapeutic benefits of working on the land were ascribed to a number of factors that included: fresh air, physical exertion, meaningful occupation and working alongside others (Sempik, 2010; Thomas, 2014). 'Nature' together with these other elements were believed to benefit patients experiencing mental illness. Research today is predominantly focussed on the *psychological* aspects of engaging with nature based upon the ideas of American zoologist, Edward Wilson. Wilson proposed an innate (evolutionary) interdependence between people and the natural environment that explains an intrinsic human attraction to nature

(Wilson, 1984; Burls and Caan, 2005; Stevens, 2010; Dean *et al*. 2011). Based on his *Biophilia* hypothesis, two leading theories promote the idea that contact with nature is psychologically beneficial: Ulrich's (1983) *affective response theory* and Kaplan and Kaplan's (1989) a*ttention - restoration theory* are both rooted in this psycho- evolutionary perspective linking a genetic predisposition for survival to a positive association with the natural environment (Wilson *et al*., 2009). Kaplan's model proposes the restorative capacity of nature to promote recovery from '*attention fatigue*', thereby relieving stress and restoring capacity for '*directed attention*'. This restorative capacity of nature, they argue, not only mitigates stress but also acts as a preventative measure against stress. Ulrich (1983) proposed that by *viewing* nature there is an effect of promoting emotional and psychological recovery from stress; his studies reported increases in positive affect in participants who were given views of nature to look at compared with those who were not, concluding that there is an *aesthetic* dimension to experiences of nature that is psychologically beneficial (Ulrich, 1983; Ulrich *et al*., 1991).

A third theory draws on Cultural Geography as a framework for interpreting the healing power of nature. In Gesler's (1992) paper on 'therapeutic landscapes', he draws on humanistic and structuralist concepts in order to explain how the therapeutic value of nature is derived from a variety of meanings that individuals ascribe to the natural landscape. This perspective acknowledges the multi-faceted dimensions of our relationship with the natural world. While it is not

commonly applied to the scholarship it provides a broader paradigm through which the human-nature relationship can be understood in the context of TH interventions.

Evidence for therapeutic horticulture

Two systematic reviews on TH report universally consistent results in studies (Sempik *et al*., 2003; Clatworthy *et al*., 2013). Evaluation studies in Hong Kong (Kam and Siu, 2010), Norway (Gonzalez *et al*., 2009) and the UK (Bragg *et al*., 2013) report positive results for reduced symptoms of anxiety and depression. An Australian narrative review concluded that contact with nature improves mental health but called for research to establish the exact causal relationship between mental health and 'nature' (Dean *et al*., 2011). Qualitative studies for the UK and North America also report positive impacts including: social inclusion, increased self-esteem and self-confidence (Fieldhouse, 2003; Stepney and Davis, 2005; Sempik and Aldridge, 2006; Parkinson *et al*., 2011; Clift and Bungay, 2012; Bishop and Purcell, 2013). The theoretical orientation of these studies follows the psycho-evolutionary theories developed from *Biophilia* (Clatworthy *et al*., 2013) in which 'nature' is presumed to be the active component in TH interventions. These studies moreover are concerned with the outcomes of TH interventions with only a few studies (Wilson *et al*., 2010; Parkinson *et al*. 2011) addressing other variables that may be active in TH. These studies report that social processes (Parkinson *et al.*, 2011) and organisational features (Wilson *et al*., 2010) were significant variables associated with the outcomes of TH programmes. The

difficulties in establishing causal relationships between intervention and efficacy in multi-dimensional interventions has been addressed elsewhere in the wider social care literature (Coren *et al*., 2014). Although TH is characteristically multi-dimensional (Sempik, 2010), it is not known how these dynamics affect outcomes, nor the extent to which variables not associated with 'nature' may engage individuals. This research therefore aims to build a clearer picture of *processes* affecting participation in TH programmes and the salience of 'nature' versus other components characteristic of TH interventions.

