



## Surfing and the Senses: Using Body Mapping to Understand the Embodied and Therapeutic Experiences of Young Surfers with Autism

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## Surfing and the Senses: Using Body Mapping to Understand the Embodied and Therapeutic Experiences of Young Surfers with Autism

### Abstract

There is a growing body of evidence for the benefits of the use of water-based activities and environments as an alternative or complimentary therapeutic intervention to mainstream, medicalised approaches. Surfing is one such activity with the health benefits of surf therapy linked to the fluid and dynamic nature of surfing and the sea, while learning to surf in a group context can help enhance a sense of belonging and identity through shared experiences in the surf. This paper introduces the ways in which embodied and creative work in nature can empower young people with mental health difficulties, in particular Autism. The study explores embodied experiences and the use of a creative, participatory approach to evaluating a surf therapy intervention. As such, we investigate the usability of a novel participatory evaluation method, body mapping, to evaluate the feelings and emotional well-being of young participants in a surf therapy programme. Findings show how body mapping can be used to help create a richer picture of the potential health and wellbeing outcomes from engaging with the sea and highlights surfing as psychosomatic experience. The paper highlights the potential of in-situ embodiment practices and creative methodologies like body mapping to support therapeutic processes, in particular those related to the imagination and emotional body, in a playful and engaging way.

Given the global rise of medicalised interventions, especially among young people and the associated high rates of prescription drug-use to treat anxiety and mood-related disorders, across all ages (Pratt et al., 2017; Sarginson et al., 2017), there has been a search for alternative solutions such as surfing and other water-based activities as therapy (Britton et al., 2018). There is a growing body of evidence for the benefits of 'blue care', the use of water-based activities and environments (i.e. 'blue space') as an alternative or complimentary therapeutic intervention to mainstream, medicalised approaches (Britton et al., 2018). Scholarship about surfing is increasing, in particular, understanding surfing as a therapeutic intervention (Marshall et al., 2019; Britton, 2019; 2018; Wheaton, et al., 2017; Evers, 2015). Surfing is increasingly being advocated and implemented as a therapy for a range of physical and mental health issues, such as the National Health Service (NHS) pilot programme (NHS, 2014) in Dorset in the UK, a study identifying positive emotional impacts after 30 minutes of surfing (Pittsinger, 2010), the establishment of the International Surf Therapy Organisation, with a specific focus on building evidence-based research, and the popularity of surfing

globally as a 'blue care' activity (Britton et al., 2018).

Although the mechanisms underpinning how surf therapy contributes to wellbeing are not yet fully understood, the literature does suggest that learning to surf in a group context can help enhance a sense of belonging and identity through shared experiences in the surf (Hignett et al., 2017; Godfrey et al., 2015). In addition and central to any discussion of health and wellbeing, is the importance of immersion in producing a sense of 'respite' from everyday and acquired anxieties and disabilities (Marshall et al., 2019; Wheaton, et al., 2017). Marshall et al. (2019) document this specifically with young people dealing with mental health challenges or social isolation, who are engaged in surf therapy programmes. In addition, Wheaton et al's (2017) review, identified strongly positive developmental and health/wellbeing aspects of surfing programmes that are associated with the capacity-building potential of lifestyle sports like surfing and that can challenge more instrumental and structured sports programmes. Yet, they and others note that such surfing sites and experiences are also contested (Lazarow & Olive, 2017). For example, a separate UK study of

youths with social behavioural problems noted the social norms that can persist around water-sports and surfing with youth from lower income backgrounds feeling socially and culturally excluded (Hignett et al., 2017). Although limited, studies are emerging that go beyond the action of surfing and point to the particular nature or quality of our interactions with water and waves (Britton & Foley, in press; lisahunter, 2018). Emerging research on blue care suggests that there is a relationship between the environment in which an activity occurs and improvements to wellbeing (Bell et al., 2018). Specific qualities of the natural environment that are particularly life-enhancing were identified in some studies, such as the feeling of weightlessness in salt-water and the connective properties of water environments, however this aspect is under-investigated (Britton et al., 2018).

Authors have also recognised the challenge of measuring health and wellbeing outcomes in these complex and dynamic outdoor, wet and fluid environments. For example, Britton et al. (2018) noted that wellbeing measures are often highly individualised and fail to account for the socio-ecological factors of disadvantage and social inequality or indigenous models of wellbeing (Mansfield et al., 2018; Ritchie et al., 2015). Traditional pre-post survey methods that rely on verbal or written communication skills can also pose a challenge in wet environments and for diverse population groups who may have a wide range of differing needs and abilities (Britton & Foley, in press). Increasingly, there are examples of creative approaches to 'measuring' wellbeing for groups with diverse needs, for example, the 'Measuring Wellbeing Creatively' project, which works with people who have communication difficulties because of a brain injury or stroke. It explores how different colours and sensations can help them express feelings and emotions, which may help to measure their wellbeing.

