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Freshwater Wild Swimming, Health and Well-Being: Understanding the Importance of Place and Risk

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Abstract: Spending time in or around bodies of water or 'blue spaces' can benefit human health and well-being. A growing body of evidence suggests immersion in blue space, e.g., participating in 'wild' swimming, can be particularly beneficial for both physical and mental health. To date, wild swimming and health research has primarily focused on the experience of individuals who swim in the sea. Empirical studies of the health-promoting potential of swimming in freshwater environments, such as lochs and lakes, are lacking, despite the popularity of this practice in many countries and the vastly different physical and hydrological properties of freshwater and coastal environments. The aim of this study was to explore the relationship between loch (lake) swimming and health and well-being for adults living in Scotland and determine the importance of perceptions of place and risk in this relationship. Semi-structured interviews were conducted with twelve wild swimmers who regularly swim in lochs in Scotland. Interview data were analysed thematically using Nvivo. The findings suggest loch swimming has a variety of health and well-being benefits that can be categorised over three domains of health: physical, mental and social. Of these domains, mental health benefits e.g., mindfulness promotion, resilience building and increasing one's ability to listen to their body, were particularly prominent. Our findings also highlight important physical and hydrological characteristics of loch environments, e.g., calm water conditions (relative to the sea), which contribute to positive wild swimming experiences. Finally, the perceived risks of loch swimming and mitigation strategies for these risks are established. Collectively, our findings further support the notion that wild swimming is a unique health-promoting practice. Our findings also highlight differences (in terms of experience and perceived risk) between swimming in freshwater and coastal environments, which can inform public health and water management policy.

Keywords: nature; blue space; lake; loch; mental health

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1. Introduction

There is growing recognition of the health-promoting potential of spending time in and around natural environments, such as bodies of water (e.g., lakes, rivers, canals and seas) or 'blue spaces' [1]. Blue spaces are defined as 'outdoor environments—either natural or manmade—that prominently feature water and are accessible to humans' [2]. A recent eighteen country study suggests visiting blue spaces is associated with improved mental health and well-being outcomes [3]. Living near blue space has also been associated with greater mental health and physical activity levels [4]. However, as blue-space visits often do not necessarily involve direct water contact, blue space and health research may somewhat overlook the unique health and well-being benefits offered by activities that involve immersion in water, e.g., swimming.

The health and well-being benefits of swimming are well established, and swimming is one of the most popular forms of exercise worldwide. Swimming has been associated with the prevention of diseases and promotion of health and well-being, whilst the non-weight-bearing nature of the activity makes it a highly suitable form of exercise for elderly adults and individuals with physical challenges [5]. Most evidence outlines the health and well-being benefits of swimming from a sports science perspective and predominantly focuses on swimming in indoor environments. There is also growing evidence that swimming in outdoor blue spaces, often termed 'wild' swimming, may be uniquely beneficial for health and well-being [6,7]. Throughout this study, 'wild swimming' refers to any full-body immersion in outdoor blue spaces.

In the last decade, wild swimming has rapidly grown in popularity. The growing popularity of wild swimming may be driven by an increasing focus on personal health and well-being and a growing desire to re-connect with nature [8]. Despite wild swimming growing in popularity, the notion that water immersion can benefit human health is not new. Aquatic environments were central to early therapeutic landscape research [9]. Furthermore, outdoor blue spaces were renowned for their healing potential in ancient Greek and Roman cultures, and coastal blue spaces have been associated with medicinal bathing for centuries [10].

In recent years, a growing body of literature has highlighted the health and well-being benefits of regular wild swimming. Innovative methods, such as swim-along interviews [11] and video diaries [12], have produced detailed insights into the wild swimming experience. A variety of qualitative accounts highlight the potential of wild swimming to promote, restore and maintain health and well-being. For example, wild swimming has been described as an accretive practice, where participation in wild swimming leads to heightened resilience, whereby individuals have an increased capacity to maintain health and well-being amidst physically and mentally challenging circumstances [13]. Participation in informal sea swimming groups is also recognised as being beneficial for mental health and contributing to healthy ageing [14]. Other studies suggest that sea swimming can cause transformative, connecting and re-orientating effects, resulting in positive changes to swimmers' minds, bodies and identities, which enables a sense of belonging and shifts perspectives of oneself and one's surroundings [7].

Quantitative evidence also highlights the potential health and well-being benefits of wild swimming. Participating in wild swimming has been associated with long-term reductions in depressive symptoms [15]. Regular wild swimming can reduce symptoms of negative mental health, e.g., by increasing positive mood states [16]. Winter wild swimming can result in physical benefits, including reduced fatigue and improved energy levels [17].

Despite an expansion of the evidence base linking wild swimming and associated health benefits, critical gaps in our understanding remain. To date, almost all wild swimming and related health research has focused on the experience of swimming in the sea. A similar sea focus is apparent in the wider blue space and health literature [18]. Freshwater and coastal environments differ in their physical and hydrological properties and their suitability for recreation and swimming. Furthermore, lake or loch swimming is popular in many countries including Finland [19] and Scotland—the focus of this study. Understanding the experience and potential health and well-being benefits of swimming in different geographies, such as lochs, offers an opportunity to broaden the current wild swimming and health-related evidence base and fully recognise the public health impact of wild swimming.

