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A Pragmatic Delphi Exploring Barriers and Facilitators to Emergency Responder/Healthcare Workers' Participation in the Blue Light Surf Club Therapy Intervention

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Abstract

Emergency responders/healthcare workers face significant mental health burdens associated with their integral roles within society. Alongside the need for more mental health support, a major contributing factor to this burden are barriers to accessing suitable support. The aim of this study was to build consensus on the barriers/facilitators to a proposed surf therapy intervention supporting this population, the Blue Light Surf Club (BLSC). Where possible the study also explored pragmatic solutions from the perspectives of potential participants. Given the primary aim of building consensus, a Delphi method was utilised alongside 18 emergency responders/healthcare workers from a range of different roles in central Scotland (7 males and 11 females; mean age = 38.2 years; standard deviation = 11 years; range 19-54). Participants were surveyed about their perceptions of barriers/facilitators to accessing the proposed BLSC surf therapy programme. Four rounds of questions were required before a priori defined consensus was reached across all generated items. The outcome of the research was a set of recommendations for the implementation of the BLSC grouped around three themes: Intervention Access, Intervention Delivery and Intervention Structure. These recommendations offer insight and practical suggestions for overcoming established barriers to accessing mental health support for this population. The findings of this study have direct implications for the design stage of the BLSC surf therapy intervention while also supporting a wide range of similar interventions aimed at the emergency responder/healthcare population. These pragmatic recommendations are of value both in terms of their contribution to academic discussion around supporting this population, and the direct support they offer to comparable community-based organisations.

Introduction

Emergency service/healthcare personnel in the United Kingdom experience considerably more mental health problems then the general workforce and are twice as likely to identify challenges at work as the main cause for these problems (MIND, 2015). For the purposes of this study, we have defined emergency service/healthcare workers as individuals who directly respond to potentially life threating emergencies within both community and healthcare settings. Examples of such workers in a UK context would include police, fire service, ambulance staff, emergency call handlers, Royal National Lifeboat Association (RNLI) crew and lifeguards, UK Coastguard teams, accident and emergency staff, intensive care staff and neonatal unit staff, though this list is not exhaustive. All such roles have unique challenges in their delivery and are associated with poor mental health such as police officers in the UK who experience prevalence of Post-Traumatic Stress Disorder (PTSD) at a rate four times higher than that of the general population (Bell and Eki, 2015) while half of police have taken mental health related leave in a previous five-year period (Edwards and Kotera, 2020). This poor mental health correlates with negative coping strategies; one in four police officers screened for hazardous drinking in a recent global review (Syed et al., 2020). Similarly,

ambulance staff experience PTSD at a much higher prevalence than the general population (Petrie et al., 2018) with one third of ambulance workers reporting some form of psychiatric morbidity (Alexander and Klein, 2001). Prevalence is not the only challenge for emergency service mental health, severity of symptoms can also be intensified as demonstrated by research into fire service personnel (Wagner et al., 2010). This prevalence of mental health challenges also translates to emergency healthcare workers with nurses from multiple specialisations reporting high levels of stress impacting on their well-being (Kirkcaldy and Martin, 2000). This stress has been associated with tragic consequences; in the UK nurse suicide rates are 23% higher than the general population (Windsor-Shellard, 2017). The prevalence of poor mental health amongst emergency services and emergency healthcare workers has been further exacerbated by their frontline roles in responding to the COVID-19 pandemic. Amongst emergency service workers, 69% have reported their mental health deteriorating since the start of the pandemic (MIND, 2021). The number of UK healthcare workers reporting very high symptoms of anxiety or depression has more than quadrupled since pre-COVID-19 levels (Gilleen et al. 2021). The prevalence and severity of negative mental health amongst emergency service and emergency healthcare workers, alongside its exacerbation by the COVID-19 pandemic highlight the need for evidence-based interventions to support this population.

One emergent form of intervention that is increasingly being used to support mental is surf therapy, defined as "The use of surfing as a vehicle for delivering intentional, inclusive, population-specific, and evidenced-based therapeutic structures to promote psychological, physical, and psychosocial well-being." (International Surf Therapy Organization, 2023). Surf therapy has been utilised to support a range of populations, especially around mental health with positive impact identified within scoping review (Benninger et al., 2020). While examples of surf therapy for emergency service/healthcare populations do exist, there is currently no peer reviewed research exploring the effectiveness of surf therapy specifically for this population. Promising results can be seen within programme evaluations such as by Tourky et al. (2021), which identified significant associated positive changes to well-being alongside positive impacts on confidence, self-efficacy, and development/retention of coping skills. Research into surf therapy working alongside military veterans has shown surf therapy is associated with significantly reduced PTSD, depression, and anxiety symptoms (Glassman et al., 2021; Otis et al., 2020; Walter et al., 2019). While military veterans and emergency service/healthcare workers remain separate populations, it is plausible surf therapy would have a similar effect given comparable prevalence of similar diagnoses such as PTSD and/or anxiety. Theoretical mediators such as provision of safe spaces, respite from negative symptoms, and positive social support have been identified within research on surf therapy for a mixed sample of emergency service workers and military veterans (Caddick, Smith et al., 2015, Marshall et al., 2020). Research has also identified mechanisms within surf therapy in other populations that may have operational relevance for the emergency service/healthcare context such as surfing as a dynamic learning environment for coping skills and emotional regulation, avoiding negative clinical stigma around mental health, physical rehabilitation, and sensory grounding (Denneman et al., 2024, Fleischmann et al., 2011, Marshall et al., 2023 Moreton et al., 2021). Such mediators would appear to directly target priority areas that have been shown to be associated with poor mental health amongst emergency service/healthcare workers, including poor social support, maladaptive coping, lack of opportunities for processing, and burnout (Mildenhall, 2019; Sharp et al., 2020; Syed et al., 2020) further supporting the potential of surf therapy for this population.