Body mapping is a creative, in-situ method with origins in art and dance therapy and has been used as a participatory research evaluation process to examining embodied experience in physical space (Borovica, 2019; de Jäger et al., 2016; Fraleigh 2015). It is considered particularly effective when working with children and adolescents and can also be used as a therapeutic intervention (Kalucy et al., 2018;

de Jager et al., 2016). Reported outcomes include shifts in participants sense of identity and self-awareness, improving confidence, interpersonal and communication skills for those with low self-esteem (Fullagar, 2019). More broadly, in-situ methodologies are increasingly popular within research into diverse geographies of health and wellbeing (Foley et al., 2019; lisahunter 2018; Evers, 2015). However, despite the moving, multi-sensory nature of ocean and coastal environments, the use of more embodied practices and participatory evaluation methods of therapeutic blue space interventions is limited (Bell et al., 2018; Britton et al., 2018). An exception is a study by Berger and Tiry (2012), which draws upon creative methods including drama therapy to engage people coping with psychiatric disabilities in a therapeutic process at the beach.

In this paper, we explore how young surfers engage with and utilise the sea and surf as health-enabling through the use of an in-situ participatory evaluation method, body mapping. The paper is informed by empirical and participatory fieldwork in Ireland over the course of two summers (>12 months) with a non-profit organisation called Liquid Therapy (LT) and one of their surf programmes called the *Liquid Boardriders Club* for youth with Autism Spectrum Disorder Level 1-1 and various other mental health issues, who wish to develop their surfing skills. We present empirical and sensory accounts drawn from direct experiences, along with critical reflections on the observed experiences and experiments with body mapping. The primary focus of the study is how the novel use of an in-situ methodology, body mapping, can offer a rich understanding of the complex experiences of health, emotional wellbeing and active embodiment through surfing. This approach works with the body, the senses and more elusive experiences, both literal and metaphorical. We investigate body mapping as an evaluation approach aimed at exploring how experiences of and immersion in the beach space, sea and surf influence, shape and produce specific dimensions of wellbeing. We tease out links with the immersive and human/non-human dynamics of the body, sea and surfing and how best to capture the articulation of those experiences. In choosing to use such a methodology, we argue that this is an approach that can help uncover differential accounts around how participants feel

in place or building up to and winding down from a surf and how the acts of immersion inform and shape their health and wellbeing. These accounts move beyond the mind-body and self-nature dualisms and reveal a relational understanding of surfing. We draw on Merrel's (2003) term *bodymind* to capture the relational entanglement of body, mind and nature. Fullagar et al. (2019, p.13) define "*bodymind practices to be sites of dynamic intra-actions constituted through bodies-environments, bio-chemical flows, affective states and relational power.*"

### Research Methodology

This study was approved by the NUI Galway Research Ethics Committee with informed consent received from both parents and participants. It was emphasised repeatedly that participating in the study was entirely optional, choosing not to it would in no way impact the ability to participate fully in the surf lesson, they could opt-out at any time, and that it would not take away from their time in the water. We draw on a key competency for community psychology (CP) practice by adopting a participatory community research approach, working in partnership with community members (e.g. surf therapy coordinators, surf instructors, volunteers, parents and participants) "*to plan and conduct research that meet high standards of scientific evidence that are contextually appropriate, and to communicate the findings of that research in ways that promote community capacity to pursue community goals.*" (SCRA, 2012, p.13). In this paper we present findings from a preliminary, qualitative study appropriate to the context and purposes of the surf community and including more-than-human elements such as the beach, tides, waves, wind and weather (Abram, 2012). In this section we first outline the surfing intervention's therapeutic process followed by a discussion of the methods.