Although often health-promoting, swimming in outdoor environments carries a number of risks, which can lead to ill health or fatality [20–25]. Risk is an important component of the wild swimming experience and there are numerous accounts of wild swimmers discussing risks faced whilst sea swimming [6]. However, previous accounts of the risks of wild swimming are often sea-specific, e.g., exposure to dangerous sea wildlife [14]. Consequently, there is scope to widen the current understanding of the risks of wild

swimming to include freshwater environments, such as lochs. This is particularly important in Scotland, where recent data suggest differences in the mortality risk of coastal and freshwater environments [26].

To address the aforementioned knowledge gaps, this study aims to determine the health and well-being impacts of loch swimming and establish the importance of perceptions of risk and place in this relationship. Specifically, the objectives are to (i) determine the health and well-being impact of regular loch swimming across a sample of loch swimmers from central Scotland; (ii) establish how characteristics of place impact the loch swimming experience; and (iii) determine key risks and mitigation strategies related to loch swimming in Scotland.

2. Materials and Methods

2.1. Study Overview

This study adopted a qualitative research design to explore the relationship between loch swimming, health and well-being and determine the importance of perceptions of place and risk in this relationship. Semi-structured interviews were conducted with wild swimmers, who predominantly swam in freshwater lochs in Scotland. Interview data were analysed thematically in accordance with Braun and Clarke [27]. Ethical approval for this study was obtained from the University of Stirling General University Ethics Panel (reference: 1685).

2.2. Recruitment

Individuals who were 18 years old or above, resided in Scotland and currently participated in wild swimming were invited to participate in the research. An invitation to participate in a short survey followed by an online interview was distributed via a public Facebook group ('Wild Swimming—Scotland') in April 2021. Individuals interested in participating in the research were first asked to complete a short survey with a participatory mapping exercise, which was hosted by Maptionnaire. The survey had three key components: (i) demographic information (age, household income, gender); (ii) wild swimming background (frequency of participation in wild swimming, when first wild swim took place; typical wild swimming environment, e.g., loch, river or sea); and (iii) a participatory mapping exercise, where respondents were asked to pinpoint the location they swam most often and highlight areas where they typically entered and exited the water, a typical swimming route and areas that were considered dangerous or unsafe for swimming (see Figure 1). The short survey was used to gather background information and provided the basis for purposeful sampling for further interviewing based upon age, gender and typical swimming location.

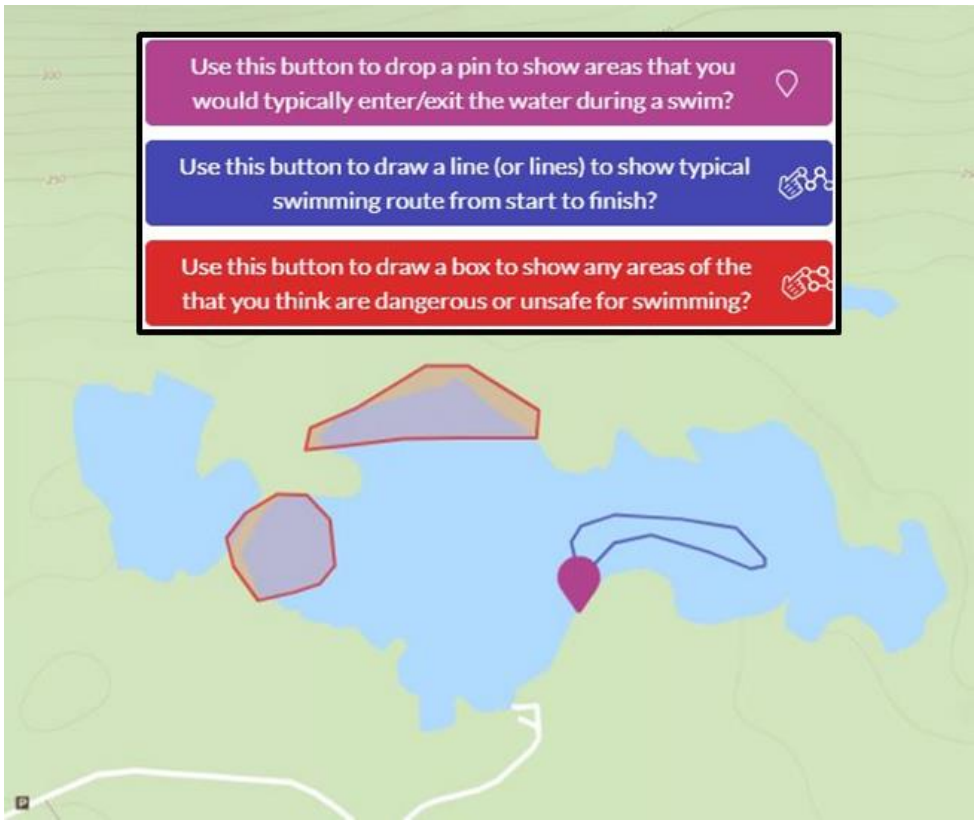

Figure 1. Example of participatory GIS exercise completed by participants prior to interview.