While surf therapy could offer a plausible form of intervention to support the mental health of emergency service/healthcare, as noted by the ISTO definition surf therapy needs to be both intentional and population specific. To achieve this any prospective intervention must be aware of the significant practical barriers this population faces in accessing mental health support; the majority of UK emergency service personnel are not aware of how to access such support, and those who are aware believe the quality of support to be poor (MIND, 2016). Stigma is one of the primary barriers to accessing mental health support for emergency service/healthcare workers (Haugen et al., 2017). This stigma was largely tied to worries around confidentiality loss in mental health disclosure and the potential this has for negative career impact. Notably stigma around mental health in the police has been highlighted as prevalent both as personal 'self-stigma' and as team or institutional stigma (Edwards and Kotera, 2020). Current research highlights other barriers to accessing mental health support for this population including, a culture of self-reliance, lack of time to participate, lack of knowledge of referral pathways and transportation challenges (Edwards and Kotera, 2020; Haugen et al., 2017; Hernandez et al., 2014; Johnson et al., 2019). The importance of understanding the context and needs of participants is foundational for impactful intervention design, including for surf therapy.

Study aim

The aim of this study was to consult with frontline emergency service/healthcare workers as representatives of potential future participants of a proposed community-based surf therapy intervention, The Blue Light Surf Club (https://bluelightsurfclub.co.uk/). The consultation explored explore consensus on the barriers/facilitators to taking part and where possible, the study also sought to build consensus on pragmatic solutions to overcoming these barriers. The results of the study provided recommendations for the BLSC intervention's pilot at the artificial surf lake, Lost Shore Surf Resort in 2024 (https://www.lostshore.com/).

Method

Given building consensus between stakeholders was the primary aim of the study, a classical Delphi framework was deemed most appropriate to gain insight. The Delphi technique was developed at the outset of the Cold War to predict the impact of technology on warfare (Custer, Scarcella, and Stewart, 1999). The development of the Delphi technique was guided by the premise that combined individual anonymous predictions were stronger than unstructured group predictions (Kaplan, Skogstad, and Girshick, 1950). The process is used to build consensus around a topic through the systematic surveying of a panel of experts. A Delphi panel consists of a group of subject experts who can offer insight, and in this study work towards consensus of recommendations for intervention design. The number of participants required for a Delphi panel is not set, though a minimum between 10-18 has been previously suggested (Paliwoda, 1983). The panel receive, and respond to multiple rounds of questionnaires, the responses of which are analysed, consolidated, and presented back to the panel for further feedback. This is often done through presenting back statements for participants to rate their agreement on. This process continues until a, usually predefined, consensus is reached. The first stage of any Delphi process is recruitment of an expert panel on the topic in question.

Panel Selection

To best address the aims of this study initial purposive sampling was carried out with direct contact being made with gatekeepers (senior or management staff) to access potential participants (emergency service/healthcare workers) alongside open

advertising via social media and in strategic locations. Snowball sampling was also encouraged and accounted for around half of study participants. Current frontline emergency service/healthcare staff were deemed the experts required for this study as they could provide the most contextual insight as to the barriers/facilitators around taking part in the BLSC or similar interventions. Alongside current emergency service/healthcare status, the other primary exclusion criteria were ensuring participants were not currently receiving work related mental health support. This was done to minimise the risk of study involvement proving detrimental to participants mental health and/or distracting from ongoing support plans. The study recruited across multiple emergency service/healthcare domains to ensure sufficient variety of roles required to explore differing opinions/perspectives and facilitate a robust consensus building process. A breakdown of the job roles sampled can be viewed in Table I. A total of 18 participants registered to take part in the study, the average age was 38.2 (*SD* = 11) while 39% of the sample was male and 61% were female.