### Activity and Setting

Liquid Therapy is based in county Donegal, a rural region in the north-west of Ireland, and utilises the sea and surfing to tackle mental health issues and surrounding stigma for young people by providing a range of tailored surf therapy programmes from one day surfing sessions to eight weeks for young people with

disabilities. Their programmes are designed with a focus on mind-body, self-other, self-nature connections in a playful way (Fullagar, 2008), rather than a focus on 'physical activity for (mental) health,' which can dominate behaviour change and health promotion interventions. This study included participants from the *Liquid Boardriders Club*, an eight week surf programme with two hour surf lessons every week from July to August 2017 and 2018. Although instruction was given on the technical aspects of how to catch a wave, stand up on the surfboard and ride waves, the pedagogic ethos was more concerned with the creation of an enabling and playful environment, meeting each child at their individual level, made possible with the ratio of one-to-one instruction. The aim of LT is to create a positive, enabling environment for participants through surfing. Each surf session took place on Rossnowlough beach, considered one of the best and safest beaches to learn to surf on the west coast of Ireland due its gently sloping profile, rolling waves and lack of currents or hidden rips.

### Participants

A total of twelve surfers, seven girls and five boys aged 8 to 17, with Autism Spectrum Disorder Level 1-1 (ASD L1-1) and a mix of other psychological and anxiety disorders and learning issues commonly associated with ASD L1-1 participated in the study. The surf programme did not assess participants based on their diagnosis and no formal medical diagnosis was required to participate, welcoming participants with a mix of various mental and physical disabilities. This particular programme, the *Liquid Boardriders Club*, was established in order to facilitate an environment where participants could assert greater independence, progress their surfing skills through peer learning and where the emphasis was not on surfing as a therapy or treatment. In some cases the children were not aware they had a formal diagnosis and in other cases, preferred not to be viewed as somebody with a mental health disability. Participants were occasionally referred or heard about LT via various support groups and networks and / or word of mouth. In addition to the participants, their parents (n=11) and three volunteer instructors, including the programme organiser, were included in the study in semi-structured interviews.

### Body Mapping

In response to the challenges of using traditional research methods in blue care settings, we wished to trial in-situ methods that rely less on verbal or written responses and were more multi-sensory and embodied. Body mapping is a qualitative, participatory research method that engages the senses and draws on similar methods used in dance therapy as well as mindfulness-based practice. According to Fullagar (2019, p.9) it, "*incorporates art (drawing), reflection and narrative that provides the means of creatively exploring the embodied interrelationship of personal and social worlds*", with a focus on the natural world in this study.

Body mapping was used as an experimental method with the study participants in the surf therapy programme as a different way of understanding complex experiences of physical health and emotional wellbeing. We wanted to evaluate the usability of body mapping in a surf therapy setting to understand the sensory, embodied and emotional experiences of young people. The evaluation was developed collaboratively as part of the surf programme, while being conducted independently by the lead author of this paper. Informed by the somatic work of Fullagar (2019) and Fraleigh (2015) amongst other movement practitioners, the integration of the body mapping research method into LT surf sessions created a safe and enabling space where participants creatively explored, sensed and communicated their emotional and physical feelings. Similar to Fullagar (2019), we describe this research design as an 'assemblage model' that recognises the interrelationships between the surf programme and evaluation methods that are productive of different ways of knowing (Borovica, 2019; Atkinson & Scott, 2015).

The body mapping process was carried out on the beach once participants were in their wetsuits and before their surf instruction began. It took 15-20 minutes and was facilitated by the lead author and carried out at intervals during the weekly surf sessions in week 2 and 4 of the eight week programme during July - August 2017 and a follow-up one year later during the next season's programme in August 2018.

Three different approaches to body mapping were experimented with throughout the programme; i) using the sand and items found on the beach as a canvas to create individual body maps before surfing, ii) using sheets of paper and coloured pencils and crayons to create individual body maps before surfing, and iii) using the sand to co-create a single, large collective body-map to represent the entire group before and after surfing. Eight of the participants from the previous year participated in this third exercise. This was also the only exercise to carry out body mapping before and after. On each occasion, participants drew their body outlines on the sand (except when the paper maps were used with generic print-outs of body outlines). To support a greater bodymind connection, participants were invited to 'scan' their body from head to toe, engaging as many senses as possible and noticing any sensations as they moved through their body, physical or emotional. After that, they used found objects or drew in the sand in whatever way they felt captured or symbolised physical and emotional feelings and sensations. The findings from each exercise are presented and compared in the results section. Upon completion of the body maps, participants were invited to share their insights about their maps and to connect with the maps others had created in a whole group discussion facilitated by the researcher. Prompt questions were asked to encourage participants to 'notice' feelings, and participants were invited to respond to open questions about:

- How and where they might feel emotions and sensations in the body,
- How they found the experience of body mapping (what they liked / disliked),
- Anything they noticed about themselves that surprised them or they didn't notice before.