2.3. Sample

Semi-structured interviews were conducted with twelve wild swimmers who predominately swam in freshwater lochs. The sample consisted of seven women and five men, with most participants aged between 50 and 59 (n = 5). Participants were also aged between 18 and 29 (n = 2), 30 and 39 (n = 2) and 40 and 49 (n = 3). All participants predominately swam in lochs and had some experience swimming in the sea in Scotland. Most participants swam more than once a week (n = 8). Some participants swam once a day (n = 1), once a week (n = 2) and once every two weeks (n = 1). The length of time participants had swam varied across the sample, wherein half of the sample began wild swimming over five years ago (n = 6) and half began swimming in the last two years (n = 6). All participants resided in the Central Belt of Scotland—the collective term for Scotland's major population centres spanning three cities, Glasgow, Edinburgh and Stirling.

2.4. Data Collection

Semi-structured interviews were conducted between the 15 of April and 17 May 2021 via the videoconferencing platform Zoom (https://zoom.us/ (accessed on 25 April 2022)). Zoom offers a user-friendly platform that is highly suitable for conducting high-quality interviews, both from the perspective of the researcher and research participant [28]. Videoconferencing was preferred to face-to-face interviews to minimise geographical, financial and time-related barriers to participation in the study, and as some COVID-19 regulations were ongoing in Scotland, making face-to-face interviews logistically challenging. Sit-down interviewing was preferred to mobile methods such as 'swim-along' interviewing as our research questions predominantly focused on recalled experiences of previous swims and wider reflections on the health and well-being benefits and risks of wild swimming, rather than participant's moment-to-moment experience [11].

The semi-structured interviews were conducted by the lead author (CM) and lasted between 31 min and 58 min. CM has previously swum in both lochs and the sea; however,

is not a regular wild swimmer and, therefore, occupied both the roles of an 'insider' and 'outsider' in the context of this research [29]. A semi-structured interview guide was developed by the research team (Table 1). The interview guide consisted of four key themes: (i) background: developing a basic understanding of participants' wild swimming practice; (ii) health: determining how participating in wild swimming impacts each participant's perception of their own health and well-being, both positively and negatively; (iii) place: establishing factors leading to a preference for swimming in lochs and how participants' experiences of loch swimming compared to experiences of sea swimming; and (iv) risk: tetermining the importance of risk and risk management within each participant's wild swimming practice. Interviews were audio-recorded and transcribed verbatim by CM. Participants' names were pseudonymised, and wild swimming locations were removed to maintain privacy.

Table 1. Semi-structured interview schedule.

Theme	Open-Ended Question
Background	Can you start of by telling me about a typical day of wild swimming for you?
Background	When did you start wild swimming and how did you become interested?
Health	Do you think wild swimming has an impact on your health? If so, how?
Health	Have you noticed any changes in your health or your life since you started wild swimming?
Health	Thinking back to a recent swim, did you notice any changes to your physical or mental health after you completed the swim?
Health	Have you ever experienced any negative health impacts of wild swimming?
Place	You tend to swim mostly in lochs. Why is this and what do you like about loch swimming?
Place	How does swimming in lochs compared to swimming in the sea?
Place	Do you have a preference for swimming in lochs or swimming in the sea? Why is this?
Risk	Are you aware of the risks of wild swimming and how do these impact your experience?
Risk	How do you mitigate these risks?
Risk	How do the risks of swimming in lochs compare to sea swimming?

2.5. Data Analysis

Thematic analysis was conducted to identify patterns and themes within the interview transcript data. All analyses were carried out using NVivo 12 software. NVivo is a data analysis software that assists in the organisation and analysis of qualitative data. The analysis was conducted in accordance with the six phases of thematic analysis outlined by Braun and Clarke [27]. Firstly, CM read all transcripts thoroughly to become familiar with the data and noted some initial trends. Transcripts were then subject to detailed coding and codes were grouped collectively to form themes and subthemes (CM). Initial themes were shared with a section of the research team (CM, RF and DO) with anonymised quotations from the transcripts. The definition and content of each theme were discussed between the research team to ensure rigour was achieved within the analysis. Finally, the research team selected a range of quotations best suited to represent each theme.

3. Results

The following section focused on the five central themes of this research: physical health, mental health, social health, place and risk. Several key subthemes are presented and discussed. Health-related themes align with the World Health Organisation (WHO) [30] definition of health: 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.'

3.1. Physical Health

Several participants suggested that regularly participating in loch swimming provided benefits for their physical health. These benefits were primarily related to improved fitness, recovery from physical injury and health promotion during ageing.

3.1.1. Promoting Fitness and Recovery

A number of participants suggested swimming benefited their fitness. For example, James highlighted the benefits of loch swimming for his general fitness and flexibility, whilst also noting that if he is unable to swim for a period of time, he notices adverse impacts on his health:

> *'It keeps me fitter and stronger and more flexible… I know that if I don't get out and swim, I'm going to be sloppy and run down a bit.'* (James)

In some cases, participants perceived these healing effects to be because of immersing themselves in cold water, which has been shown to reduce muscle soreness [31]. However, in other cases, the physical demands of swimming resulted in the re-strengthening of participant's bodies over time:

> '*I had a car accident eight years ago and I've had back issues ever since… when I first started, it initially it increased my use of painkillers, but after about six months, I completely stopped taking them basically and it was mainly because it just strengthened my core muscles.'* (Janet)

Janet's experience demonstrates the potential of wild swimming to contribute toward the restoration of physical health and recovery from ill health [13].