Table 1
Breakdown of Emergency Service/Healthcare Roles Sampled

Emergency service	Healthcare role
Fire Service	4
Police Officers	2
Paramedics	1
Ambulance Technician	2
Advanced Critical Care Practitioner	1
Neonatal Staff Nurse	1
Mental Health Staff Nurse	1
Adult Nurse	1
RNLI Crew	2
HM Coastguard	1
RNLI Lifeguards	2

Procedures

During recruitment and prior to every round, participants were given an information sheet outlining the proposed BLSC intervention. The sheet outlined in brief, key intervention components, its location and a provisional timeline while also linking to a recent news report featuring a comparable intervention. This information sheet aimed to offer context for the questionnaires throughout the remainder of the process. Prior to any rounds of questionnaires, it was important to define Delphi consensus a priori (Diamond et al., 2014). For this study, a suitable consensus was defined as 80% of participants scoring 4 or 5 (agree/strongly agree) on a 5-point Likert Scale (Diamond et al., 2014). This Likert Scale offered multiple levels to differentiate strength of view for agreement and disagreement while also offering a neutral opinion. The length of time each round was open for was set a priori at two weeks, though one period was extended to account for public holiday disruption. A further priority throughout the whole process was the anonymisation of participants at all stages. This was deemed especially important not only as part of established Delphi processes, but also so participants felt they could respond freely. As already highlighted, fear of breach of confidentiality contributes to stigma around mental health for emergency service/healthcare workers (Haugen et al. 2017). An online questionnaire process (the Qualtrics platform) was deemed most appropriate to maintain anonymity, to minimise disruption for participants and to accommodate COVID-19 protocols around not meeting in person. In total four rounds of questionnaires were carried out before consensus was reached on all items. Response rates were high throughout the study (Round 1:83%, Round 2: 94%, Round 3: 89%, Round 4: 94%). Ethical approval was granted by the Edinburgh Napier School of Applied Sciences Ethics Committee on 15/02/2021 (Reference Code: 2706662). This process involved in-depth discussion of research protocols with a committee independent of the study and

piloting of questions and processes. The chief ethical priority, as already highlighted, was always maintaining participant anonymity.

Round 1 Question Development. An initial round of open-ended questions was developed in line with classical Delphi procedures. These initial questions were based upon a review of limited literature exploring theoretical mediators for surf therapy with this population (Caddick, Smith et al., 2015, Marshall et al., 2020), alongside wider literature exploring barriers to accessing mental health for emergency service/healthcare workers (Edwards and Kotera, 2020; Haugen et al., 2017; Hernandez et al., 2014; Johnson et al., 2019). During the recruitment phase the developed questions were informally piloted with 2 emergency service workers external to the study, to check for meaning, clarity, and understanding. Feedback at this stage ensured the questions were appropriately worded prior to Round 1 commencement. The initial Round 1 open ended questions are available within Appendix A.

Initial analysis and statement development

Responses to open ended questions in Round 1 were initially explored through process coding, before codes were mapped, categorised, and tabulated to explore key themes from within the data (Saldaña, 2021). These themes provided the basis for initial statements presented back to participants from Round 2 to explore consensus. In subsequent rounds (2, 3, 4), participants received feedback around responses from the previous round and were given the opportunity to offer further comment or make modifications to statements. Qualitative feedback was coded and analysed within the same framework as Round 1 (process coding, mapping, categorisation, and tabulation). This process led to new or modified statements in the subsequent rounds. At the culmination of Round 4, consensus had been reached around all items resulting in a list of recommendations for future intervention design and implementation. The full research process has been surmised and visualised within Figure 1.

