

**Excavating the past and (re)finding myself: Exploring archaeology's therapeutic potential with veterans and providers**

**Short title: Excavating the past & (re)finding myself**

**Data availability statement:** dataset is confidential, and therefore unavailable

Karen J. Burnell<sup>1\*</sup> and Paul Everill<sup>2</sup>

<sup>1</sup> Associate Professor of Applied Psychology, Department of Social Sciences and

Nursing, Southampton Solent University, UK

ORCID: 0000-0001-5328-2601

<sup>2</sup>Reader in Archaeology, School of History, Archaeology and Philosophy, University

of Winchester, UK

ORCID: 0000-0001-7868-7082

**Country of Study:** United Kingdom.

**Acknowledgements:** we express our gratitude to the veterans and providers who took their time to tell us their stories of participation. Without their expertise, we would have a poorer insight into this important area.

**Conflict of Interest Statement:** We have nothing to declare

**Funding:** This work was supported by a Research, Innovation, and Knowledge Exchange Award provided by Southampton Solent University.

**Ethical Statement:** The study was approved by Southampton Solent University Ethics Committee, and conforms to the British Psychological Society's Code of Human Research Ethics and Declaration of Helsinki. No reference number is available.

**\*Corresponding Author:** Dr Karen Burnell, Associate Professor of Applied Psychology, Department of Social Sciences and Medicine, Southampton Solent University, East Park Terrace, Southampton, UK, SO14 0YN

Corresponding author email address: Karen.Burnell@solent.ac.uk

## **Excavating the Past and (Re)Finding Myself: Why and in What Ways do Veterans and Providers Believe Archaeology Supports Mental Health and Wellbeing?**

### **Abstract**

Participation in heritage and archaeology is increasingly offered in the community to support mental health and wellbeing, particularly to groups experiencing mental health challenges. One such group are military veterans, who experience higher rates of mental health challenges but less help-seeking than the general population. Since 2011 archaeological projects have been offered to veterans to support transition, mental health, and wellbeing. Consequently, provision has become increasingly framed as an intervention, with evaluation focused on mental health and wellbeing outcomes. However, there is little understanding of why archaeology impacts positively. Adopting an interpretative qualitative approach, this study explored veterans' and providers' perceptions of how and why archaeology supports mental health and wellbeing. Interviews with five UK veterans and four providers of UK projects were conducted and analysed using thematic analysis. Three themes were developed, each with three subthemes. *Connection and belonging* captured feelings of projects being a *safe space*, experiences of *comradeship and peer support*, and outcomes related to *building social networks*. *Authenticity and purpose* concerned the importance of *participating authentically* and *contributing purposefully*, and how participation was *a catalyst for change*. *Meaning-making through the past* explored how veterans make meaning through *acts of remembrance*, the important supporting *role of professionals*, and subsequent *changes in wellbeing and mental health*. On balance, findings support the assumption that archaeology is a powerful non-clinical intervention for veterans, but suggests that while wellbeing may improve, mental health may not. Furthermore, potential mechanisms are suggested that must be explored further to improve practice in this area.

**Keywords:** archaeology, veterans, mental health, psychological wellbeing

## **Background**

### ***Archaeology for Veterans***

Many veterans in the UK benefit from their careers (Ashcroft, 2014) but evidence suggests that Common Mental Disorders (CMDs) are an issue for a small but significant minority at 38%, higher than the general population (Finnegan & Randles, 2023; Williamson et al., 2022). Posttraumatic Stress Disorder (PTSD) is estimated to be 17% for UK veterans deployed to Iraq and Afghanistan alone (Stevellink et al., 2018), and Complex PTSD (CPTSD) is particularly high among veterans (Murphy et al., 2020). While (C)PTSD is a barrier to health-seeking (Williamson et al., 2020), veterans also experience loss in relation to their career, social networks (Demers, 2011), and identity (Mitchell et al., 2020). Loneliness and social isolation are also significant concerns, with 1 in 4 veterans feeling lonely and isolated often or always (Royal British Legion, 2018). Help-seeking veterans, similar to those in the current study, report even higher rates of loneliness (79.1%), and low rates of perceived social support (72.2%; Williamson et al., 2022).