3.1.2. Enabling Healthy Ageing

Some participants suggested that regular loch swimming assisted in age-related health issues. In some cases, this was related to feeling able to exercise again despite health and age-related issues limiting their ability to take part in other forms of exercise. Phil, who had recently suffered a series of heart attacks, suggested that swimming offered an alternative form of physical activity to replace other exercise that was too challenging for him during his heart attack recovery period. Loch swimming also provided respite from his current physical limitations:

> *'When you've got your head in the water it takes my mind off, you know, not being able, because I'm still too heavy to run at the moment and I wouldn't be confident running.'* (Phil)

The presence of blue space is often associated with the promotion of physical activity [18]. However, in many instances, water not only promotes physical activity, but enables physical activity [13]. The buoyancy of water means swimming is a non-weight bearing form of physical activity and has, therefore, proved highly suitable for elderly adults and individuals with health-limiting conditions [5]. As such, numerous accounts highlight the notion of an 'unhealthy' body on land, transforming into a 'healthy' body when swimming in water [6].

Furthermore, some participants believed that regular loch swimming 'eased' several menopausal symptoms. Rachel was unsure if this easing was related to the physical or mental impact of loch swimming:

> *'I've been having menopausal symptoms for maybe about two years, with sort of night sweats and hot flushes and mood swings and I think the wild swimming has, it's hard for me to say if it's been a physical or a mental thing, but I feel that my symptoms have eased.'* (Rachel)

Some anecdotal evidence also supports the notion of wild swimming easing menopausal symptoms. For example, a group of wild swimmers from near Swansea, Wales have reported reductions in menopause-related high temperatures, night sweats and

anxiety [32], and randomised controlled trials have found that swimming can reduce most of the physical and mental symptoms of premenstrual syndrome [33]. Collectively, the physical health benefits experienced among older respondents, suggest loch swimming can, like sea swimming, promote fitness, physical recovery and healthy ageing [14].

3.2. Mental Health

Most participants suggested mental health and well-being benefits were the most important outcome of their loch swimming practices. Mental health and well-being benefits were more prominent in health-related discussions than physical and social health benefits.

3.2.1. Stimulating Positive Emotions and Happiness

Many participants spoke of the positive emotions they experience whilst participating in loch swimming. These positive experiences have been highlighted previously in accounts of sea swimming [34]. Sarah reflected on the happiness she feels when in water and suggested that blue spaces were environments where she felt comfortable:

> *'I'm really comfortable in water as well and it's just quite a nice environment for me, I guess it's just somewhere I feel happy. Like when I go swimming, when I'm in water, I feel probably like my happiest and so that's kind of the reason I do it.'* (Sarah)

The enjoyment of wild swimming is often a key motivation for taking part in the activity [35] and people tend to be happier when in or near blue spaces [36]. Gould et al. [37] suggest the happiness generated from wild swimming can go beyond the swim itself, and enjoyment is generated in other elements of swimmers' lives, e.g., during the preparation for a swim. The happiness or 'buzz' that was experienced during loch swimming also extended beyond the swim itself. Some participants suggest these positive emotional responses are extended throughout one's day or even longer-term:

> *'It just makes me smile, I can't tell you how (why). It makes me so much happier through the day'* (Rachel)

Phil, who, as noted previously, lost confidence and motivation in life due to ill health, suggested that loch swimming played a critical role in providing him with a more positive outlook on life:

> *'The swimming has just given me a buzz. Just to get back going again, you know. Positive, positive mind-set, that's what it's given me… I think the swimming is the trigger, that's what's triggered the positive mind-set'* (Phil)

This 'buzz' has also been noted among participants of water-based exercise, often after a challenging task is completed and a sense of achievement is generated [38].

3.2.2. Promoting Mindfulness and Restoration

Many participants highlighted that loch swimming provided opportunities to be mindful and peaceful. Interestingly, some participants spoke of the notion of forced mindfulness, where the practice of loch swimming and the physical challenge of safely immersing oneself in cold water, forced the need to *'be present'*:

> *'It makes you switch off from what's going on… It's not a conscious decision to switch off from the stresses, I just think it makes you switch off from them because your body is having a bit of a physical adjustment to the cold water. So I don't know if that's just because, you know, it means you have to focus on something else other than your worries.'* (Rachel)

Tracy also suggested that being mindful and present in blue space was not a choice, but a positive consequence of the environment that you are immersed in:

'You have to be present. Like it's like the most mindful experience ever … you don't have time to think about how you feel before you don't have time to think about what's going to come after. It's like you're so present.' (Tracy)

Similar meditative states have been experienced in qualitative accounts of other blue-space immersions, such as scuba diving, where participation can lead to a clarity of thought and a focus on one's breath [39]. Swimming is a rhythmic form of exercise, and the need to focus on breathing and stroke [40] may also explain the meditative-like experience of loch swimming. Furthermore, the meditative potential of swimming appears to be heightened by exposure to cold water and exposure to nature, which has been shown to enhance mindfulness [41].

Several participants suggested loch swimming was a time for 'switching off' and reflection:

'It's time on your own. It's time to either just completely switch off or allow yourself time to think about things and kind of muddle through stuff in your head.' (Linda)

These accounts aligned closely with the concept of 'being away', which is central to Attention Restoration Theory (ART) [42]. Being away refers to a break from one's daily routine, activities and demands that cause attention fatigue. Consequently, being away can lead to cognitive restoration and recovery from attention fatigue [42]. Views and sounds of water are perceived as highly restorative environmental characteristics [43], and the restorative potential of these characteristics appears to be heightened during loch swimming.