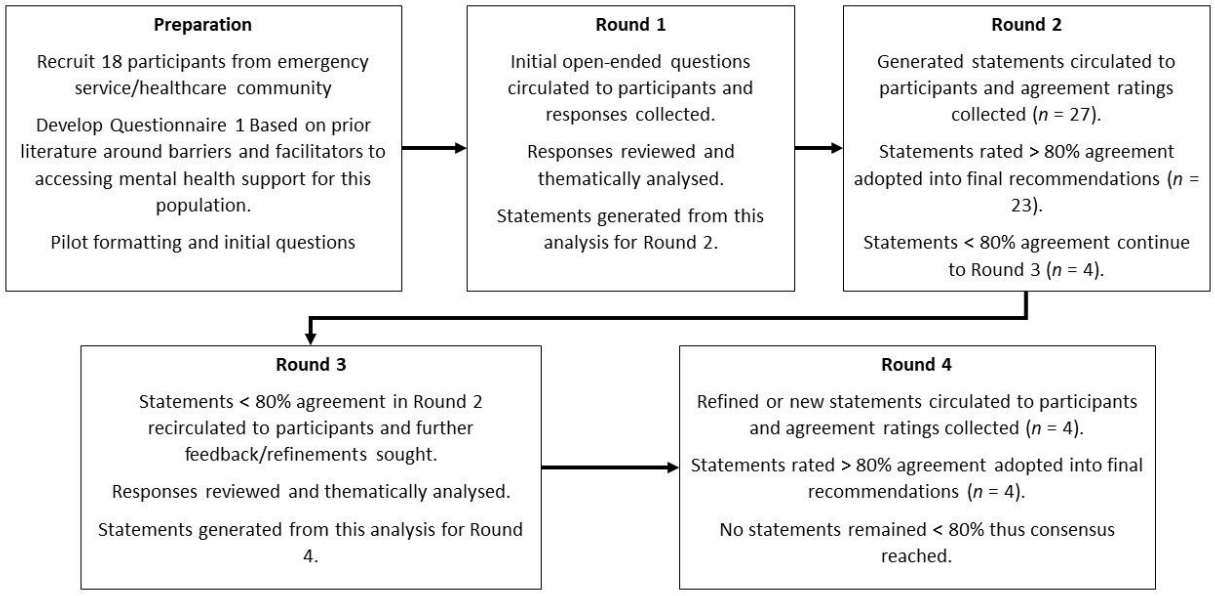

Figure 1. Delphi Research Process

Results

Round 1

The initial round of open-ended questions generated textual data from 15 participants who responded within the predefined response period. The data were coded and analysed to generate statements to explore consensus in later rounds. There was variation in themes that emerged with some applying more generally to intervention implementation (e.g. "Building an open non-judgemental culture around the intervention.") while others tended towards very specific guidance for intervention delivery (e.g. "Maintaining confidentiality at all times."). This variation and the depth of responses provided good insight to potential adaptations required for BLSC surf therapy as well as potential barriers to access. From the analysis, 27 statements were generated and taken into Round 2 of the Delphi study, and these can be viewed within Table II.

An example of this analytical process would be Statement 1: 'The intervention should maintain a safe space for all participants, free from judgment,' which was generated from multiple codes from question 1: appearing weak or not strong enough for the job, fearing being signed off from work, challenging stiff upper lip mentality, and question 2: prioritising an open non-judgemental culture, holding a safe space throughout all activities.

Round 2

The second round of the study consisted of participants rating their agreement with the generated statements. Table II shows percentage agreement for all statements. Statements that reached predefined consensus (Agree or Strongly Agree >80%) were adopted directly into intervention recommendations that are the primary output of this research. From the 17 respondents who responded in this round predefined agreement was reached for 23 statements. Four items did not reach consensus (italicised within Table II) and further feedback on why they did not reach consensus was sought in Round 3 of the Delphi study.

Table 2
Statements Generated in Round 1 and Percentage Agreement from Round 2

No	Statement	% Agreement
1	The intervention should maintain a safe space for all participants, free from judgment	100%
2	Perceptions around maintaining a 'stiff upper lip' or 'toughening up' should be challenged at the intervention.	94%
3	*The intervention should be structured completely independently of any workplace.*	*76%*
4	The intervention should promote evidence-based/scientifically proven coping mechanisms.	88%
5	The intervention should support participants in not isolating themselves.	94%
6	The intervention should provide information and support about accessing other services, if required.	94%
7	Anonymity should be maintained at all times around intervention.	82%
8	Positive examples and case studies would be helpful in promoting coping strategies.	88%
9	The intervention should not promise things it cannot deliver on.	100%
10	*The intervention should recognise and provide recognition around the work carried out by emergency service and healthcare workers.*	*76%*

11	Promoting a healthy lifestyle would be a positive element to the intervention.	94%
12	The intervention's setting outside of an office/classroom setting is a positive element to the intervention.	100%
13	*Self-referral is a preferable form of referral to the intervention.*	*53%*
14	The referral process would be easiest on an online platform	94%
15	The referral process should be as simple and transparent as possible.	100%
16	The intervention should consider how to promote appropriate use of the service, in contrast to just accessing free surf lessons, within referral process design.	100%
17	The intervention should be advertised as broadly as possible both within workplace and primary healthcare settings.	100%
18	A work-place team referral option would be beneficial within the intervention.	82%
19	*It would be beneficial if the intervention avoided putting co-workers on the same course, outside of team referrals.*	*35%*
20	The intervention should stress at recruitment it is accessible to all levels of fitness.	94%
21	The intervention should be aware and as flexible as possible with regards to attending around shift-based work.	94%
22	It would be beneficial for the intervention to occur regularly over a long period to make up for missed sessions due to scheduling.	88%
23	The intervention should be explicit about there being no judgment over missed sessions.	100%
24	Attending the intervention in my spare time would not be a problem.	82%
25	The intervention should provide plenty of advance notice as to the intervention dates and times.	100%
26	Good public transport links would be beneficial for the intervention.	82%
27	Given the intervention is Edinburgh based, avoiding rush hour times would be preferable.	82%

Round 3

Within Round 3 participants were presented back statements that did not meet the predefined threshold for consensus and asked for further feedback. Sixteen participants provided data within this round of the study. This feedback was thematically analysed to help generate modified or completely reformulated statements for Round 4. Statement 3 (The intervention should be structured completely independently of any workplace), nearly reached consensus level (76%) with many participants highlighting the importance of separation and workplace within Round 3 feedback. The key theme that emerged was around the wish to not exclude any kind of workplace collaboration through this separation. Participants recognised the possibility of positive collaborations with the intervention such as team referrals or organisational workshops. An addition was made to the statement ensuring such workplace collaborations would not be excluded by the otherwise separate nature of the intervention. The revised statement was: 'The intervention should be structured completely independently of the workplace to protect anonymity and prevent stigma. However, this should not exclude possible collaborations such as team or organisational group referrals/workshops).

Statement 10 (The intervention should recognise and provide recognition around the work carried out by emergency service and healthcare workers), was also very close to consensus (76%) and the main theme within

feedback was fears around either disingenuity or risk of flashbacks associated with recognition of work. Based on this analysis an addition to the statement was made ensuring recognition would not include any of these negative elements and the revised statement was: 'The intervention should positively acknowledge the nature of the work carried out by emergency service and healthcare workers. This acknowledgment should be structured to not be disingenuous, not reinforce any negative stereotypes and not risk any kind of flashback trigger.

