

My research study was based on chronic pain, outdoor experiences and any resulting quality of life improvement for sufferers. I chose this area of study because of my own first-hand experiences regarding pain management and improved quality of life following outdoor experiences. In addition, from prior research and finding gaps in crucial areas of study involved in wellbeing, chronic pain, and the outdoor effect. In addition, I recognised that there was potential for the microbiome of an environment to be an effective intervention on inflammation and pain (Han et al., 2016; Craig, 2003; Melzack, 1999; Fields and Basbaum, 1999 in Melenbaum et al., 2008).

My updated research's aims and objectives were:

Aim: To establish a link between outdoor experiences and effects on a chronic pain sufferer's quality of life.

OB1: Establish the participant's experience with pain, treatments, and their effect on their quality of life.

OB2: Evaluate how outdoor experiences facilitate pain management for chronic pain sufferers.

OB3: Analyse the participant's outdoor experiences alongside their reflection on pain and quality of life improvement.

I chose the Interpretivist Phenomenological approach because pain management and the relief of pain are not only individually and independently experienced but also because each person decodes the meaning of their experience to explain that phenomenon. I decided on this rather than the constructivist approach because there is no concrete research that outdoor environmental experiences lessen pain symptoms, and thus is a phenomenon.

From this analysis, I deduced that my thematic analysis would be deductive and semantic. Semantic as 'within the explicit or surface meanings of the data and the analyst is not looking for anything beyond what a participant has said or what has been written.' (Clarke & Braun, 2006. Pp.84) The opinions expressed would be explicitly analysed; I am very aware of what I am seeking before undertaking the study, and I can draw up codes required for thematic analysis beforehand. I knew that I would be identifying themes based on what was given to me at "face value", and that these themes are based on prior knowledge and experience, not only of information from research but also from my own life experience in chronic pain social circles, and pain management treatment programmes.

I decided on a mixed methods approach as I knew that results would need to display quantitative and qualitative data, according to Greene (2007) the advantage of inquiries that incorporate such a way of thinking is that they produce a better understanding of the phenomena being studied than do single method studies. When it comes to phenomenological enquiry into studies such as chronic pain, the following Leonard Bliss (2008) that 'Human beings are complex creatures, and the more strategies that we can bring to bear on studying them and the more we can combine these strategies to be able to look at intricate human interactions, the more we can come to know' (Pp.3).

- Quantitative data would be acquired from numerical data such as percentages and averages, the number of treatments, length of time in pain and averages regarding outdoor experiences. I needed to show in the study that the approach that I had chosen (Interpretivist Phenomenological) would have a solid grounding in the fact that these people had experienced pain for 5+ years and therefore are very keenly aware of how to manage their pain and condition. This length of experience, I believe, is key to providing a solid foundation from which to base a phenomenological analysis; this, combined with the list and

number of treatments undertaken in this period, will provide the study with a sturdy foundation from which the reader can judge the reliability of the participant's evaluations, and therefore their understanding of how an outdoor experience improves their quality of life.

- Qualitative data would result from individual experiences reflecting on their experiences in the outdoors and how that affects their quality of life. The data will inform the reader what type of environment and how often the participant spends time outdoors. I wanted to show in my analysis that the environment can differ or stay the same, and there would still be an effect on the quality of life shown in research, as exercised by participants' opinions.

Themes:

Treatment (Current & Prior) of chronic pain

- Outdoor experiences (Any environment)
- Quality of life (improvement or deterioration)

The coding of which resulted in:

- Treatment of chronic pain
 - Medication
 - Physio
 - Exercise
 - Swimming
 - Walking
 - Counselling
 - Psychotherapy
 - CBT
 - Pain Management Programme
- Outdoor experiences
 - Exercise
 - Walking
 - Running
 - Work
 - Environment
 - Treatment option
- Quality of Life
 - Lessening of intrusive thoughts
 - Lessening of anxiety
 - Lessening of pain
 - Overall effect

Analysis

My investigation into the effect of outdoor experiences on chronic pain sufferers began with ensuring that my participants suffered from chronic pain. I began this study by sending out an invite from my social media pages inviting people to participate; after two weeks with only two responses,

I decided to advertise with local and online chronic pain/disability groups and outdoor social media groups. This way, I was not limiting myself to a bias of solely chronic pain sufferers or outdoor enthusiasts.