3.2.3. Stress Reduction, Coping and Building Resilience

For some participants, loch swimming helped during periods of mentally ill health or stress. Linda, detailed how her loch swimming relieved stress at the end of the week:

'It's just a de-stress. It's a coping mechanism. But it's a definite de-stress for me at the end of the week… and it's not the same getting into a chlorinated pool as you just feel like a ping pong ball.' (Linda)

Janet spoke of a more instantaneous mental relief as a result of loch swimming:

'If I'm having like a bad day or anxious about something then after the swim, that kind of disappears.' (Janet)

Failure to cope with physical and mental stressors can lead to ill health [44], and natural environments can provide highly suitable settings for stress recovery and coping with stress [45]. Stress reduction is hypothesised as a key pathway by which blue-space exposure can improve health and well-being [43]. Indeed, Stress Reduction Theory [46] proposes that exposure to natural environments, particularly those with water, can increase one's ability to recover from stress. Furthermore, wild swimming may enhance stress reduction as a result of the euphoria experienced by participants [47]. Wild swimming, particularly in cold waters where the body is exposed to stressful conditions, may also build resilience to physical and mental stressors [48]. Interestingly, one participant spoke of the resilience generated not only by her loch swimming practice but by the knowledge of having the opportunity to engage in loch swimming in the future:

'*You're going to get to the water again, you're going to feel that again so you can hold on through whatever hardship you're going through, because you know that the water will reset. It's kind of it's like really a reset process.'* (Tracy)

The notion of wild swimming promoting resilience has been highlighted in a number of accounts of sea swimmers [14,34]. Foley [6] describes building resilience as an accretive process, whereby each swim adds an additional layer of resilience to produce a growing and more resilient mental well-being. It has also been suggested that swimmers derive mental strength from the challenge of wild swimming, which provides psychological resilience and confidence to tackle challenging life problems [7]. Participating in adventurous forms of physical activity, which involve exposure to physical and mental

stressors, such as wild swimming, can therefore build a 'mental toughness', which can benefit mental health [49].

There were a number of participants who described loch swimming as an important and beneficial component of their life, and some referred to their swimming practice as a '*rock*' in their life. This was particularly true for participants who suffered from mentally ill health or had suffered grief in recent years:

> *'It (wild swimming) keeps me on a level pegging and maintains my balance sort of thing mentally as well. And because we've been through quite a lot over the last couple years, so it has given me a bit of stability.'* (Tony)

The notion of stability and balance provision are corroborated by survey research that suggests increasing one's ability to carry out day-to-day tasks is a key motivation for wild swimming participation in the United Kingdom (UK) [35]. Stability may be provided by the provision of routine and purpose because of participating regularly in wild swimming [14]. However, the habitual nature of wild swimming participation can also lead to adverse health and well-being impacts if participants are unable to swim [6]. For example, James discussed the negative impact of a period in which he was unable to swim:

> *'I couldn't swim much I was going through a rough patch because my father just died and I really missed getting in the water because that's my form of exercise to deal with stresses of daily life… I found it really tough to miss the water. If I don't swim three times a week, four times a week, I notice the adverse impact that has on me.'* (James)

3.3. Social Health

Socialising and interacting with other swimmers were highly important and beneficial aspects of loch swimming, and many participants spoke of the '*supportive*' and '*welcoming*' nature of the wild swimming community in Scotland.

3.3.1. Shared Experience

Several participants described positive shared experiences during loch swimming. These experiences were pre-, during and post-swim. Janet provided an example of the shared experience of entering a loch prior to a group swim, highlighting the enjoyment of a shared feeling of shock from exposure to cold water:

> *'It's nice to see everybody and you just ask everybody how they've been? And it's always fun getting in the water because it's that bit a shock and usually we're giggling and laughing and making funny noises and then you go for a swim.'* (Janet)

Sharing the challenge of wild swimming can enhance the experience for those involved [14]. Janet also provided an example of how immersion in water can promote fun and playful behaviours, which may be explained by immersion in water evoking childhood memories and childlike behaviours [13]. Indeed, the motion and movement of water can stimulate play [7].

Positive social interactions were not limited to before or during swims. Many participants spoke of post-swim activities, which were often pre-arranged as part of a weekend swim. The post-swim culture was highlighted regularly as an important component of the loch swimming experience. For example, James speaks of the importance of post-swim socialising to his group:

> '*One of the key features of it is the post swim, get together, we always have a chat and you find a coffee shop if you can. A cafe has some cake, coffee, and just catch up with people and that's a vital part of the whole experience*.' (James)

Many participants suggested that the social component of their loch swimming experience outweighs the importance of the swim itself.

3.3.2. Unique and Negative Social Interactions

Social interactions positively impacted most participants' loch swimming experiences. However, some participants highlighted 'unspoken rules' of their swimming interactions. For example, Tracy, suggested that whilst she enjoyed the social element of swimming, she preferred swimming with people who were not overly talkative and allowed her to enjoy her own experience:

> *'I like to be alone… it's kind of a meditative experience for me, like I need it to be just me in the water. So yeah, I try to go with people who don't speak too much when they're in the water.'* (Tracy)

Moles [50] suggests traditional forms of communication and interaction change during swimming. This type of unique interaction is described by Kevin:

> *'There is a bond there when you're swimming that isn't necessarily through talking'* (Kevin)

Finally, although the majority of loch swimmers highly valued the social component of their loch swimming practice, socialising and the influence of others could also negatively impact a swimmer's experience:

> *'Sometimes like I've had a swim that felt kind of disconnected and I didn't feel like I got all the benefits because I was maybe like chatting a pile and there was loads of people around and you get a bit self-conscious about whatever, like your bikini body or whatever.'* (Lucy)

3.4. Place

Participants described a number of important components of place that positively impacted their loch swimming experiences. Four key place-related themes emerged from the interviews: (i) Calmness and stillness; (ii) feeling in control; (iii) enhanced connection to nature; and (iv) freshwater.