Comments shared by participants were written in the researcher's field-notes immediately following the activity and body maps were photographed. The process, outcomes, opportunities and limitations of these creative, embodied approaches to understanding complex feelings and emotional wellbeing in relation to surfing are discussed in the following sections.

*Semi Structured Interviews and Participatory Observation*

At the end of the programme (week 8) semi-structured interviews were carried out with instructors, parents and participants. Interviews typically lasted 10 to 20 minutes. Instructors were asked questions relating to the sea and surfing and what they thought were particular health enabling qualities of both the setting and the activity and any changes they noticed in participants. Parents were asked to share their observations about how their children experienced the sea and the impact of surfing on their overall health and wellbeing and participants were asked how the sea and surfing made them feel. Interviews were recorded and transcribed and a word frequency analysis was carried out under the categories of 'how surfing/sea makes me/my child feel.' The findings are discussed in relation to the outcomes of the body mapping exercises in the results section. In addition to interviews, the lead author attended four surf sessions in week 2, 4 and 8 during the summer of 2017 and a follow-up session at the start of the programme in the summer of 2018. During these sessions the researcher moved between the sea and the beach, alternating between being in the surf as an observant participant (Smith, 2019) and on the shore where parents spent their time while their children surfed. This form of participant observation acknowledges the active engagement of the researcher and helped to build rapport and a temporal understanding of place (Britton & Foley, in press).

**Findings**

This section presents the ways in which the participatory methodology of body mapping can be used to help understand the complex experiences of health, emotional wellbeing and active embodiment as a process of change. This section presents the empirical and sensory accounts drawn from direct experiences of the participants, along with the observations of instructors, parents and participants elicited during semi-structured interviews. The body mapping sessions are described first, followed by responses from the interviews. Although survey data (published elsewhere, see NEAR-Health, forthcoming) identified each participant as physically active with a preference for

outdoors and the seaside, for the majority, their only opportunity to experience surfing was with LT.

*Body Mapping Outcomes*Body mapping 1 (BM1), July 2017

During BM1 participants formed a circle on the beach and took it in turns to draw a large outline of their body on the sand. Lying down, participants were invited to take a few moments to focus on their breathing, bringing their awareness into their bodies, noticing how their bodies felt on the in-breath and out-breath (see Fig. 1a). This helped to settle and relax the group although some children found it difficult to be still and others preferred to sit instead of lie down. After the 'body scan' visualisation, participants created their personal body maps drawing on the surface of the sand or using items found on the beach space such as pebbles, shells, feathers and plastic bottle caps to symbolise different sensations and feelings. For one to two minutes each, participants took it in turns to share their bodymaps with each other while the facilitator moved between the groups observing the interactions (Fig. 1b). Everyone returned to the large group circle to share their responses to the prompt questions.



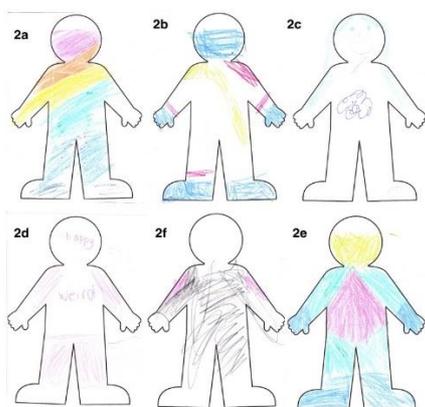
Figure 1. (a-c) Participants taking part in a body mapping exercise before surfing.

Discussions were lively and highlighted a strong bodymind connection with both physical and emotional feelings expressed. 'Negative' sensations or feelings of discomfort were identified such as an 'X' drawn between the shoulders to symbolise muscle tightness, and

zig-zags or 'Xs' on hands and feet to symbolise feeling cold in that part of the body (Fig 1c). Physical sensations were also linked with positive and mixed emotional responses, for example, wavy lines drawn on the middle of the body represented the feeling of 'butterflies in the belly', which participants described as feeling both excited and a little nervous.

#### Body mapping 2 (BM2), August 2017

At week 4 of the programme, BM2 was carried out using pre-printed body maps on A4 sheets of paper (Fig. 2). The process was the same except this time instead of creating body maps on the sand body maps were created by drawing on and colouring on the sheets of paper. Having material objects and colouring pencils and crayons seemed to help focus the attention of participants. Creating the maps allowed individuals to quietly reflect and become absorbed in the act of colouring.



