

# ULRR

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Item Type	Article
Authors	Flynn, K;Murray, O.;O'Regan, Andrew;Hayes, Peter;Casey, Monica;Glynn, Liam
Citation	Irish Medical Journal, 2023, 116, 9, P851
Publisher	Irish Medical Organization
Download date	2026-04-15 10:42:40
Item License	<a href="https://creativecommons.org/licenses/by-nc-sa/4.0/">https://creativecommons.org/licenses/by-nc-sa/4.0/</a>
Link to Item	<a href="https://doi.org/10.34961/researchrepository-ul.28008935">https://doi.org/10.34961/researchrepository-ul.28008935</a>

## Cold water swimming and its potential health benefits: a qualitative study of participants' views and experiences

K. Flynn<sup>1</sup>, O. Murray<sup>1</sup>, A. O'Regan<sup>1</sup>, P. Hayes<sup>1</sup>, M. Casey<sup>1,2</sup>, L. Glynn<sup>1,2,3</sup>

1. School of Medicine, University of Limerick, Limerick, Ireland.
2. Health Research Institute and SLÁINTE Research and Education Alliance in General Practice, Primary Healthcare and Public Health, School of Medicine, University of Limerick, Limerick, Ireland.
3. HRB Primary care Clinical Trials Network Ireland.

### Abstract

Cold water swimming is a popular activity enjoyed by a variety of individuals and has a particularly strong following along the west coast of Ireland in both rural and urban settings. At present there is limited research available that explores the perspectives and experiences of cold water swimmers.

#### *Aim*

To explore participants' views and experiences of cold water swimming and its potential health benefits.

#### *Methods*

Data were collected using semi-structured one-on-one interviews on a sample of cold water swimmers, recruited by an online survey. Interviews were digitally recorded and were transcribed for analysis. Interviewing continued until data saturation was reached. Framework analysis was utilised to analyse the data and NVivo 10 software used to organize and code the transcripts to facilitate this analysis.

#### *Results*

A total of 10 participants were interviewed. Three main themes emerged from the data analysis: transforming mood; impact on the physical form; and encouraging community engagement, all of which to be inter-linked. Cold water swimming participation appeared to improve the overall mood and physical well-being of the swimmers.

#### *Discussion*

This study highlights the potential benefits to be gained by participating in cold water swimming. All participants perceived swimming as an essential part of their routines and cited multiple ways in which cold water swimming impacts their lives in a positive way.

Our study has emphasized the value that cold-water swimming can have in terms of mental and physical health from the perspective of swimmers themselves.

## Introduction

Cold water swimming involves swimming in water normally all year round and has become increasingly popular in the last number of years in Ireland and indeed globally. The act of cold water immersion appears to invoke a strong sense of community and shared appreciation for nature and the sea.<sup>1</sup>

Exposure to physiological or psychological stress can activate the “stress response” which is important in regards regulating health and disease.<sup>2 3</sup> Exposing the body to cold temperature has been used by cultures all around the world since ancient times as a form of health intervention. More recently the physiological impact of cold water swimming has begun to be elucidated.<sup>4</sup> Cold water therapy has been shown to have physiological effects across all the major systems, improving immunity, metabolic, cardiovascular and neurological health<sup>5</sup>.

Recent studies have suggested that cold water swimming has a positive impact on our mental health and well-being<sup>6-8</sup>. Cold water swimming can lead to improved energy levels, mood and decrease levels of stress and fatigue<sup>9</sup> and has been reported to successfully treat major depressive disorder (MDD).<sup>7</sup> Cold water immersion leads to a reduction in certain cytokine responses causing a down-regulation of pro-inflammatory mediators. A reduction in these mediators is thought to lead to an increase in serotonin levels which could explain how cold-water immersion can reduce symptoms of MDD as mentioned above.<sup>4</sup>

In addition to this, it has been noted that cold water swimming can have a beneficial effect on our physical health. It has been reported that winter swimmers have higher functioning immune systems, lower levels of stress and are less likely to develop infections and certain illnesses.<sup>10 11</sup>.

Cold water swimming appears to confer health and well being benefits but very little research is available to date on the experiences and perceptions of swimmers themselves. Therefore the aim of this study is to address this evidence gap by exploring participants’ views and experiences of cold water swimming and its potential health benefits.