3.4.1. Calmness and Stillness

Numerous participants highlighted their preference for calm water conditions when swimming in lochs and believed this improved their swimming experience. Generally, participants also perceived the wider environment surrounding the lochs that they swim in to be calm and tranquil. Sarah suggested swimming in calm water conditions improves her experience:

> *'Having that kind of calm and stillness is something that I feel for me, makes it so much more enjoyable.'* (Sarah)

Lochs are likely to be calmer and stiller than other blue spaces, such as rivers and the sea, where flow and tides are present. These somewhat unique still-water conditions were discussed by a number of participants and the still water surface was often referred to as '*glass*'-like. Still conditions appeared to contribute to the mental health and well-being benefits previously discussed. Some participants found calm water conditions better for facilitating relaxation as less planning or safety considerations were required:

> '*If the waters a little bit choppy, your mind gets taken away to other things like your safety in the water and other things and fight against the waves and the current and the weather elements. But see when it's nice and flat, you just feel so relaxed*.' (Tony)

Tony also suggests the stillness and calmness of water conditions enhance the relaxation benefits attainted during loch swimming:

> '*As soon as I get in the water at Loch [X] and it's a nice day, there no rain, there's no wind, the water is flat, like silk, like diving into glass more or less, it just relaxes my mind*.' (Tony)

In many cases, the '*breaking glass*' moment, where a swimmer enters the loch and breaks the stillness of the surface water, appeared to be a distinct starting point for relaxation.

3.4.2. Feeling in Control

When considering loch swimming relative to their sea swimming experiences, several participants suggested that they felt a greater feeling of control due to calmer water conditions when loch swimming. For example, Sarah described her preference for loch swimming due to feeling in control when entering the water:

> '*I actually quite like lochs because they're less likely to have big waves as you're obviously going out. Whereas obviously when you're going into the sea, there's waves coming over you quite often and I've never really liked that because I quite like being in control when I'm going into the water and letting myself warm up gradually*.' (Sarah)

Sarah also suggested that feeling in control in the sea was less common due to the conditions she faced when sea swimming. This feeling of control was deemed an important component of her experience:

> '*A big thing for me is feeling like I'm in control of what I am doing whilst I'm in the water. Which I feel like when I'm in the sea, and when I'm somewhere with a strong current or tide I don't really have that opportunity to feel like I'm in control. Whereas in a loch I do.*' (Sarah)

Participants often suggested that the feeling of control was a result of lochs being 'contained' spaces, where the boundaries of a loch were normally visible, unlike the sea. Feelings of control and containment are associated with indoor pool swimming [40], and wild swimmers often prefer the wildness of the sea relative to indoor pools, which can be perceived as overly calm, artificial and controlled [14]. Exposure to the harshness and energy of the sea often contributes to positive wild swimming experiences by providing challenging circumstances for swimmers to overcome [13]. Enjoyment due to the challenging nature of loch environments was also demonstrated by some of our participants; however, many also enjoyed feeling a degree of control, which they did not believe could be obtained in the sea. Participants simultaneously seeking a degree of wildness and a degree of control challenge the traditional indoor vs. outdoor swimming narrative and suggest more nuanced preferences for swimming environments exist.

3.4.3. Enhanced Nature Connection

Experiencing a heightened connection to nature was observed by the majority of participants when loch swimming. This was often described as an increased closeness to nature, or in some cases, feeling part of nature:

> '*I think with the swimming you feel like you're in nature rather than I don't know, I feel more of a part of it*.' (Emma)

> '*I think you feel as though you're closer to nature, you're immersed in it in a medium like water. So, I feel closer to nature*.' (Colin)

Qualitative accounts suggest an enhanced connection to nature is obtained during sea swimming [34]. An enhanced connection to nature has been associated with improved mental well-being [3] and may, therefore, partly explain some of the mental well-being and mindfulness benefits discussed in Section 3.2.2. Indeed, wild swimming can enhance one's ability to achieve mindfulness, whilst being mindful can increase one's connection to nature [41]. Wild swimming is an intense multisensory activity [7], and fully-body immersion in water may stimulate a unique nature engagement that is distinct to that experienced during other activities and forms of exercise.

Some participants described a connection to nature that goes beyond the loch and extends to the wider landscape and surrounding green spaces:

'There's hills and trees and stuff everywhere and it's just green and I love the scenery and I love being able to just kind of lie back in the water and just like take in my surroundings.' (Sarah)

As highlighted by Sarah, loch swimming provided opportunities to experience nature in ways distinct from the norm, e.g., obtaining close views of wildlife in the water or swimming to small islands where a new view of the surrounding Scottish mountains could be observed. This is somewhat unique to inland water bodies as these can be physically surrounded by nature and green spaces. The surrounding green space is less likely in coastal blue spaces given the magnitude of water and composition of coastal landscapes. The lochs in which the majority of our participants swam tend to be surrounded by woodlands and vegetation, providing a combined experience of blue space, with a backdrop of green space. This blue–green combination has been shown to be more restorative than exposure to blue or green space independently [51] and may partly explain the enhanced connection to nature experienced during loch swimming.