Methods

Project Setting

This gardening project, set in one acre of walled garden in a small market town in south-east England, has been running as a charity for 20 years. It supports people with mental health difficulties as well as being open to the public as a community garden selling refreshments, plant produce and crafts. A number of local people volunteer at the project helping to maintain the garden and providing support with events and there is no distinction made between these volunteers and mental health service users who are also referred to as 'volunteers'. The project follows a recovery model to mental health in which staff facilitate rather than manage sessions, facilitating a 'user-led' approach to activities. Most individuals are referred by Community Mental Health practitioners, Occupational Therapists and Recovery Teams and a small number of people are self-referred. Mental health professionals typically

accompany individuals on an initial visit after which time they return for periodic reviews. Individual progress is monitored externally through the service responsible and it is also monitored less formally by the project manager who maintains regular contact with referring services. The project manager and deputy are the only paid members of staff and facilitate the weekly sessions that run four days per week accommodating between 12-18 people per session. The project was currently supporting 30 individuals on a regular basis and has capacity for a maximum of 50. Activities during these sessions vary but typically include vegetable and flower gardening, maintaining wildlife habitats, woodcraft, pottery, cooking and socialising. While a few participants preferred a specific activity such as gardening or crafting or the role of 'meet and greet', most were involved in a variety of activities or were willing to get involved in whatever tasks needed doing. Participation and attendance is self-determined and self-regulated so the choice is always open. The project places no time restrictions on participation either and is thus an open-ended intervention.

Design

Focus groups were selected for their ability to diminish 'researcher power' (Bryman, 2012) as well as an appropriate method for gathering information about a little known topic (Krueger and Casey, 2009). For people who use mental health services disenfranchisement from treatment choice may result in disengagement from services (Perkins and Pepper, 1998) and the importance of clients' narratives has been acknowledged (Shephard,

2008). The Principal Investigator (PI) facilitated the discussions and a research assistant (RA) observed and took notes. The discussions took place at the garden following Cicourel's (1982) model of 'ecological validity' that acknowledges the importance of the research setting. The questions '*what makes people want to volunteer?*' and '*what makes people want to stay on*?' were used as cues for discussion. The specific questions, '*Is an interest in gardening important?*' and '*Why do you think some people leave?*' were included as cues to stimulate discussion about whether prior horticultural interest is significant for engagement (as reported in literature) and to understand what factors may cause disengagement or no uptake in participation respectively.

Participants and procedure

Participants were recruited to 2 focus groups (n=7; n=8) which took place in November 2014. Eligibility criteria required that participants attended regularly and had direct experience of mental distress. 7 males and 8 females consented to participate. These participants were volunteers present on the day of the focus groups and agreed to participate (N= 5), or who had agreed to participate through information posted on the notice board prior to the date (n=10) and advertised by the project manager at the monthly meeting. The mean volunteering time of participants was 4.3 years. 1 participant had self-referred and the remaining had been referred via a Mental Health Service (n= 12) and Recovery service (n=2).

The discussions were audio recorded and transcribed verbatim by a research administrator. Ethical approval was given by Canterbury Christ Church University. Participants were requested to sign consent forms before the focus group started following a brief introduction by the PI. At this time questions were also invited. All participants consented to the research being audio taped. 1 question was asked regarding the end purpose of the project.

Data analysis

Data was managed using Nvivo software (QSR International Pty Ltd, Doncaster, Victoria, Australia) and analysed thematically. Coding was conducted in 3 stages. The PI and RA independently open coded all transcripts using an inductive framework (Braun and Clarke 2006) to code for the following categories: 'benefits', 'engagement factors' and 'gardening interest'. These codes were based on the hypothesis that many of the perceived benefits of participating in the project would be articulated in relation to reasons for engagement (motivation) with the project and that these references may overlap yet should be distinguished; further, we did not want to assume 'gardening interest' as an engagement factor but we did seek to test this assumption and therefore specifically coded for any references to an interest in: *gardening/nature/the outdoors/green space*s. The PI and RA met to confer and agree this stage; transcript data was coded outwith these categories, generating a further 4 codes and 11 sub-categories. These categories were 'data-driven' (Braun and Clarke 2006) *i.e*. their prevalence was noted according to the frequency with which these topics were expressed, repeated

throughout the focus groups and appeared continuously in the transcript texts. Inter-coder reliability was verified at each stage by agreeing data coded and discarding any data that had not been mutually coded or agreed. Some adjustments were made where either coder had overlooked data.

Findings

4 key themes arose from the data analysis: 'community', 'agency', 'mental health' and 'natural value'.