Self-referral came up as a clear theme within Round 1 analysis but only 53% of participants agreed with it being the preferable form of referral to the intervention in Statement 13 (Self-referral is a preferable form of referral to the intervention). Analysis of the round 3 feedback on this statement provided no clear single referral method which emerged as preferable, however there was a clear focus on making the process as easy as possible for potential participants. As such, a new statement highlighting making referral pathways as easy and accessible as possible was drawn up. The reformulated statement also included a list of possible referral pathways that were referenced by study participants, with the revised statement being: 'The intervention should offer multiple referral pathways to make the process as easy as possible for potential participants. These pathways could include but are not limited to self-referral, occupational health referral, other workplace referral and/or healthcare-based referrals.

Statement 19 (It would be beneficial if the intervention avoided putting co-workers on the same course, outside of team referrals), received the lowest agreement rating of any statement (35%) despite the negative aspects of attending with individuals from the same workplace being a clear theme within Round 1. In contrast within Round 3 analysis of the benefits of attending with individuals from the same workplace also emerged. The feedback clarified the key concern from earlier data was about first finding out that someone from the same workplace was on the same course on the day of delivery. This could lead to worries around confidentiality or anonymity that may be a preference for individual participants as highlighted within both the literature and other statements. These concerns could in turn contribute to participants dropping off the course or a negative experience. To best address this, the statement was reformulated to state the intervention should check preferences prior to including individuals from the same workplace on the same course. The new statement was: 'Where co-workers may be referred onto the same course (outside of team referrals), the intervention should check and accommodate participants preferences prior to course commencement.' This solution was generated from participant suggestions within feedback provided. These modified or reformulated statements were presented back to participants to explore consensus within Round 4.

Round 4

The fourth and final of the study consisted of 17 participants rating their agreement with the modified or reformulated statements. Table III shows percentage agreement for these statements. Predefined consensus (Agree or Strongly Agree >80%) was reached on all statements and were consequently adopted directly into intervention recommendations. As consensus had been reached on all items the study was deemed complete. The primary output of this research was a list of recommendations for the design and implementation of the BLSC surf therapy intervention working with the emergency responder/healthcare population. An infographic of the finalised practical recommendations that have informed the development of the BLSC at Lost Shore Surf Resort is available – Appendix B.

Table 3
Modified Statements from Round 3 and Percentage Agreement from Round 4

No	Modified or Reformulated Statement	% Agreement
3	The intervention should be structured completely independently of the workplace to protect anonymity and prevent stigma. However, this should not exclude possible collaborations such as team or organisational group referrals/workshops.	88%
10	The intervention should positively acknowledge the nature of the work carried out by emergency service and healthcare workers. This acknowledgment should be structured so as to not be disingenuous, not reinforce any negative stereotypes and not risk any kind of flashback trigger.	94%
13	The intervention should offer multiple referral pathways to make the process as easy as possible for potential participants. These pathways could include but are not limited to self-referral, occupational health referral, other workplace referral and/or healthcare-based referrals.	94%
19	Where co-workers may be referred onto the same course (outside of team referrals), the intervention should check and accommodate participants preferences prior to course commencement.	100%

Discussion and Implications

This study aimed to build a list of practical recommendations for the implementation of a novel community-based surf therapy intervention for emergency service and healthcare workers in central Scotland. The finalised recommendations refer to the access, delivery and structural components of the intervention. The study also identified and provided solutions to pragmatic barriers to participation for the emergency responder/healthcare population. The first implementation recommendation (1) (all numbers refer to recommendations within Table III) within the results directly aligned with a key mechanism identified within prior surf therapy literature (Caddick, Smith and Phoenix 2015; Marshall et al., 2020) and wider mental health literature (Bryant, Tibbs and Clark, 2011; Walker, Hart and Hanna, 2017) in prioritising a safe space, free from judgment, to achieve positive impact on mental health. Multiple other recommendations produced by the Delphi process expanded upon how this safe space could be implemented specifically for this population. For example, recommendations 21, 22 and 23 recommend methods of maintaining this safe space despite potential missed sessions due the prevalence of shift work for potential participants. The Delphi process recommended flexibility (21), regular and long-term delivery (22) and explicitly removing any sense of judgement over missed sessions (23) to ensure the challenges of shift-based work do not undermine the safe space that is integral to intervention implementation and thereby undermine continued participation. This recognition of the shift work and its impact on availability as a potential barrier to intervention participation aligns with previous literature (Haugen et al., 2017; Hernandez et al., 2014; Johnson et al., 2019) and the generated recommendations offer a plausible means to overcome this barrier. This potential threat to the intervention's safe space highlights the importance of considering population specific barriers to accessing interventions and the potential solutions generated within the Delphi could be utilised within the planning of similar mental health support for emergency service and healthcare workers. The recommended flexible and non-judgemental approach has been adopted as a priority for BLSC design and implementation.