3.4.4. Freshwater

Although Scotland has an array of sea lochs, all participants regularly swam in freshwater lochs. The presence of freshwater emerged as an important component of place that positively influenced some participants' wild swimming experience. Some participants noted a general dislike for saltwater and a preference for freshwater:

'*If you get splashed in the face, loch water doesn't sting your eyes, doesn't taste disgusting*.' (Janet)

This preference for freshwater was highlighted by a number of participants. In other instances, freshwater allowed swimmers to experience a greater challenge. For example, James described freshwater as less buoyant than seawater, thus providing an opportunity to improve his swimming technique and challenge himself:

'*I like that it's freshwater so if you get thirsty, you can have a drink. And just the challenge of swimming in freshwater because it's more difficult in fresh water that salt water because you've got less buoyancy*.' (James)

Challenging experiences in blue space can contribute to improved enjoyment and enhanced well-being [52]. A similar trend was also highlighted among water-based exercise participants, whereby a preference was observed for environments that allowed participants to challenge themselves to go beyond their comfort zones and improve their ability [38]. Loch swimming offered the challenge of reduced buoyancy but also was deemed by many as less risky and less challenging than sea swimming due to the presence of calmer water conditions.

3.5. Risk

All participants appeared to be highly aware of the risks of wild swimming. In response to questions related to risk, a number of key risks and mitigation strategies were highlighted. Some of the risk discussions were directly related to loch swimming and others relative to sea swimming.

3.5.1. Cold Water Exposure

Several participants highlighted cold water as a key risk of loch swimming. Over half of the participants had experienced negative health responses because of overexposure to cold water, such as cold-water shock. Exposure to cold water can cause a serious risk to health due to progressive hypothermia or a decrease in swimming performance, which can lead to drowning [53]. Many participants spoke of the need to understand and listen to their bodies to monitor their reaction to the cold:

'*I'm always a little bit afraid of the cold water… you've got to keep an eye on how long you're in (water) for and how your body is reacting*.' (Janet)

Swimmers also discussed a growing awareness of their '*limits*' as they became more experienced, often drawing upon incidents of overexposure to cold water or 'near misses'. The notion of increased awareness of risk and the ability to listen to one's body advances Foley's [13] theory of accretion, whereby one's ability to listen to their body and protect their health also grows with each swim. Although noted here as a risk-mitigation technique, the need to listen to one's body and breathing aligns closely with mindfulness and meditation and exemplifies the close connection between risk and health benefits experienced during wild swimming.

The risk of cold water often resulted in the adaption of swimming routes and routines. For example, James suggests swimming in lochs with multiple exit points during wintertime to ensure easy access if the body reacts negatively to cold temperatures:

> '*In the wintertime, we would particularly choose places to swim, where there's lots of exit points. So if you get into trouble, you can get out easily. We won't swim too far from shore, we might, we might go 15 min from shore, for example, because we know that in the wintertime, you can quickly get cold and you'll have trouble swimming*.' (James)

This type of pre-swim planning was common among most participants. Participants also described pre- and post-swim rituals that aimed to minimise the risks of cold water, including route planning and following an efficient strategy of warming up, such as preparing warm drinks and clothes and easy access to a car. Participants also relied on the support of others to minimise risk by swimming in a group or bringing along a friend or family member to accompany them from the lochside.

3.5.2. Other Loch Users

Another major perceived risk of loch swimming was other loch users, particularly in motorised vehicles, such as boats or jet-skis. Boat traffic was also a major concern among wild swimmers across the UK [35]. Three of the twelve participants described incidents where they were nearly struck by motorised vehicles during a loch swim. As such, maintaining an awareness of potential traffic was an important consideration for many participants:

> '*If you're crossing a big body of water, you're always conscious about traffic. Keeping an eye out for that, and your ears work pretty well to hear in the engines and jet skis*.' (James)

Most participants swam with a toe-float to increase visibility to other loch users. Toe floats are small reflective buoyancy aids that can be attached to a swimmer's ankle and are popular for reducing a variety of wild swimming risks by increasing visibility and providing additional buoyancy support in emergencies.

3.5.3. Site Selection

Carefully selecting where to swim, both in terms of loch selection and areas within a selected loch, was another key strategy for ensuring safe wild swimming. This selection process often involved relying on the experiences of other wild swimmers, either through personal communications or through social media:

> '*I always swim places that I know are popular that people swim, we don't just swim somewhere random*.' (Karen)

Social media also played an important role in understanding developments in water quality. For example, Janet regularly uses social media to gather updates about blue–green algae in the loch that she swims in:

> '*A lot of people post things on Facebook, there's a thing called blue green algae and you can look out for that. They'll post pictures of it and people say that they've been there and walk and they've seen it there, so I would avoid that for a while*.' (Janet)

Generally, water quality was not deemed a major risk among participants, and loch water in Scotland was perceived as 'clean'. This is in contrast to the findings of Wood et al. [35] who suggest water quality is rated as the most concerning ecosystem disservice among wild swimmers in the UK.