**Figure 2.** (a-f) Examples of body maps from BM2 using paper hand-outs and colouring pencils.

When sharing with the group, participants were able to show and 'talk through' their body map, enabling them to express more creatively a mix of complex feelings through the use of visuals and colour. For example, the body map in Fig 2a shows a spectrum of colours used by the participant to illustrate the mix of emotions she was feeling. She explained that the warm colours (pinks, oranges and reds) symbolised her love of surfing and excitement to get into

the surf, the cooler greens and blues symbolised her connection to the sea. The body map of a male participant in Fig. 2b shows the use of colour to symbolise various physical sensations with the blue representing cold hands, feet and head, the red colour was for stiffness or soreness in the shoulder, ankle and wrists and the yellow colour was a feeling of excitement running through the body. Another participant used symbols to illustrate emotion, such as the feeling of excitement as a bodily sensation in her belly illustrated by the butterfly in Fig. 2c. This was not linked to nervousness but rather anticipation of having fun in the surf and how that made her feel happy, illustrated with a smiling face. One participant chose to use the words 'happy' and 'weird' to describe how she felt and drew them where she felt these emotions in her body (Fig. 2d). Another filled his body map with a mass of dark squiggles to convey a complex mix of emotions that he wasn't able to tease out or articulate. The red colour symbolised stiffness in his arms because he had been surfing earlier that week and his arms felt a little tired (Fig. 2e). The body map in Fig. 2f shows the use of blue for cold in hands and feet. The female participant explained that the yellow in the head represented a sense of calm and pink in the centre of the body symbolised a feeling warmth both physically and for her love of surfing.

#### Body mapping 3 (BM3), August 2018

One year later, BM3 was carried out with the surf club and included a total of eight participants from the previous summer. On this occasion, body mapping was carried out before and after surfing by co-creating one large collective body map on the sand. Each participant was invited to draw or add to the body map in the centre what they had noticed about their *bodymind* (Fig. 3a). After surfing, as the surfers left the water at slightly different times and the tide was now higher leaving less sand for the mapping exercise, each participant was invited to take a moment to notice how they felt in their body and if they experienced any changes. They described and drew these sensations on a new body map drawn on the sand, capturing the collective expression of how participants felt after surfing (Fig 3b). Due to low light / poor image quality this body map was redrawn later on paper. Although this process was less

nuanced it did provide a more rapid and accessible way to integrate body mapping as part of the lesson plan and to capture bodymind experiences immediately after surfing before participants got too cold. It also illustrates the collective energy and emotional state of the group as a whole.



Figure 3. (a-b) Before (a) and after (b) collective body maps

The body maps before and after surfing highlight the interrelationship between body-mind-environment, with a mix of physical and emotional states captured. Similar to BM1 and BM2, before surfing participants explained that 'X's and zig-zags illustrated muscle tension or soreness / stiffness in various parts of the body; elbow, knee, shoulder. Temperature was noted with some having cold feet or fingers. Vertical wavy lines symbolised happiness and horizontal wavy lines, excitement. The collection of pebbles in the centre of the body symbolised a little anxiety that they might not get the waves they wanted or that they might experience a bad wipeout. Some chose white stones placed on the head to symbolise feeling calm, and someone chose a black stone to symbolise feeling nervous that she might have a big wipeout.

The large circles that fill the body map after surfing (Fig. 3b) represent feelings of happiness and feeling good. Interestingly, the circles were started by one participant and repeated by others to also symbolise feeling happy. The wavy lines drawn outside the body symbolised feeling wobbly, cold or tiredness 'all-over', although this was combined with expressions of desire to go back into the sea and did not seem to hinder their enjoyment, as one female participant described, "my body feels all floppy, but happy." Another participant who drew a wave on the crown of the body map said all she

wanted to do was to keep surfing and that she always had "surfing on the brain", and another response captured the embodied effect of surfing, "I can feel it in my body."

A noticeable difference after surfing, despite feeling 'surfing out' (tired from the physical exertion of surfing), there were very few aches or pains felt in the body, apart from one participant who still had a sore knee, which he blamed on playing football at school. He explained that surfing had made him feel better everywhere else in his body and for a while he had forgotten his knee was sore. The female participant who felt anxious / nervous about wiping out, described how her body now felt excited and buzzing, she was delighted she didn't have any big wipe-outs and had no more feelings of anxiety. A participant said his pains and any negative feelings in his body had gone. Another said she felt very tired but full of a sense of accomplishment. However, not all experiences were positive. One participant was very disheartened and when asked how he was feeling, said he felt disappointed and low because he didn't get any 'good' waves, defined by him as being able to stand up and ride to the beach without falling off. He shrugged his shoulders saying, "that's just how it goes." Surf instructors explained how the impact of societal expectations on a child's self-perception can be a challenge, "It's expectation. The expectation doesn't come from us, it doesn't come from the ocean, or the child, it comes from society." (LT founder, personal communication, 2018) and that this is heightened in a society where surfing and what it means to be a 'good' surfer is portrayed in the media in a homogenised way with a focus on the performance aspects of surfing (Olive, 2015).