Age range, gender, sexuality, race, ethnicity, and religious observations were not limited nor were involved in the questionnaires as I did not believe this is relevant to this investigation.

I sent questionnaires to 25 individuals who suffered from chronic pain and received 16 replies; of the nine questionnaires that were not received, three resulted from health issues, and four from technical issues, whilst the remaining two were unknowns.

As previously discussed, my initial question was to establish how long the participants had been suffering from chronic pain. The results below do not need further analysis as they provide a grounding for the qualitative data. However, on initial observation, we can see that the least amount of time a participant has spent in pain is four years. It is interesting to note here that I did not give specific parameters for participants to choose from, and participants were from multiple different and independent groups, and yet there are numerous answers of the same range. Whilst not specifically relevant to this study, I believe it shows that people living with chronic pain are acutely aware of their condition, its restrictions, allowances, what works for them and how to manage their lifestyles accordingly.

Appendix 1 contains all study results (For word count limitations)

Questions 2 and 3 were concerned with treatment types and their efficacy. I allowed participants to add other treatments they had tried, and the remaining four options were added in question 2. I believe this chart is a true reflection of a chronic pain sufferer's journey to find relief; many treatments are sought, but they always begin with generic medication and physiotherapy, and holistic options are usually the next in line for patients.

From the responses to question 3, we can see that 9 out of 16 participants, around 52%, believe medication to be amongst the most effective for their pain management, whilst only 4 out of 16, 25% of participants mentioned the outdoors or exercising outside to be the most effective. This information tells us that despite holistic therapies being utilised by all participants in some manner, medication is still used as standard practice.

Questions 4 through 8 focus on the outdoors and their effect on the participant, pain, and quality of life. I wanted the participants to spend more time thinking about the effect of the outdoors on their life, pain and how that affected their quality of life.

Question 4 is regarding the use of the outdoors for pain management; I did not use parameters for participants to follow. Out of the sixteen answers, only two did not give a direct yes, meaning 88% of participants gave a resolute yes to using the outdoors to manage their pain; This informs the study that a high majority of participants actively use the outdoors for therapeutic management of their pain symptoms and causes.

Question 5 looks further into detail about how much time is spent outdoors. I wanted to investigate whether the time the participants spent outdoors was in the same environment in each instance or whether it differs. The answers given are not uniform for varying reasons; work, leisure, and active pain management; this allows us to understand that the use of the outdoors in pain management can be routine or inconsistent due to available free time and that accessibility due to disability or pain levels can be a barrier to spending time in the outdoors. These answers inform the study that either the time spent outdoors is not dependent on the immediate environment the participant is in

and anywhere in the outdoors can be used as a therapeutic means, or it must be a specific environment in the outdoors to be effective, for example by water, or in woodland.

Question 6 gives a variety of options for answers. As the questionnaire is inductive and semantic, I wanted to manage the answers into an effortless format which would give concise information for the study. I chose this setup because, from experience, I know there is a tendency for information to become excessive regarding personal questions and treatments from people who suffer from debilitating pain.

I guided the answers from my experience and education in pain management and chose the top four therapeutic outcomes I believed to be relevant to this study and its limitations. As we can see from the answers, nearly all participants chose "lessening of intrusive thought patterns", which is a commonality for patients who suffer from chronic pain; secondly, we see "lessening of anxiety", and third, we can see that "lessening of pain", and fourth is "generally feeling more able" is the least opted-for answer from the choices given. The remaining answers are ones that participants added themselves.

As chronic pain conditions and their symptoms are unique and therefore person-specific, the reasons for relief from pain can and will be numerous, making not just chronic pain a near phenomenon but also its form of treatment. The top two answers to this question lead us to recognise that relief from pain can come from the mind and not just a bodily treatment such as physio or heat therapy, which is also seen in the participant's answers that have been added.

Question 7 requires participant reflection on the effect of regular outdoor exercise on their overall quality of life. Initially, the critical finding is that all participants believed their time spent outdoors positively affected their quality of life, with two participants referring to the instance of pain, post- or pre-exercise.

This question is key to the study and one of the main themes I wanted to focus on for critical evaluation as it provides a basic pattern for understanding how pain management can work outdoors as a therapeutic instrument for chronic pain sufferers and promises to show that more can be gleaned from a deeper investigation. Eleven participants referred to their mental health and its consequential effect on pain, and five to their physical health. More than two participants recognised a link between mental health and their pain, which suggests significant awareness of stress and anxiety and high emotional states in their bodies and the pain they feel.