Community

'*Community'* and '*agency'* were identified as the most significant factors facilitating engagement and arose in response to the initial cues: *what makes people want to volunteer? What makes people stay on?* A range of interests and motivations were reported as reasons for joining the project, such as a desire to get out of the house, wanting social contact and wanting to do something purposeful. This reflected the diverse preferences within the group yet participants all agreed that it was 'people' factors above any other reason that had motivated them to join. Friendships, peer support and company were the topics most frequently discussed here. Relationships formed within the garden were valued for the emotional support and social opportunities they offered members and many participants were meeting each other on a regular basis outside the project. This social dimension had the effect of creating a 'therapeutic' space that participants described as almost

instantaneous on entering the garden and appealed to new members whose early impressions were those of a welcoming place:

> As soon as you walk through the gates, as [G] said, you get that feeling of support and camaraderie really [V1].

The social opportunities that friendships provided were significant to sustaining engagement and extended outside the project environment as well. Many participants expressed difficulties in their social lives and contrasted this with the friendships made at the project:

> I'm going places with people that I met through the garden and it's extended my social circle which for me in the past was a really problematic area [V10].
>
> It's more than just, if this were our job, our employment, we wouldn't just be work mates [V7].

Personal gain through the social bonds formed among members was not the only aspect to this social dimension that participants attributed to their participation. The sense of community articulated by participants as motivation to engage was also attributed to the open nature of the project which appeared to enhance the social identity of the group further. Contact with the visitors to the garden was highly valued. Participants expressed pride in their contribution and the impact of this on visitors was acknowledged:

> But the other effect is people coming into the garden, visitors do have an input on the gardens, of what the garden's doing for the people and for themselves...so it does have some desire of being a great help to everybody I would say [V13].

Social ties within the garden together with contact with the wider public was acknowledged as engaging individuals who felt part of a

wider community and actively involved in its development. An outward looking perspective engendered through this sense of community was furthermore explicitly articulated by participants who reflected on the change over time that had occurred. A personal need for support had been replaced to some extent by a wish to help others and thus the community:

> People just instinctively want to make sure things go well here. For their own ends but also more selflessly for the good of the garden [V8].
>
> Personally, if it helps someone else then it helps me [V4].

'People' factors were identified as the primary factor that engaged participants in the project fulfilling many aspects of social need articulated by participants here. Opportunities for close friendships and belonging to a community were important aspects to early engagement processes. Over time the dynamics appear to change and reciprocity, community building and helping others added to the community dynamics that sustain engagement and serve to attract new participants in a cyclical process.

Agency

Participants talked about the flexibility of the project as a significant contributing factor to their involvement. In particular, the voluntary nature of participation which allows individuals the freedom to choose which activities to be involved with as well as how often to attend was highly valued. The discussion frequently returned to this topic with participants stressing personal agency as a primary motivating factor:

> So that's my choice. Nobody's cracking the whip [V5].
>
> I think it's because it's really volunteering not volunteering how the state might say or how a therapist might call it. It is genuinely voluntary and that makes you want to keep doing it [V13].

Motivation to engage was facilitated by this service model which was appreciated for the equitable structure it presented: '*It's not big brother it's little brother'* [V13]. The effect of a project structure based on *voluntary* participation appeared to stimulate engagement and promote an active rather than passive engagement. This sense of agency prompted further change for some participants who expressed surprise but satisfaction with how being able to self-determine their participation had actually led to self-imposed routines. This was particularly salient to many of the participants who referred to a struggle with routine and schedules:

> It's nice that I don't have to but then I do as a matter of routine find myself here at 9 o'clock on a Monday [V11].
>
> I feel like if I'm put on a schedule it stops me from getting things done. So coming to a place where I can just be like right I'm just going to go do this now it takes the stress away and I can get the thing done [V14].

The flexibility of choice, as well as the variety of activities offered, enable members to experience a real sense of choice and control in what they do and in how they engage. Social dynamics too may be mediated by this process in which participants themselves determine the extent of their participation in the range of both solitary and social activities and are able to choose who to engage with on different days. These two factors play a key role in enabling participation and engagement and are mutually reinforcing. Without such choice participants would not feel as empowered to act as they do.