#### Participants Experiences of Body Mapping

There was full participation in every exercise and participants were invited to share in group discussions what they thought about each of the body mapping exercises. Some said they enjoyed the use of found objects (BM1), others said they liked 'adding colour to their bodies' (BM2). Some stated a preference to sit instead of lie down on the sand (BM1). Others found it very difficult to lie still and were impatient to get in the water. In the case of BM1 and BM2, the decision was taken by the researcher not to

carry out the exercise after surfing as participants were too cold and some the surfers left the water at different times. This was why BM3 was modified in order to capture body maps from each individual as they left the water in a collective map.

The participants of the study were interested to know the purpose of the exercise and it was important that it had a relevance to their surfing experience. This led to a discussion about why it might be important to connect with the body and notice feelings in preparation for surfing, as well as an awareness of how surfing and the sea makes us feel. For the most part, direct responses were difficult to capture as the priority was getting into the water as quickly as possible, which may have biased overly positive responses. However, participants became less impatient as familiarity with the exercise grew and so it took less time to complete. They also became more comfortable sharing in a group as they got to know each other and form friendships as the weeks progressed. Through a more tactile approach, some of the participants were able to literally draw their feelings out and use metaphor and symbols to give them meaning and expression. There was no clear preference for which exercise they found the best. From a practical point of view, the final exercise was the quickest to deliver, adapted with individual contributions creating a collective map. How each exercise compares is discussed in greater detail in the Discussion.

*How the Sea and Surfing Makes Me Feel*

The overwhelming response from participants when asked how being in the sea makes them feel was happiness, as well as more embodied sensations of freedom (Table 1). One boy said, "It makes me feel like I'm in space, I feel floaty and free." The ability to feel or be 'weird' and 'silly' came up in both the body mapping exercises and the interviews. For participants this meant the ability to be themselves, including being more open to failure and making mistakes as part of the learning process. When following up year a later, one participant explained how the sea is a space where he is free to be himself without judgement, "I don't get bullied when not at school", and another added, "everyone falls off their board." The increase in confidence was noticeable as participants pro-

gressed and seemed to be maintained the following year with one participant saying, "I can do anything if I put my mind to it."

Similarly, parents noted how being in the sea made their children feel happier, calmer and more confident. When asked what was the greatest wellbeing outcome they perceived for their children, confidence was the most frequently cited response (Table 1), as one parent shared, 'surfing helps him feel good about himself.' The embodied and immersive experience of surfing was emphasised with some parents mentioning the health enabling impact of specific qualities of the sea and surf such as the, "deep pressure therapy of waves washing over her." and another commented how the, "sea motion of surfing brings calm." Bodily changes as well as mood were also noted by parents, "My daughter has ASD and anxiety disorder, surfing makes her extremely happy and confident, her eyes light up, stress goes away and she just loves it." Increased confidence, communication skills, the ability to share feelings in a group, and becoming less distracted and more focused during the exercises were observed and reported in interviews with parents and instructors.

**Table 1**  
*Most frequently cited responses from interviews with parents and participants*

Top cited	Word count
How the sea makes my child feel (parents, n=11)	
Happy	6
Relaxed/calm/at ease	5
Confident	3
How the sea makes me feel (youths, n=12)	
Happy	7
Freedom free	3
Weird, silly	2
Love	1
Floaty (like I'm in space)	1
Wellbeing outcomes your child experienced (parents, n=11)	
Confidence (self-belief, self-esteem)	11
Happy	8

Relaxed, calm	6
Refreshed, energetic	3
Social friendship	3

## Discussion

### *Connections to Self, Others and the Sea*

Body mapping as a participatory research methodology addresses key competencies for CP practice by embedding the research process within the natural and contextual environment. The capacity to build on and draw out personal skills, strengths and competencies of participants, thereby enhancing collective empowerment among individuals working together to achieve shared goals through surfing is emphasised. Emotions felt in the body were richly described and reflected upon, with findings highlighting an inclusive and creative approach that supports diverse forms of expression, engaging multiple senses and facilitating greater self-awareness and engagement. It can be integrated within the therapeutic process to support some of the key enabling factors of a surf programme by creating a safe space where each individual has the freedom to creatively express themselves.