### ***Veteran Care in the UK***

In the UK, veterans are treated in the National Health Service (NHS), which provides medical and healthcare to the whole population. Despite specialist treatment pathways, uptake of services is low due to stigma (e.g. Sharp et al., 2015) and a perception that civilian services cannot support veterans' needs (Kitchiner et al., 2012). Indeed, needs may be too complex for General Practitioners (the first point of contact in the NHS) but not severe enough for intensive psychological interventions (MacManus & Wessely, 2013). In response, the charitable sector has mobilised to provide non-clinical recreational wellbeing activities in the community to support mental health and wellbeing (Cole et al., 2017), following a long tradition in veteran care. In recent years such examples include equine-assisted interventions (Boss et al., 2019), sports-focused activities such as surfing (González-Devesa et al., 2024)

and motorsports (Serfioti & Hunt, 2022), outdoor activities such as adventure-based therapy (Theal et al., 2020), and nature-based activities (Varning Poulsen, 2017) including gardening (Besterman-Dahan et al., 2021). Measuring a range of outcomes, these types of activities have shown improvements in overall wellbeing, as well as anxiety, depression and quality of life. Since 2011, archaeological fieldwork, framed as a non-clinical activity, has been offered to veterans to support their recovery.

### ***Archaeology, Mental Health, and Wellbeing***

Heritage connects us to the past. It includes the tangible, e.g. objects, sites, and landscapes, and the intangible, e.g. customs, beliefs, and traditions. Archaeology, a specific discipline within the heritage sector, enables access to both tangible and intangible heritage through excavation and the recovery of material culture, and in the interpretation and analysis it requires.

As indicated earlier, participation in archaeological fieldwork was provided to service personnel returning from combat as a form of rehabilitation (Finnegan, 2016; Nimenko & Simpson, 2014). These initial projects were framed as *organised outdoor activities* and group *activity psychological decompression* and, in keeping with other non-clinical interventions for veterans, offered in the context of occupational therapy interventions. Qualitative findings suggested that personnel benefited from being in a military-like environment with a clear mission, and in a therapeutic environment, which impacted positively on social networks and peer support, as well as mood, self-esteem, and stigma. Quantitative outcomes indicated positive changes in anxiety, depression, and functioning. In viewing archaeological fieldwork as an outdoor activity, parallels were drawn with horse-riding, flyfishing, gardening, and water sports. In doing so, understanding is gained in the way in which these activities may provide respite as well as peer support, which is critical for veterans (Mercier et al., 2023), and forms the core of many non-clinical, psychosocial interventions. However, these parallels

render the interaction with heritage and the archaeological context to that of the backdrop to physical activity, rather than providing any value of their own.

These initial projects inspired many other organisations to support the mental health and wellbeing of veterans through archaeology in the UK and internationally (see Everill et al., 2020 for an overview). Evidence suggests wellbeing uplifts, particularly for subjective mental wellbeing, and in some cases a reduction in CMDs, specifically anxiety and depression (Dobat et al., 2019; Everill et al., 2020; Ulke et al., 2021). The importance of camaraderie and connection has also been highlighted (Everill et al., 2022). While these projects certainly acknowledge the role of archaeology as different from outdoor activities, evaluation has remained predominantly outcome-focused, as have a number of projects that aim to support civilians.

### ***Archaeology as an Intervention***

Projects offering engagement with heritage are increasingly social prescribed (Historic England, 2019), which is unsurprising given the global efforts in place to seek ways to bridge the gap between clinical and non-clinical care (Sonke et al., 2023). For heritage specifically, there is growing evidence of positive impacts on physical and psychological health (Mughal, et al., 2022). Perhaps due to the context of social prescription in bridging the clinical and non-clinical divide, the framing of projects as interventions, terms such as *archaeotherapy*, *therapeutic archaeology*, *cultural heritage therapy*, *archaeology and heritage on prescription* are increasingly used to describe archaeology and heritage projects that aim to support mental health and wellbeing. Using these phrases mimics terminology used to describe standardised therapies that centre on art and culture, such as art and music therapy. However, these heritage projects cannot be considered a therapeutic approach because there is no agreed method of delivery nor a robust evidence base. Put simply, we do not know how these projects work. Consequently, delivery and assumptions about the therapeutic value of

engagement have leapt ahead of theory and evidence. Not only does this have implications for effectiveness and the safety of those involved (Burnell et al., 2024) it also does not acknowledge the unique contribution of engagement with the past on our mental health and wellbeing.