Mental health

Possible barriers to engagement discussed under the theme '*mental health*' is included mainly as a topic that merits further investigation rather than a salient finding of group discussion. Participants found it difficult to identify reasons for disengaging and barriers to engagement were identified by only a few participants. The discussion changed from a conversation to a few individual responses. Reasons put forward centred upon personal explanations in relation to poor mental health emphasising the ups and downs characteristic of mental health distress:

> I'm just trying to explain that it can be, it's mental health [V2].
>
> Maybe it was a confidence thing on the day that he was coming on his own [V3].

Some participants considered support needs in relation to mental health as a possible barrier to participation, highlighting the role that support workers may play in facilitating contact with the project. While individual mental health problems were perceived as a barrier, the episodic nature of mental illness appeared to be relevant to engagement in that participants perceived this as a *temporary limitation* due to the particular moment in time:

> Once the care worker stops coming they don't have the self-confidence at that particular time to come back on their own [V12].
>
> Talking for myself, I probably wouldn't at that particular time in my life, I wouldn't have ventured here on my own [V9].

Although the idea of disengaging appeared difficult to

articulate for this particular group, these insights provide an explanation that would suggest it is the complex dynamic of an episode of ill health and accompanying loss of agency and confidence that may inhibit engagement in that moment. A temporary restriction to participation was proffered rather than any discrete and permanent barrier.

Natural Value

Whilst an interest in gardening related activities was not found to be a significant engagement factor, the effect of the garden environment did appear to play a role. The therapeutic value of this space and its association with engagement is discussed as '*natural value'*. When prompted, participants from both groups were unanimous that prior gardening interest was not a significant factor to engagement. Only four participants stated that they enjoyed gardening in their personal time as well as during project sessions. Although gardening interest *per se* was not viewed as important to engaging in TH, 'nature' represented through the garden did appear to play a significant part through the *sensory effects* of being in the green space. Participants identified the aesthetic quality to 'nature' as an important aspect of engagement. Especially in the early stages of participation, it appeared to offer a passive opportunity to just 'be':

> You don't have to [like gardening]. You could just look and admire it [V1].
>
> That's what I did pretty much just chilled for the first couple of months; just came and sat here and just look around [V3].

Participants also placed a therapeutic value on the garden recognising the positive changes to mental wellbeing that being in 'nature' aroused. These effects were appreciated as both instantaneous benefits: '*It is just like an instant chill out. [V5]'* as well as more sustained ones that came with the seasonal dimension of nature: *'Each season has something to offer here. [V8]*'. The natural value inherent in the garden rather than the anthropogenic value ascribed to gardening activity could thus be viewed as a factor that facilitates people's involvement in the project, at least in the early stages of engagement.

Discussion

This study explored the factors that facilitate engagement in TH and the extent to which a prior interest in horticultural related activity, i.e. gardening, is necessary to successful engagement. Contrary to the popular view that successful engagement is predicated on a personal prior interest in gardening (Haubenhofer *et al*., 2010; Parkinson *et al*., 2011; Clatworthy *et al*., 2013), the results of this research revealed that the social dimensions and flexible service structure were significant engagement factors while gardening interest was only attributed to motivation in a minority of cases. Nevertheless, the reported therapeutic effects of being in a green space may explain this popular perception. First impressions on entering the garden were described by many participants as creating an instant sense of calm akin to the *restorative* effects described by

Kaplan and Kaplan (1989) and some participants described a sense of wellbeing triggered by the aesthetic experience of being there, echoing Ulrich's (1991) work. The effects of these responses appeared to significantly arouse interest in the project which may be translated into an articulated desire to participate in 'the garden'; while this does not translate to a love of gardening/horticultural related activities, it may stimulate interest in it. The 'restorative effects' of the garden reported here are thus congruent with the dominant paradigm (Clatworthy *et al*., 2013) that asserts that contact with nature is psychologically beneficial (Ulrich, 1983; Kaplan and Kaplan, 1989). However, the findings also diverge from this framework when we consider how participants reported social and structural dimensions of the garden as the main 'pull' towards participation; these responses may be better represented in Gesler's (1992) reflections on the symbolic and structural dimensions of therapeutic landscapes. Opportunities for friendship, socialising outside the project and the highly rated peer support from people '*who've been through similar* [V6]' were some of the social factors that attracted individuals to the project and provided significant benefit. Goffman (1963) described how groups of people bond as a result of a shared experience of 'stigma' and this was borne out to some extent by the value that participants placed on friendships there; however, this sense of social cohesion extended to visitor involvement and social networks developing outside the garden and is an important dynamic not addressed in Goffman's work. The effects of the public's involvement provides opportunities for wider