## Methods

### Design

This study employed a qualitative design, using semi-structured, one-on-one interviews.

### Recruitment of interview participants

Participants were first recruited using an online survey where there was an option to express interest in partaking in the interview process for the current study. Those who expressed interest were contacted by email, the study was explained and they were given time to consider participation. If they agreed to participate they were provided with a consent form and a data protection form to sign. Of those whom expressed interest, purposive sampling was used to select participants in order to ensure a good distribution of age, gender and swimming frequency. Recruitment continued until data

saturation was reached and no other themes emerged from analysis. We conducted two more interviews after this point in order to confirm data saturation.

## Interviews

Interviews were conducted using a semi-structured approach.<sup>12</sup> The topic guide was designed based on a literature review and was piloted before being finalised. (Table 1) All participants gave permission for their audio files to be recorded and transcribed and for the use of anonymised quotes in this paper. Transcripts of the interviews were reviewed by two researchers independently to enhance reflexivity.<sup>13</sup>

Table 1. Topic guide for Interviews

1. Can you tell me why you started cold water swimming? How long have you been swimming during the winter months?
2. How often would you go swimming? Would you go alone or as part of a group?
3. How would you describe your overall health at this moment?
4. What benefits do you think the swimming has and equally are there any disadvantages?
5. What impact do you think swimming has had on your overall health and wellbeing? (tell me more)
6. Can you tell me any negative impacts swimming has on your health and wellbeing? (tell me more)
7. Can you tell me any positive impacts swimming has on your health and wellbeing? (tell me more)
8. Have you any underlying or chronic health conditions? (move on if reluctant to answer)
9. How often do you attend your GP or avail of any other health care services?
10. How often would you get a cold/cough? And how severe are they when you get them?
11. How would you describe your overall mood?
12. How would you describe your overall energy levels?
13. Besides swimming what other forms of regular physical activity do you undertake?
14. Would you recommend cold water swimming as an activity for others to partake in?

## Data Analysis

For data analysis, we used a six step process of thematic analysis involving familiarisation, code generation, search for themes, define themes, review of themes followed by the write up.<sup>14</sup> Interview transcripts and codes were then sent to two members of the research team (KF and OM) for review and the final themes were subsequently agreed.<sup>15</sup> NVIVO 2020<sup>16</sup> was used for coding of the transcripts and to facilitate thematic analysis.<sup>17</sup>

## Results

In total, 10 semi-structured one-on-one interviews were conducted. The ages of the cohort ranged from 22 to 75. All participants swam all year round with swimming activity ranging from quick dips to over 25 minutes in the cold water.(Table 2)

Table 2. Interview participants

Participant	Age	Gender	Swimming Frequency
Participant 1	75	Male	daily
Participant 2	45	Female	2-3 times weekly
Participant 3	37	Female	Once weekly
Participant 4	46	Male	2-3 times weekly
Participant 5	36	Female	Daily
Participant 6	52	Female	Daily
Participant 7	26	Male	2-3 times weekly
Participant 8	59	Male	Daily
Participant 9	22	Female	Once weekly
Participant 10	33	Male	2-3 times weekly

Analysis of the data yielded three main themes with several sub themes which are summarized in Figure 1. The three main themes were mental health and well-being, impact on the physical form and community engagement