Questions 8 and 9 focus on Shirin Yoku, forest bathing; as previously discussed in my research proposal, I wanted to provide a forest bathing experience based on previous research I had undertaken for a few participants to further my investigation into utilising the outdoors as a therapeutic means in the treatment of chronic pain and therefore increasing quality of life. As will be seen from the reflective part of this paper, we can conclude that the information in these two questions, whilst relevant to the study, is not pertinent to its overall critical evaluation.

Post-study Reflections

In order to complete a critical reflection of the progression and resulting study, it is necessary to evaluate the research objectives in the research proposal comparatively.

I will address each objective with my accurate reflections. From this, I will reflect on the research process and my thoughts going forward.

Name of paper and aim:

Are outdoor forest experiences a viable form of pain management for chronic pain patients?

Aim: To critically evaluate whether an outdoor experience in a local forest environment using meditative exercises is a viable alternative therapeutic method for pain management?

*I have included the timetable in Appendix 2 for comparison

RO1: Create and manage a pain management day programme that involves forest bathing (Shirin Yoku), mindfulness activities based on biophilic activities, and some light physical exercises focused on sensory reception, with a reflective period at the beginning and the end of the day.

The creation of the programme never began. Initially, there were communication issues regarding CIC contacts and the leaflet I had designed never reached its intended group target or reached far too late, and I received zero replies. However, I had sound access to the woodland area where I wished to set up the programme, though the communication with the owner was lax from their end, and finalising a date became desperate. After allowing two weeks for responses from the study and the landowner, I changed tactics and advertised my research study on my personal social media page. Within a few days, it was clear that this would not be the avenue to follow; thus, I changed my strategy again. I advertised in hiking, outdoors, adventure groups, disability groups, and chronic pain social media groups. I allowed two weeks for responses and received 25 offers of participation. At this time, it was becoming clear that due to the participants' range and locations, I would not be able to complete a physical in-person forest bathing programme. Therefore, I adapted the study to be a remote study with the potential for participants to undertake an outdoor guided meditation at their convenience within the required time scale.

On reflection, I believe my initial aims were too ambitious; my initial confidence was found in the communication and links I had made with a few local CICs, and I relied heavily on these links for potential participants. After this attempt failed, I was confused about what to do; this uncertainty ran into my time scale, and despite eventually finding a solution, my study had to be curtailed significantly.

RO2: Investigate and explore participant reactions to outdoor experiences concerning chronic pain levels and biopsychosocial factors. To be undertaken pre- and post-experience via questionnaires and semi-structured interviews.

Using Google forms, I was able to send out the questionnaires effortlessly. Google also collated and highlighted data from participant responses. The responses were impertinent to this study as there was no room or opportunity for forest meditation to take place nor for interviews. There were intentions for interviews to allow for any outdoor reflection; however, these did not occur due to varying reasons (ill health and technical issues). On further consideration, I should have cut my study shortly after the questionnaires were collated to allow time to reflect and analyse the information I already had.

RO3: Analyse and critically compare participant experiences regarding their outdoor pain management experience alongside their current pain management programme experience.

This objective was idealistic at best. As I changed the structure of the study, the methodology changed also. The only way I could have achieved an autoethnographic response was for the

participants who had attended a pain management programme to partake in an interview after a specialised outdoor therapeutic experience. I could not provide that; the sole participant who had responded positively to an interview had not attended a pain management course; thus, I could not continue.

I do feel that this is a critical part of the evaluation in determining whether outdoor experiences are comparatively more suitable than pain management courses due to their environmental microbiome.

RO4: Critically evaluate the sustainability and viability of a forest experience as a pain management programme based on the participants' experience and theories of Wilson's Biophilia (1984), Kaplan's Attention Restoration Theory (1989) and Ulrich's (1984) theory of views of nature aiding recovery.

I believe the results support the theories Wilson, Kaplan and Ulrich put forward despite being unable to evaluate a forest experience. In addition, the Nature Framework proposed by Ronan Berger's thesis (2008) and Han et al.'s (2016) study on Forest therapy and widespread chronic pain agrees with this viewpoint. From the participants' responses, we can see a clear link between the outdoors and improved quality of life, which supports the understanding that pain is biopsychosocial. Treatment must be multifactorial and multifaceted, as demonstrated in the participants' responses regarding the outdoors and pain management and the treatment options given and added.