social integration which has been highlighted in models of social inclusion (Burchardt *et al*., 2002). Although improved social functioning is reported as an outcome of TH (Fieldhouse, 2003; Wilson *et al*., 2010; Parkinson *et al*., 2011), with the exception of Fieldhouse's study that reflected on the social impact *beyond the project*, the issue of extended participation in society is not acknowledged. This study argues that the opportunity to interact with the wider local community through visitor involvement presents an added social value that has not previously been acknowledged and appears to enhance the overall quality of engagement. Also critical to facilitating engagement with the project was the structure of the project which was organised along the lines of voluntary participation (a*gency*). This was considered to be important especially early on in the programme because individuals could engage *on their own terms*. The absence of an externally imposed directive removed the feeling of pressure that was felt to be paralysing for some participants. The ability to self-regulate engagement was reported as highly motivating and this in turn provided the continued motivation to participate. This finding is consistent with Wilson's (2010) analysis of how the power dynamics operating in an ecotherapy programme significantly impacted on individuals' ability to affect positive change. Wilson's analysis focussed on benefits such as motivation to complete tasks leading to a sense of achievement. Because this study was focussed on *processes* it is difficult to know whether the reported self-regulation led to increased task completion or similar achievements beyond

regular attendance. Early proponents (Perkins and Repper, 1998) of a recovery approach to mental health care identified 'agency' as a critical empowerment tool and national policies in the UK have also emphasized the importance of choice and control to service user engagement (Shephard *et al*., 2008; DoH, 2011). The results reported here testify to the importance of this approach and demonstrate that participants are empowered to act through the real sense of agency facilitated by the flexible project structure.

Implications for practice

This research reveals that TH programmes effectively engage individuals who are not necessarily interested in gardening related activities but are motivated primarily by a desire for social contact. Services may therefore consider extending client referrals to a wider client group. Projects that offer individuals the choice to determine their participation may be more engaging then projects with a rigid structure and top-down approach particularly for people traditionally disenfranchised from treatment choice. While this may appear to risk poor uptake of services, this study suggests that it promotes a longer term engagement when participants feel empowered to determine their participation and where the flexibility of the project allows for time to engage. Calls to mainstream ecotherapy as a 'clinical treatment' (Mind, 2007) should consider the effects that this could produce by serving to reinforce social divisions if interventions are limited to specific client groups and 'closed' to wider community involvement. Future service

development can increase opportunities for social inclusion through projects that are open to a wider population.

Limitations

Due to the flexible nature of participation in the project, it was not possible to determine whether the sample was purely convenient or whether individuals who had agreed in advance of the day were those same individuals who attended the focus groups. The views captured here may therefore represent a particularly engaged group who do not represent the experience of individuals who have failed to engage or have disengaged by choice or who were temporarily disengaged as a result of poor mental health. This may also explain the difficulties the groups had in identifying barriers to engagement and is an area that merits further investigation. The significance of the duration of the project was not explored in this study yet this is an area acknowledged in the literature as a significant process factor that may affect outcomes (Bragg *et al*., 2013).

Conclusion

The various forms that 'green care' takes may depend on the cultural context in which it arises (Wilcox, 2007) and harnessing nature to promote good mental health is universally valuable. Therapeutic Horticulture benefits a diverse population including individuals who are not necessarily predisposed to nature-based activities. This study demonstrates that social and structural elements of TH are as significant as the psychological effects of 'nature' that scholarship reports. Research examining the broader

outcomes associated with these elements is important for future service development particularly as it has the potential to benefit more people. The benefits of projects that are open to the wider community is also a particularly important research area that is poorly understood but that promises long term outcomes. Research could also increase understanding of the barriers to service engagement to improve access. Globally, there is increasing recognition that engaging in conservation will mutually benefit the social and natural environments (Hartig, 2008; Dean et al., 2011). Therapeutic Horticulture and similar interventions are therefore psychologically, socially and ecologically salient, promising far reaching benefits today and in the future.

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