Another contextually specific set of recommendations related to safe spaces centred on the prevention of population specific stigma (2, 3, 7, 12, 19), specifically concerns around needing to remain silent around mental health due to the negative impact it could have on participants' careers. This form of stigma is, again, a well-documented barrier to accessing mental health support for this population in wider literature (Edwards and Kotera, 2020; Haugen et al., 2017). The Delphi recommendations highlighted how the surf therapy intervention was well placed to separate itself from any workplace structure or hierarchy and maintain professional anonymity throughout implementation, though this is by no means unique to surfing based interventions. This provides reassurance to participants that accessing the service would have no negative impact on their future careers (3, 7, 12) alongside specific recommendations such as checking with participants as to their comfort about having colleagues from the same workplace on their intervention cycle (19). The radically different environment offered by a surfing-based intervention seems to be a positive for participants in the clear separation/distinction it offers from the workplace (Marshall et al., 2023), and thus assisting in avoiding stigma identified as prevalent within wider emergency service/healthcare worker literature. As already mentioned, this by no means unique to a surfing-based approach, but the findings from this study highlight how such separation should be a clear and intentional priority for intervention development alongside this population.

The importance of social support is well established within literature exploring the mental health of this population (Mitani et al., 2006), physical activity-based interventions (Mason and Holt, 2012) and specifically in surf therapy (Caddick, Smith and Phoenix 2015; Marshall et al., 2020). The importance of this mediator was recognised within the Delphi recommendations (5), specifically around explicitly supporting participants to break cycles of isolation. This recommendation speaks to the importance of intentionally targeted surf therapy design such as icebreakers to help participants get to know each other and activities that promote teamwork or communication. Such activities have been prioritised within BLSC curriculum development. It is noteworthy there were significantly less Delphi recommendations around this mediator than safe spaces though when reviewing previous literature this is unsurprising. Social components have been identified as both contingent on (Marshall et al., 2020) and/or mediated by (Coalter, 2013) successful safe space provision in previous research. For this reason, while not many recommendations directly addressed social mediators, the extensive recommendations around safe spaces indirectly contribute to the pragmatic delivery of social components within programme theory for the BLSC.

Alongside safe spaces and positive socialisation, the Delphi highlighted the interest of participants to explore and learn about coping strategies within the BLSC intervention. The development of individual coping skills and mental health tools is not new for this population and has been successfully delivered in the past (Sharp et al., 2020). It was notable that respondents were very focused on the evidence-based nature of any delivered coping strategies (4) which is perhaps unsurprising given the many medical qualifications represented and the mental health training/awareness that will have been delivered to non-medical emergency service workers. This has informed the development of the BLSC intervention including core curriculum items. Further review of literature, including resources such as the Mind's Blue Light Wellbeing Programme (Sharp et al., 2020) will ensure and evidence-based approach to curriculum development as was valued by study participants. It was interesting that participants highlighted the importance of positive examples, personal testimony, and case studies around coping skills (8) as this

aligns with existing research (Oates et al., 2017) and can offer further pragmatic insight as to how to achieve recommendation 8 within the future intervention delivery. This recommendation also speaks to offering participants pathways to becoming future mentors as someone who has been through the intervention could provide in depth and relatable examples of coping strategies delivered. The Delphi recommendations around coping skill development offer clear priorities for future interventions and have contribute significantly to the development of an evidence based and population specific curriculum for the BLSC.

Building upon the need for a targeted curriculum, the Delphi process also offered specific pragmatic guidance around implementation for the BLSC intervention. A portion of these results centred on the referral process to the intervention (13, 14, 15, 16) and focused on making the process as easy as possible for participants but did not specify a preferred route. This is potentially unsurprising given established feelings of hesitancy around accessing mental health within this population due to stigma and a lack of knowledge around referral pathways (Edwards and Kotera, 2020; Haugen et al., 2017). Ease of use was the main priority (13, 14, 15) along with ensuring intervention access was targeted for those who needed support (16). These recommendations will inform future consultation around referral pathways. Other pragmatic suggestions for the intervention centred on helping participants access further support (6), promotion of a healthy lifestyle (11), timings (24, 25) and transport (26, 27). It is important to note the BLSC intervention will not have access to clinical support within the surf therapy itself. Helping participants access referral pathways to clinical support where appropriate will help address recognised lack of awareness on this topic (Edwards and Kotera, 2020; Hernandez et al., 2014), while peer support within the intervention may help overcome stigma related to accessing treatment (Edwards and Kotera, 2020; Haugen et al., 2017). This aligns with wider literature highlighting the need for community-based interventions to improve mental health literacy (Castillo et al., 2019) and integrate with clinical care streamlining referrals where appropriate. The importance of finding appropriate times for the intervention (24, 25) and minimising transport difficulties (26, 27) address barriers already established in wider literature for this population (Haugen et al., 2017; Hernandez et al., 2014; Johnson et al., 2019). These pragmatic recommendations, again not inherently tied to the delivery of a surf therapy intervention, could provide valuable learnings for other physical activity interventions with this population, or even interventions that use a completely different vehicle for supporting the mental health of emergency service and healthcare workers. They have also directly influenced the operational structure of the BLSC in terms of making it as accessible as possible for participants.