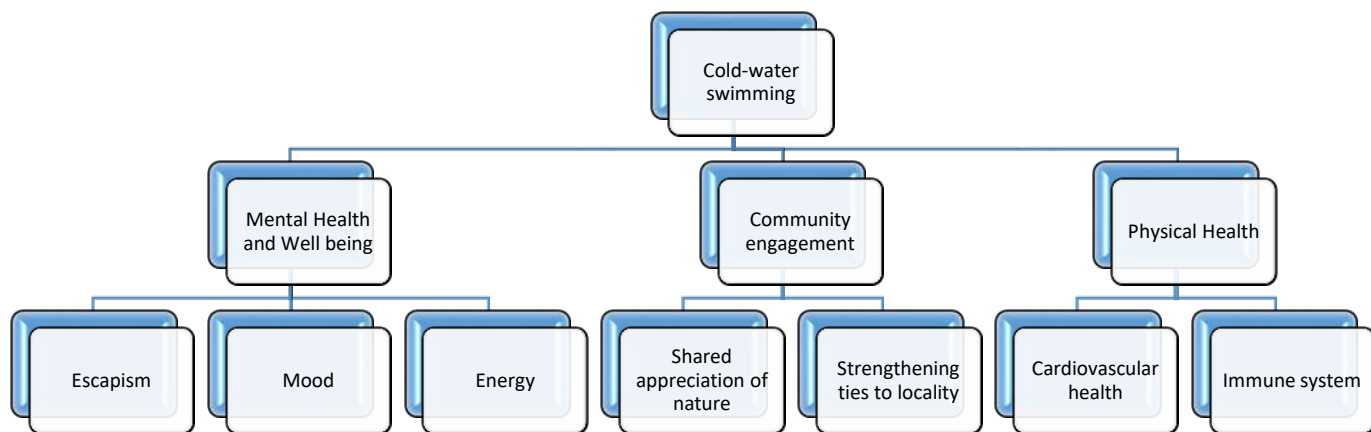


Figure 1: Themes and subthemes of Qualitative data analysis.

## Mental Health

### *Mood*

The first theme to emerge from the data analysis was mental health. All 10 participants noted that cold water swimming had a positive impact on their mental health. The first sub theme of this was the impact of cold water swimming on general mood.

*“I’ve got a stressful job and I used to find it quite difficult to turn off, it’s definitely been beneficial to my moods.” (participant 1)*

The effect of cold water swimming in offsetting the winter seasonal blues was particularly noted as an important outcome for participants.

*“I think it really stood to me, because usually in the winters with the darker and longer nights id sometimes be feeling a bit down in the house, but the swimming has definitely picked me up a bit and helped me get through it”. (participant 8)*

### *Energy*

As well as general lift in mood, another sub theme to emerge was enthusiasm for other forms of physical activity and energy levels. Participants shared that after a session of swimming they felt they were more energetic and full of life.

*it gives me energy, lots of energy for the day, maybe it’s the adrenaline from hitting the water but I’m always awake and good to go after it. (participant 3)*

The act of cold water swimming yielded more energy and more enthusiasm to engage in other forms of physical activities.

*“Just in general, a little bit more energy. I suppose if we look at it on the flip side that I found when we stopped doing it towards the end of last year I would say that my energy probably decreased. I had less interest in doing other types of exercise.” (participant 2)*

### *Escapism*

Participants shared that the act of cold water swimming functions as a reset button for the day and as a reliever of stressful lives and occupations.

*“I was always a bit stressed, and I found it hard to leave work behind me and became easily stressed in general as a person. I’ve feel like I’ve been a lot less stressed since I started the swimming. Whenever I feel the cold water hit I forget about whatever else is going on, kind of acts like a reset for the day.” (participant 8)*

### **Community engagement**

The majority (8/10) of participants engaged in cold water swimming in a group setting. Whether it be with a couple of friends or as part of a local swimming group. A strong sense of togetherness emerged and cold water swimmers tended to prefer going in groups either for safety concerns or for “craic “ and chats.” (participant 3)

### *Strengthening ties to locality*

The cold water swimming community is an inclusive and safe way to build ties to your local area all whilst appreciating nature and the sea.

*“When we tog out we're all one when we immerse ourselves in the water there are no boundaries there, there's nobody judging and we just share a common love and interest of immersion and of nature.” (participant 4)*

Participants noted that the swimming community is welcoming and friendly even those who are only new to the swimming scene.

*“I definitely prefer being in a group. I love the craic. I've really made good friends with everyone down there” (participant 3)*

The sense of community and “craic” is not the only draw to swimming as part of a group. Water safety was a particular area of concern for some participants.

*“I think just for safety, I'd never go down on my own. I always go with at least one other person.” (participant 2)*

When participants were asked if they thought there were any negative impacts of cold water swimming, many “negative effects” stemmed from concerns over water safety.

*“Sometimes I'm wary when I see big groups of people going in for a swim, we have been lucky in that there haven't been any incidents but I just hope people understand the importance of being safe.” (participant 8)*

### **Physical Health**

The last theme to emerge from the data analysis was impact of cold water swimming on the physical health of the participants. Participants found that their physical health had improved since beginning cold water swimming.