The research methodology had to be changed purely to the change of structure. As I could not interview the participants, I could not pursue an empirical ethnographic route and therefore opted for a hermeneutic phenomenological route that would study the participants' lived experiences. There is still more research to pursue into the ethical dimensions of participants lived experiences relating to their chronic pain, which would have suited an autoethnographic study had I been able to continue with a therapeutic outdoor experience and contrast to their experience living with pain.

Future reflections

Whilst the research outcomes and thematic analysis suggest that the hypothesis i proposed is verifiable, I do believe there is further to uncover regarding the quality-of-life variables, such as home, work, community and social life, over a period, with opportunity for reflection to ensure that the research is unbiased and evaluated ethically.

Going forwards, I still believe that in the possibilities of this study, there is far too little research indicating a vital link between biophilia, the microbiome and successful pain management. I will focus more on the programme's structure, set a date with the landowner, create an event, and send out invitations for people to join. I will adhere to strict deadlines from which I will either adapt to or carry on with the intended study.

Personal issues (health and family matters) also impacted the time scale of this study, and therefore in future I will create a flexible timetable that allows for these adjustments, with sub-plans for adaptations, if necessary.

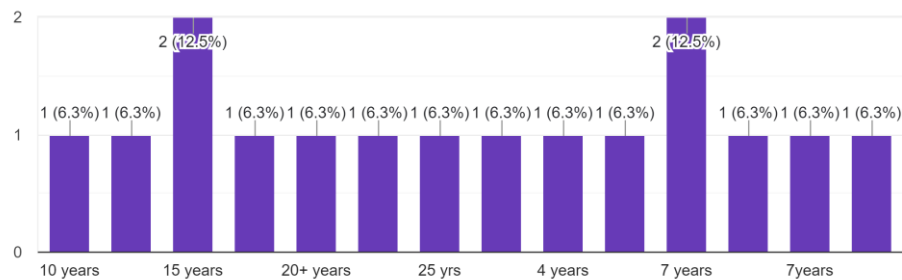
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Appendix 1 – Questionnaire results

Question 1

How long have you lived with pain?

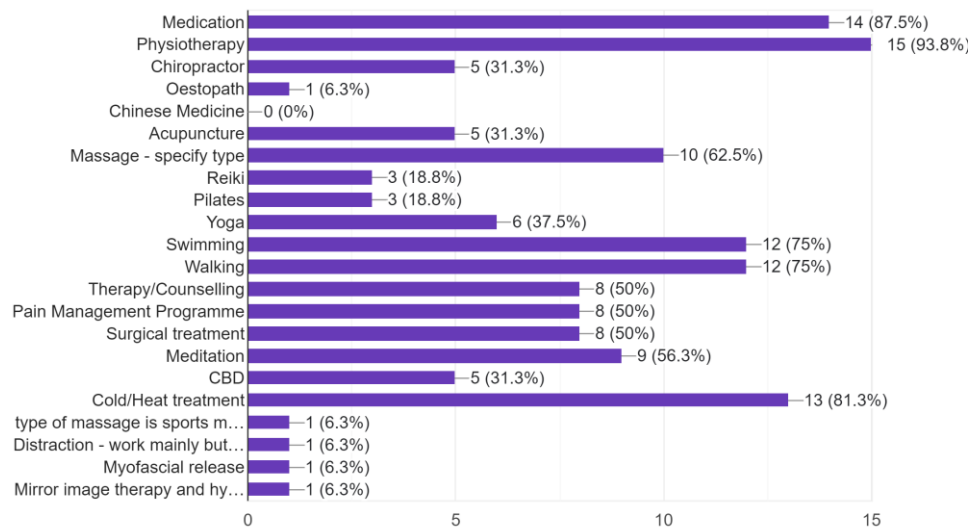
16 responses



Question 2

What treatments have you pursued for the management of your pain?