Limitations

The key limitation of this study was that, despite offering some useful recommendations (13, 14, 15, 16) the Delphi process did not build clear consensus on a specific referral pathway for the intervention. This should be a priority for future research. What the study did do is highlight the importance of an easy and accessible process that ensures the people who most need the intervention can access it. The Delphi also highlighted that this process needs separation from the workplace and a degree of anonymity to overcome associated stigma around mental health for this population. While consultation with potential participants led to these recommendations, further consultation with other stakeholders such as workplace occupational health, primary and secondary healthcare providers, and mental health support charities that work extensively with this population could help to generate a specific referral pathway that fits with participant described priorities. Consultation

with these stakeholders could also offer insight into the optimisation of the growing social prescribing paradigm for this population (Gottlieb et al., 2018).

The study was also not able to explore implementation recommendations around the surfing component of the BLSC intervention, and indeed the majority of recommendations were quite broadly applicable to non-surfing-based interventions as well. This could be down to the initial questions not connecting participants with surf therapy sufficiently, though every round of questions was grounded within the context of the BLSC intervention. It could also be attributed to consulting with potential participants with no experience of surfing, and no strong beliefs around barriers or facilitators to surfing components. The lack of surf therapy specific feedback highlights the need for robust ongoing process and impact evaluation to ensure that surfing components are optimised and adapted appropriately as a vehicle for the delivery of mental health support to emergency service and healthcare workers.

One further limitation that should be noted was that while study participants represented a good variety of different roles within the emergency service/healthcare workforce, the study was very regionally focused within the south of Scotland. Different contexts may have very different demands or focuses for emergency service/healthcare workers which could in turn impact on perceived barriers and facilitators to accessing an intervention like the BLSC. While the sample was appropriate for the targeted aim of the study, generalising the study's findings more broadly should be done with caution especially outside of a Scottish context.

Conclusion

The aim of this study was to consult with emergency service/healthcare workers on the barriers/facilitators to taking part in the proposed a BLSC surf therapy intervention. A Delphi style consultation offered insight into how best to adapt the BLSC intervention for this population, especially in terms of holding a safe space for participants in the face of work associated stigma around mental health, promoting positive social relationships, developing an evidence based coping skill curriculum and other pragmatic solutions to population specific barriers to participation. These Delphi recommendations also extend to informing wider interventions working with the emergency service and healthcare worker population that may utilise delivery vehicles other than surfing. Finally, the recommendations from the Delphi study provide the foundation for direct impact in terms of a theoretically informed and population specific community-based surf therapy intervention in the form of the BLSC.

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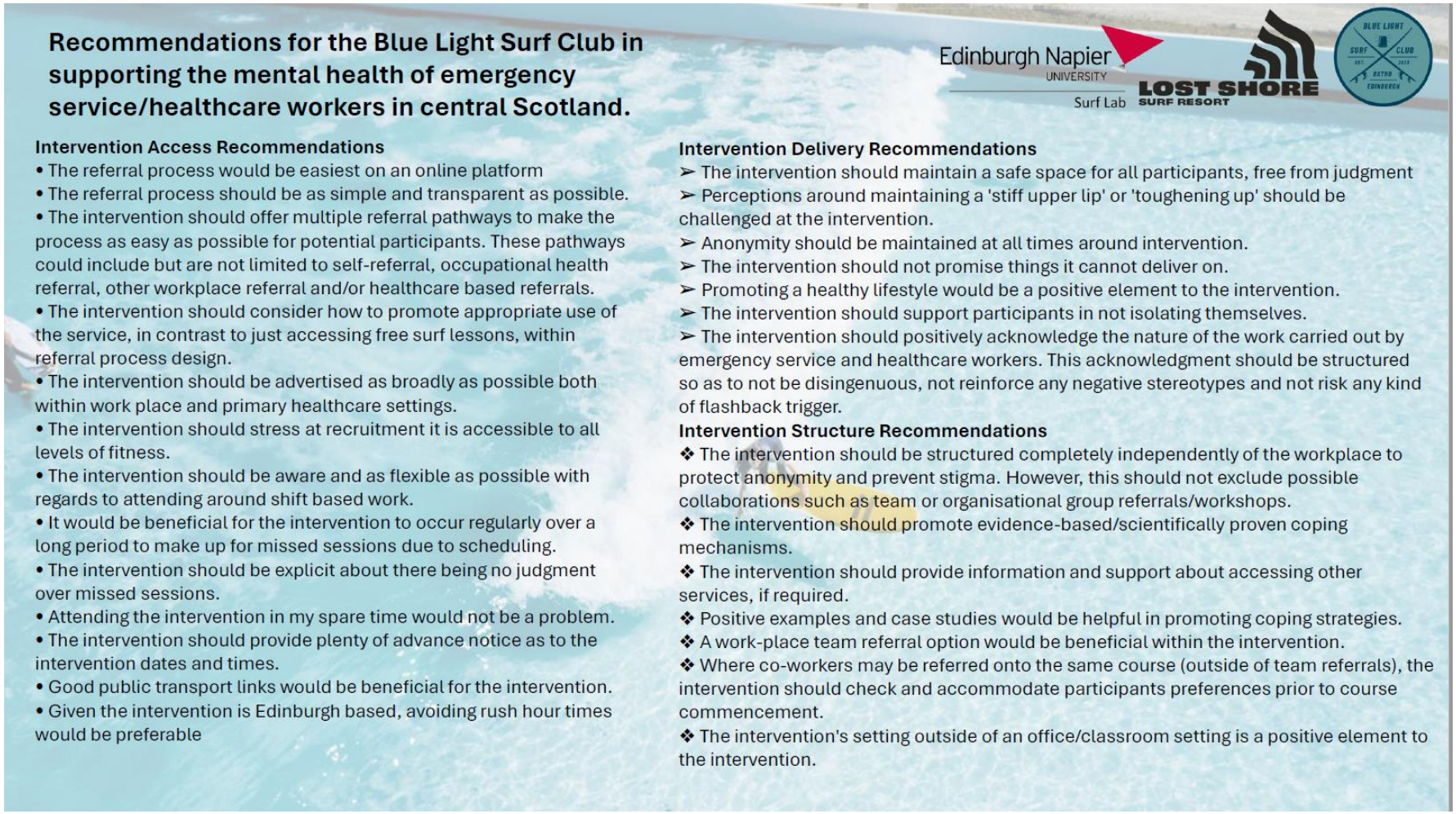
Appendix A