*"I currently have a problem with my back and the only relief aside from medical intervention of drugs is the seawater and I actually think that that has a bigger benefit than anything else really in terms of pain relief, yeah huge." (participant 5)*

Other participants noted the beneficial effects on their heart and cardiovascular systems

*"My blood pressure was down and cholesterol was better than it had been before." (participant 8)*

### *Immune system effects*

The majority of participants when asked about effects of cold water swimming on physical health reported they felt they had a reduced incidence of upper respiratory tract infections such as coughs and colds.

*I'd realized that I hadn't had any sniffles or cold spells at all, which is rare for me because usually a handful of times during the winter I'd be choked up for a couple of days at a time." (participant 3)*

### *Comparison to other activities*

Participants were asked about other forms of physical activity, if any, do they partake in and would those other activities yield the same effects as swimming. Cold water swimming has a different and more lasting impact on these individuals, effects that they cannot attribute to the other forms of exercise that they do.

*"I cycle, I go for runs, I go to the gym as much as I can for my age. It just doesn't feel the same and I'm not sure why. I just feel cold water swimming has a completely different effect than anything else I do." (participant 4)*

## **Discussion**

Cold-water swimming was perceived by all the participants to have a significant beneficial effect on their lives in terms of physical and mental health. These effects appeared more significant than any other activities they undertook and included benefits to mood, energy and immune system health.

Our research further highlights the potential benefit there is to be gained with regards to cold-water swimming and its influence on the mind, body and soul.<sup>6, 11, 18-21</sup> Cold water swimming and its meaning is individualized to those undertaking it. For some it is a means a escape from the stresses and worries of everyday life. For others it is a way to beat those winter blues and a chance to meet those who live nearby with whom they share a common respect and appreciation for the open sea.

Cold-water swimming has been reported to improve one's mood, energy and overall emotional well-being.<sup>6, 21 7</sup> Our study provides qualitative evidence to confirm this data. All participants interviewed for our study, found that it "lifted their mood" and made them feel generally good about themselves. The experience of cold water immersion seemed to trigger a physiological "reset" button which relieved anxiety, boosted mood and enhanced immune health. This echoes other studies in the area which shared the sentiment around the importance of sea swimming and what it means to those partaking in it<sup>19</sup>. The published literature suggests that cold water immersion can improve mood and well-being even after a single immersion in cold water.<sup>22</sup>

The effect of cold-water swimming on our physical health and immunological function has been investigated in prior publications with a focus mainly on the occurrence and severity of upper respiratory tract infections (URTI) and cardiovascular health.<sup>23 6, 10</sup> Our results aligned with these previous findings as half the participants reported that they felt they had reduced incidence of upper respiratory tract infections and several noted they had improved blood pressure and cholesterol levels. Swimming is a low weight bearing activity that is often used in those with mobility issues as a means to stay active. One participant had chronic back pain and found that cold water swimming was of more benefit than any other form of pain relief. Swimming can be seen as a way to improve mobility and ease pain resulting from chronic health conditions not seen in other physical activities.<sup>24</sup>

Our participants clear preference for group swimming is also a way to ensure more awareness around water safety, which is one of the key concerns in cold-water swimming. As sea swimming becomes more popular in Ireland, those who aren't used to swimming especially in cold temperatures should educate themselves on the risks of swimming in the open water. This was a particular concern for multiple participants. The risks associated with cold water swimming have been well documented. Undergoing cold water immersion can have negative effects on the cardiovascular system which could potentially lead to fatal arrest and drowning.<sup>4, 25</sup> In Ireland on average there are 110 drownings per year and lifeguards reported 473 rescue call outs in 2021 alone.<sup>26</sup>

Participants in this study were purposefully sampled from a large national online survey and were representative in terms of age, gender and swimming frequency. Data was analysed by two members of the research team independently and data saturation was reached during the analysis process. However, the final sample was small and consisted of those participating in cold-water swimming only.

This study has demonstrated the perceived value that cold-water swimming can have in terms of mental and physical health for participants. Further studies should examine more closely the underlying physiological and psychological pathways and potential effect sizes in terms of benefits of cold-water immersion.

#### **Declarations of Conflicts of Interest:**

None declared.

**Corresponding author:**

Katherine Flynn,  
School of Medicine,  
University of Limerick,  
Co. Limerick,  
Ireland.  
E-Mail: katherineflynn5@gmail.com

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