3.5.4. Loch Risk Relative to Sea Risk

Generally, participants believed the risks of swimming in the sea exceeded those of swimming in lochs. The overarching reason for this belief was the harshness of sea conditions in Scotland and the potential for these conditions to change rapidly:

'*I think conditions can change a lot quicker in the sea than they can on a loch*.' (Colin)

'*I think swimming in lochs is a bit safer than swimming in the sea and swimming and rivers and stuff, because I know they're still currents and stuff in lochs, but they're never anywhere near as strong as in the sea or in rivers*.' (Sarah)

Although participants believed that swimming in the sea was more dangerous than swimming in lochs, all made clear that any water body could potentially be a dangerous environment. This is summarised by Janet:

'*I think the main thing was swimming in the sea is the fact that the ocean is just so giant. It's something that I think I would always say people need to respect the water regardless of whether they're getting into a swimming pool or the ocean, but the ocean is just, it has a mind of its own and it can change in a heartbeat*.' (Janet)

Some participants noted fear of the sea and suggested that this fear influenced their decision to swim in lochs. However, others suggested that they would swim in the sea more often if they lived nearer, despite believing loch swimming was safer. There was also a perception among participants that sea wildlife created an increased risk for health. In particular, the risk of encountering jellyfish was highlighted by a number of participants, whilst busy seaside hotspots were off-putting due to an abundance of other water-users and boat traffic.

4. Conclusions

The findings of our study suggest participating in loch swimming may provide a wide variety of physical, social and mental health and well-being benefits. Although described as distinct health and well-being benefits in our research, these benefits are often interlinked and complementary. Mental health and well-being benefits, such as enhancing mood, increasing mental resilience and reducing stress, were the most prominent benefits reported among the loch swimmers interviewed in our study. The wider social benefits that accompanied loch swimming were often considered more important than the swimming experience itself. Several participants appeared to use loch swimming to assist in their recovery from physical and mental ill health.

Generally, the health and well-being benefits obtained from loch swimming align closely with previous studies focusing especially on the health and well-being impacts of sea swimming. Despite similarities in the resultant health and well-being benefits, the experience of loch swimming and sea swimming have some distinctions. Loch conditions, which, in the experience of the loch swimmers considered in our study, tend to be calmer than the sea, offer a unique opportunity to swim in still water, which can increase a swimmer's feeling of control, safety and relaxation. Indeed, participants often suggested swimming in still-water conditions was particularly relaxing and calming. Participants also suggested an enhanced connection to nature when immersed in loch environments due to being surrounded by nature and green space, which is unlikely during sea swimming. However, the most notable difference between loch swimming and sea swimming was in relation to risk. All participants perceived loch swimming to be safer than swimming in the sea due to the harshness and unpredictability of sea conditions.

The participants interviewed in this study appeared to be highly aware of the risks of wild swimming, although there remains scope to increase participants' awareness of the risks of exposure to poor quality water. Despite generally high risk awareness in our sample, the risk of illness and fatality as a result of wild swimming remains a growing public health concern as wild swimming becomes increasingly popular. A number of recommendations to minimise the risks of wild swimming arose from this study. Firstly, the consideration of place is crucial to effectively manage the risks associated with wild swimming. The consideration of place in relation to wild swimming risk management should be multi-scale and focus on the varying risks of swimming in different blue space types, e.g., lochs, rivers and seas, the varying risks associated with individual catchment areas and the place-related risks of each swimming location. Failure to adequately consider place in risk management may lead to over-generalised safety guidance and low compliance with this guidance among wild swimmers. For example, participants in our study often noted that a failure to provide place-specific guidance, e.g., exactly where algal blooms occurred in a particular loch, leads to guidance being ignored. Secondly, there is a need to increase public education on the risks of wild swimming and the mitigation strategies for these risks. This is particularly relevant in Scotland, where swimming is not an element of the school curriculum, unlike in other parts of the UK [26]. Targeted education campaigns for novice wild swimmers may be particularly valuable given the growing popularity of the activity and the importance of wild swimming experience in managing risk. Thirdly, there is an opportunity to better combine the expertise of organisations involved in the management of water bodies and the expertise of the wild swimming community. Innovative citizen science methods, such as interactive mapping of real-time risks by combining wild swimming social media data, local knowledge and water management expertise may offer synergistic benefits that exceed the outcomes of current risk-mitigation strategies.

When risk is adequately considered, wild swimming offers an opportunity to promote public health, particularly for individuals suffering from physical and mental ill health. Wild swimming is often described as an inclusive activity because individuals with limited physical mobility can be enabled to exercise due to the generally welcoming nature of the wild swimming community. However, moving forward, there is a need to challenge this notion of inclusivity and address barriers to wild swimming participation. Inequalities in blue-space usage and access are well established, and the historical, social and political context of blue spaces can lead to significant barriers to usage among different demographic groups [54]. Furthermore, socioeconomic and racial inequalities in swimming ability [55] will likely impact wild swimming participation. Finally, many risk-mitigation strategies to ensure safe wild swimming (e.g., access to a wetsuit or toe float) involve some financial cost. Consequently, there is a need to not only consider the inclusivity of wild swimming but the inclusivity of safe wild swimming. Addressing issues related to risk and equity offers scope to broaden the public health benefits of wild swimming and ensure wild swimming is available and safe for all.

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