Findings reveal that the experience of surf therapy is a dynamic process where outcomes may vary depending on, for example, weather and surf conditions at the beach that day that may present varying degrees of challenge. Overcoming challenge (e.g. size of waves, going beyond depth) is seen as a key aspect of building confidence in surf therapy (Britton & Foley, in press; Britton et al., 2018) and this was evidenced in the body maps, in particular the sense of 'buzz' having overcome a fear of 'wiping-out' (Fig. 3b). Participants also described their experiences of being in the sea and surfing as a very embodied experience, connecting their sense of emotional wellbeing to felt changes in their bodies, such as butterflies in the belly.

Furthermore, body mapping helped build rapport between participants and create a space for different forms of expression, overcoming verbal or written limitations. Group sharing enhanced communication skills and provided

participants with the opportunity for interpersonal connections across ages or outside of their typical everyday peer group. For example, a 13 year old youth sharing their lived, bodily experiences with an 8 year old child. Importantly, the process provided participants with an active role in data creation and interpretation (de Jager et al., 2016)

In addition to its use as an evaluation tool, body mapping has potential to be used as an exercise that can help facilitate greater bodymind-nature connection. The influence of the participants' relationship with the natural environment, in this case, the sea and surf, on their wellbeing is evident. For example, the multi-sensory and changing state of the sea can enhance a sense of freedom and play. The interactions between the material, natural and emotional dynamics of place are an essential part of how wellbeing is accessed and experienced (Britton & Foley, in press; Britton, 2019). The importance of an embodied sensory experience was observed with frequent comments from surfers noticing changes in their bodies in response to emotional states and environmental changes (e.g. temperature change, wind, texture of sand). It was also a useful way to prepare for surfing by 'sensing the body' before entering the water, as well as a way to reflect on how the experience made them feel, noticing any changes in their bodies, immediately after surfing. As a therapeutic tool, body mapping could provide insights for surf instructors about individual and overall energy and emotional 'weather state' of the group.

### *Comparing Body Mapping Exercises*

We explored different variations of this in-situ methodology. The first approach (BM1), using the sand as the canvas for creating individual body maps, embeds the exercise within the natural environment, allowing participants to begin to sense not only their bodymind but also their *bodymind-in-nature*, noticing the direct sensation of the weight of the body on the sand, the texture or wetness of the sand, etc. This could be expanded upon to include beach combing as an activity prior to body mapping where participants are actively engaged in gathering found objects to use in their map, further enhancing their ability to sense their environment and become more ocean literate

by creating a discussion about these found objects, especially marine litter. Studies have shown how engaging in organised group beach cleans can enhance social wellbeing outcomes (Wyles et al., 2017). The interactive nature of this exercise (sharing in pairs and groups) might not be suited for those who are more introverted.

For BM2, using blank body maps on sheets of paper with colouring materials provided the opportunity for quiet reflection with participants working alone on their own body maps initially (introversion) combined with sharing what they created with the group (extroversion). As de Jager et al. (2016, p.12) state, *“drawing activities are likely to be familiar and therefore less anxiety-provoking to children, who are likely to have been exposed to similar tasks at home or at school.”* This approach to body mapping provided more detailed body maps, however, the pre-defined outline of a body map could be constraining, especially for those who wish to draw ‘outside the lines’ or create different body shapes (Fullagar, 2019). BM2 was also weather-dependent, it would not have been possible to do this exercise on the beach if it was raining.

BM3 allowed for the greatest amount of group interaction and worked well within a group where everyone was already familiar with each other and had established close bonds as committed members of the surf club. This suggests the role surf therapy can play in helping to establish interpersonal relationships and trust-building. BM3 provided an overview of the complex and diverse bodymind dynamics and mixed emotional states, mood and energy within the group as well as the changes participants experienced after surfing. Of particular significance was how surfing impacted the emotional state and how sensations were felt through the body, with those who experienced various ‘negative’ feelings reporting none after surfing, and how they felt ‘happy all over’ with ‘surfing in the brain.’ That said, it also allowed for the acknowledgment of difficult feelings and even disappointment, and that outcomes from surfing may not be universally felt. BM3 did not provide the same level of detail but it could be carried out more rapidly and so may be better suited where a pre-post evaluation is desired, without participants getting too cold

or tired after surfing. Evaluating post-surf experiences in this way enabled participants to deepen levels of body awareness and link bodily sensations and feelings to their surfing experience. It might be difficult for some to express feelings if these feelings are seen to be at odds with the overall group.