16 responses

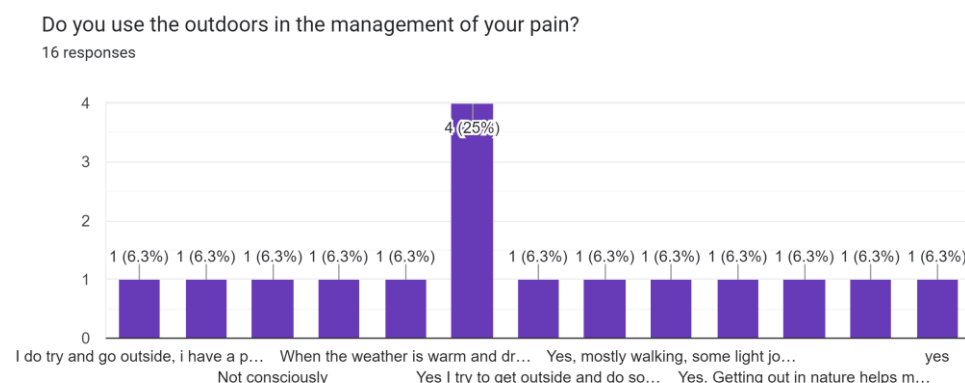


Question 3

Which treatment have you found to be the most effective? Why? (If multiple treatment has been affective please separate on a new line)

1. Medication - I found this really effective mostly in the first instance as it allowed reduced symptoms in order for me to be able to try other methods of pain relief.
Yoga/Swimming/Walking (any exercise!) - I find exercise so beneficial, however, I often struggle to carry out the activity due to pain but afterwards I feel much better. It feels like my body has 'loosened' almost and doing the activity itself encourages my mind to think of something other than the pain. I find the negative thoughts ease within nature.
2. Medication - sometimes Heat treatments Distractions
3. Psychotherapy, pilates, meditation, walking in nature
4. Medication rest water ballet Ultrasound treatment Meditation/ visualisation Hot water bottle Stretching
5. Hot/cold until recently but was such a pain to do
6. Pain medication , under guidance of Dr, also heat treatments , I find saunas and steamrooms really help
7. Physiotherapy used alongside medication
8. Swimming
9. Osteopathy, it's getting to the root of the issues so I'm hoping that eventually there's a reduction in pain.
10. Medication / Pain Management Therapy / Bettering my mental health / Getting outside
11. Surgery excises the growth but medication proves to be the only relief between surgeries
12. Heat treatment Walking Medication/CBD
13. Exercise while it doesnt decrease yhe pain i cant deal with it better with the positive effects exercise givea me
14. Medication
15. Pain counselling to help me have coping strategies
16. Physiotherapy- specialist womens health (paid for privately) Help relax muscles that were contributing to pain and speeded up post surgical recovery

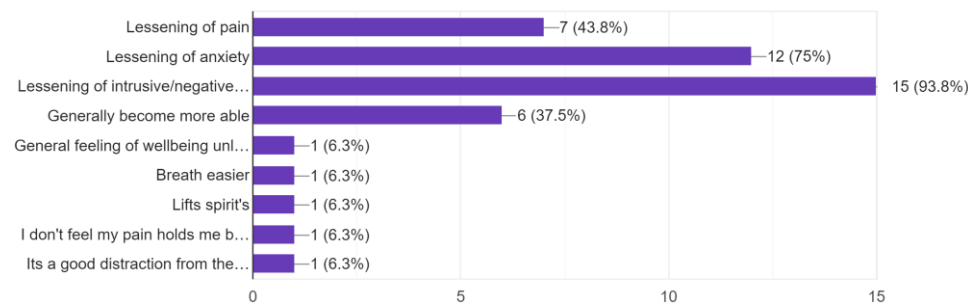
Question 4



Question 5

How do you feel the outdoors helps you in the management of pain?

16 responses



Question 6

How often do you spend time outdoors?

1. Every day! I try to go for at least a short walk every day. The time spent outdoors for me can range from 30 minutes to 2-3 hours depending on the activity and how I am feeling that day.
2. Whenever it is dry I try to spend some time outside but when it is warm and dry I will take my laptop outside and work outside as well as taking a walk etc
3. Daily
4. Everyday
5. When I'm well 80% of the day when I'm ill 0%
6. About 1 to 2 hrs 3 to 4 times a week
7. I work in an outdoor job part time alongside study at uni and all my free time is spent outdoors
8. Everyday
9. Every day
10. I try to go out for a walk everyday
11. Less than I should
12. Usually daily, I aim for five times per week.
13. Daily at the stables for 30 to 60 mins and try to do a long walk once a week
14. Everyday, walking the dog usually.
15. As much as possible
16. Several times a week

Question 7

Do you feel regular exercise in the outdoors helps increase your quality of life? If yes, can you give examples?