Delphi Round 1 Open Ended Questions

Initial questions developed as through literature review around barriers and facilitators to accessing mental health support for emergency responder/healthcare workers.

- Please describe your perceptions of stigma for first responders and emergency healthcare workers in accessing mental health support.
- Please describe your current knowledge/awareness around pathways to mental health support.
- Please describe any steps you have experienced, or you believe would help to overcome stigma in relation to accessing mental health support by first responders and emergency healthcare workers.
- Please describe any concerns you may have to participating in the group setting of the proposed intervention.
- Please describe your ideal referral pathway for accessing mental health support such as the proposed intervention. Some examples of referral pathways would include place of work referral, self-referral, GP referral or online referral. Please explain the reasons behind your preferred choice.
- Please describe any challenges you anticipate having around participation in the proposed intervention due to a lack of time or coordinating with work shifts.
- Please also describe any potential ideas/solutions you may have around timing challenges to participation.
- Please describe any concerns (if at all) you may have about the implications participation in the proposed intervention might have on your career.
- Please describe any challenges you anticipate having around participation in the proposed intervention due access to transport to the site. Please also describe any potential ideas/solutions you may have around transportation challenges to participation.
- Please describe how open you would be to learning about evidence-based coping skills within the proposed intervention.
- Please add any further comments you may have about the proposed intervention in the space provided below.

Appendix B


Recommendations for the Blue Light Surf Club in supporting the mental health of emergency service/healthcare workers in central Scotland.
Edinburgh Napier UNIVERSITY
Surf Lab
LOST SHORE SURF RESORT
BLUE LIGHT SURF CLUB
Intervention Access Recommendations
• The referral process would be easiest on an online platform
• The referral process should be as simple and transparent as possible.
• The intervention should offer multiple referral pathways to make the process as easy as possible for potential participants. These pathways could include but are not limited to self-referral, occupational health referral, other workplace referral and/or healthcare based referrals.
• The intervention should consider how to promote appropriate use of the service, in contrast to just accessing free surf lessons, within referral process design.
• The intervention should be advertised as broadly as possible both within work place and primary healthcare settings.
• The intervention should stress at recruitment it is accessible to all levels of fitness.
• The intervention should be aware and as flexible as possible with regards to attending around shift based work.
• It would be beneficial for the intervention to occur regularly over a long period to make up for missed sessions due to scheduling.
• The intervention should be explicit about there being no judgment over missed sessions.
• Attending the intervention in my spare time would not be a problem.
• The intervention should provide plenty of advance notice as to the intervention dates and times.
• Good public transport links would be beneficial for the intervention.
• Given the intervention is Edinburgh based, avoiding rush hour times would be preferable
Intervention Delivery Recommendations
➢ The intervention should maintain a safe space for all participants, free from judgment
➢ Perceptions around maintaining a 'stiff upper lip' or 'toughening up' should be challenged at the intervention.
➢ Anonymity should be maintained at all times around intervention.
➢ The intervention should not promise things it cannot deliver on.
➢ Promoting a healthy lifestyle would be a positive element to the intervention.
➢ The intervention should support participants in not isolating themselves.
➢ The intervention should positively acknowledge the nature of the work carried out by emergency service and healthcare workers. This acknowledgment should be structured so as to not be disingenuous, not reinforce any negative stereotypes and not risk any kind of flashback trigger.
Intervention Structure Recommendations
❖ The intervention should be structured completely independently of the workplace to protect anonymity and prevent stigma. However, this should not exclude possible collaborations such as team or organisational group referrals/workshops.
❖ The intervention should promote evidence-based/scientifically proven coping mechanisms.
❖ The intervention should provide information and support about accessing other services, if required.
❖ Positive examples and case studies would be helpful in promoting coping strategies.
❖ A work-place team referral option would be beneficial within the intervention.
❖ Where co-workers may be referred onto the same course (outside of team referrals), the intervention should check and accommodate participants preferences prior to course commencement.
❖ The intervention's setting outside of an office/classroom setting is a positive element to the intervention.