#### *Comparing Body Mapping Exercises with Interview Data*

Body mapping has been recognised as an important tool to work with youth as it *“avoids imposing the researcher’s or broader societal or cultural views onto participants experience”* (de Jager et al., 2016, p. 12). When compared with the interview data there are notable similarities such as the feelings of happiness and love, and how surfing enables the freedom of self-expression (to be ‘silly and weird’). However, the body mapping exercises reveal a richer and more textured experience and how and where these emotions are felt in the body as physical sensations, as well as the transformation of these feelings after surfing. For example, the ‘X’s’ of tension or anxiety becoming circles of joy or happiness. It also allowed for the acknowledgement of more complex and mixed emotions, whereas there are no ‘negative’ feelings expressed in the interview data. It is possible that participating in the exercises may have enhanced communication and verbal skills, fuelling the imagination, with the use of metaphor used in some interview responses, e.g. *“Surfing makes me feel floaty, like I’m in space.”* Findings from interviews highlight increases in self-esteem and confidence as direct outcomes, which were also observed during body mapping.

#### *Limitations*

For some participants it was just too much to sit or lie still for any length of time and they may seem distracted or difficult to engage. That said, during group discussion everyone contributed and was able to express how their bodies were feeling both physically and emotionally. In some instances it can be helpful to invite those who are more unsettled to ‘co-facilitate’ and help demonstrate the exercise. In most cases participants were too cold post-surf to repeat the process. Therefore, an alternative could be to carry out the exercise indoors, once participants are dressed and warm. That said,

it could work much better in a warmer climate than Ireland. Body mapping requires a certain level of facilitation and can be time consuming, although there is potential to integrate it into an existing surf therapy intervention. This approach can be difficult to quantify, however, it can be useful as a qualitative approach and may be particularly useful in a setting where the cohort may experience survey fatigue, or the wet / watery nature of the outdoor setting makes traditional paper surveys difficult to administer. Where there are verbal limitations the sensory and tactile qualities of body mapping, using symbols and objects to express feelings, may be beneficial. Direct comparison with different methods, such as surveys, would be worthy of further research.

Although outcomes were generally positive, body maps also revealed the complexity of feelings and sensations – the anxiety felt before surfing associated with a fear of failure or not succeeding, and the physical discomforts caused by the weather (cold) and body aches. These are not necessarily a limitation for all participants, as evidenced in changes in the before/after body mapping, however, for some it can impact their mood negatively (Caddick et al., 2015). A key barrier identified by surf instructors and volunteers was expectation (and the associated disappointment), as evidenced by the disappointment felt by one participant post-surf, feeling like he had not measured up to what it means to be a successful surfer, i.e. to stand up on the surfboard. In a group setting this could be a challenge when others clearly experience a post-surf ‘buzz.’ LT’s emphasis on play over performance (Britton, 2018) is important to overcome this, as well as creating pathways of support for those who do want to compete in mainstream surfing competitions. Furthermore, LT have a debrief after every session providing a space and opportunity for volunteers to share their experiences, learnings and insights, a group sharing that offers support and a space to openly identify and address any issues from the session in ‘real time.’

### Conclusions

The use of body mapping enables complex thoughts and feelings to be elicited and expressed creatively, contributing to a deeper understanding of place-based therapeutic interventions as well as the visual communication

of embodied meanings as qualitative ‘evidence’ (Fullagar, 2019; Kalucy et al., 2018; Boydell et al., 2016). This study highlighted the interrelationships between the surf programme and evaluation methods that are productive of different ways of knowing, sensing and acknowledging. Findings from the use of embodied methods like body mapping reveal a richer picture of the potential health and wellbeing outcomes from engaging with the sea and highlights surfing as psychosomatic experience. Using body mapping as an in-situ methodology and embodiment practice can be a playful and engaging alternative or complement to traditional research methods such as interviews. It enables greater freedom of expression by tuning into bodily sensations and feelings, allowing participants to notice how they are feeling in their bodies in the present moment.

As demand grows for surf therapy, there is a need to monitor new therapies to provide evidence for practitioners and policy makers. This would support the provision of evidence-based training by governing sporting and recreational bodies to mainstream inclusion practices and to facilitate therapeutic nature encounters for health and wellbeing in ways that help promote the capacity of communities to pursue their goals. Body mapping is a tool that could be applied in other blue space and nature-based settings and activities with adults as well as children. However, more empirical investigation would be valuable in determining its characteristics in researching embodied people’s experiences and relationships to nature.

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