1. Absolutely! I feel that it can be so easy to sit at home feeling generally rubbish due to pain but getting up and out there might feel a struggle at the time but allows you to feel like you have achieved something and not wasted the day with chronic pain. I find that

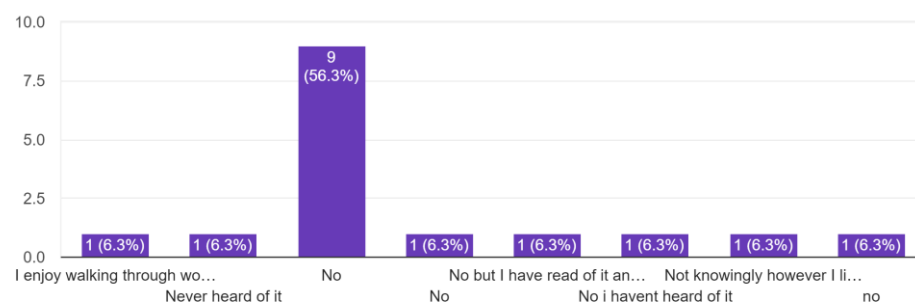
the exercise allows me to focus on something else other than the negative thoughts and just getting some fresh air feels therapeutic in itself.

2. Yes, most days if the weather is good then I feel walking for a short distance can alleviate some of my stiffness and helps maintain my general fitness and stamina.
3. Yes, regulation of emotions, nervous system which helps reduce pain
4. Yes. It provides a relaxing distraction
5. Yes. When I used to walk everywhere I was much better physically
6. Yes. My pony gives me a reason to go out and see places , I call him my legs.
7. Yes because otherwise I would become deconditioned and I would be less able to do everyday tasks. For example when I have a serious injury I wasn't able to move a lot which meant that the pain increased for months afterwards due to having to strength the muscles which I had lost
8. Yes I got my life back I can now swim 10miles plus breaststroke and have walked the 214 wainwrights twice since 2 major surgeries
9. Yes, it clears my mind and, if I'm in the right place, is a balm to the soul.
10. yes, stops you from sitting at home in your own bubble and can help reset your mind
11. Exercise is beneficial but I am punished for it afterwards with increase of pain
12. It does because improving fitness is especially beneficial for my condition. Even if I'm not "active" outdoors it's nice to enjoy a different environment
13. Definately. It really helps my mental health which i think is linked to coping with pain
14. Yes, I noticed that when I'm outdoors regularly exercising I feel better. Problem is when I'm flaring I am unable to go out as often
15. Yes, it is grounding. I feel peace in nature. I am able to be mindful.
16. Yes, as I become less stressed and anxious my pain lessen

Question 8

Have you tried forest bathing? (Shirin Yoku)

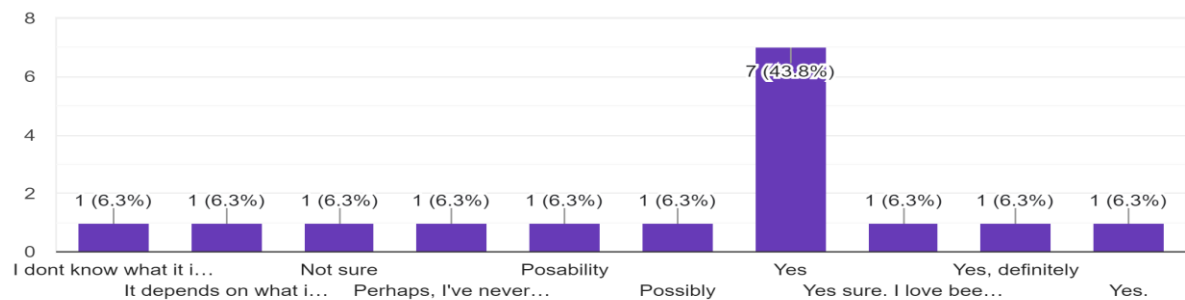
16 responses



Question 9

Would you be interested in undertaking a solo forest bathing experience?

16 responses



Appendix 2

Original Timetable

1. Create an advertisement and send it to the local CIC for distribution

1 Week

2. Read Forest Therapy and Forest Bathing guidebooks

1 Week

3. Create Forest Programme Schedule

1 Week

4. Collate replies, contact participants, arrange questionnaire, and interview timings and schedule facilities

1 week

5. Conduct questionnaires & allow for questionnaires to be returned

1-2 weeks

6. Forest Experience preparation and carry out

1 week

7. Write up findings and complete poster

1-2 weeks