### ***What Do We Currently Know?***

When the specific context is examined, further insight is gleaned. Historic England raise the possibility of *Heritage for Healing*. This recognises that meaning-making processes triggered by working on historical sites parallel recovery models of mental health (Reilly et al., 2018). Furthermore, McMillan (2013) argued that opportunities to engage with the past in the specific act of archaeological excavation offers exploration of personal understanding as well a reclaiming of identity. The concept of therapeutic landscapes is important here too. However, rather than simply being a non-clinical supportive space, the humanities suggest that historic landscapes have additional benefit for mental health and wellbeing (Heaslip et al., 2020; Neal, 2015), as they allow us to experience existential relatedness and ontological security (Nolan, 2019a; 2019b).

To understand the mechanisms or active ingredients of these projects, two realist reviews have been conducted to date. Gallou (2022) suggested that different types of engagement may lead to different types of benefits, with a particular concern that eudemonic wellbeing is underrepresented in the current evidence base, indicating that a holistic view of psychological wellbeing is required. While Burnell and Woodhouse (2022) focused on active participation of those living with mental health challenges to produce a potential theory concerning the contexts and mechanisms that may improve wellbeing. In both cases, concerns were raised as to the explanatory power of the current evidence calling for more research about specific participant groups and activities.

Consequently, the present study explored the experiences of veterans as one of the largest groups involved in archaeology for mental health and wellbeing. The aim was to understand their perceptions, as well as providers' perceptions, of how involvement in archaeology impacts mental health and wellbeing. In this study, wellbeing is defined as psychological wellbeing and mental health is considered as the decrease or absence of symptoms of mental illhealth e.g. CMDs. The research question was; why and in what ways do veterans and providers believe archaeology supports mental health and wellbeing?

## **Method**

### ***Design***

An interpretative qualitative approach featuring one-to-one semi-structured interviews allowed exploration of veterans' and providers' lived experience. Critical to this approach was a contextual understanding of how veterans had come to be involved in archaeology, as well as the researchers' own understanding playing a role in interpretation. Positionality must be considered. As a narrative psychologist, the first author has experience of researching how veterans make meaning of their experiences, particularly in the context of trauma, and the role of social support. The second author is a field archaeologist, who has worked with veterans during excavation, and has himself experienced the therapeutic potential of archaeology. This insight allowed us to appreciate the complexity of the subject, but we were mindful to listen to and represent counter-experiences.

### ***Participants***

Five veterans and four providers of UK veteran archaeology projects volunteered to take part in the study. Although a small sample, the population drawn from is not large and the recruitment materials made it clear that those who might find the subject matter too sensitive should not participate. It was also important that the sample was homogeneous to allow for

rich description and deep analysis. Therefore, the sample was considered adequate for the purpose of the study (Vasileiou et al., 2018). In terms of demographics, it is not possible to provide gender and age as it would make the individuals highly identifiable, particularly for the veterans who also spoke about their service, and in the context of this small and tightknit community. More relevant is that all veterans became involved due to a love of history, and some felt it could support their wellbeing and/or mental health and increase their social networks. Four of the veterans were receiving mental health support from veteran charities, who signposted them to archaeological projects, and all had participated in multiple projects. The four providers, two with a service background, were involved as volunteers or organisers of UK-based veteran initiatives.

### ***Materials***

Semi-structured interviews were conducted on Microsoft Teams and recorded using a password-protected audio recorder. The interview schedules were developed from previous research conducted by the team concerning the evaluation of non-clinical interventions. Questions encouraged participants to reflect on their reasons for involvement and what they had hoped would improve for them. They were also asked about their experience of engagement, both positive and negative, and the changes they believed were associated with participation. Reasons for these changes were also explored. Providers were asked about their role in projects, the types of changes they had witnessed for veterans, and why they believed these changes had happened. In both cases, the interview schedule was adapted throughout in line with the ethos of semi-structured interviewing, to allow for deep exploration and development of ideas.

### ***Procedure***

Veterans were recruited via a letter of invitation circulated by a gatekeeper to the veteran archaeology community and participants contacted the first author. Providers were contacted

directly by the first author. All participants provided informed consent prior to the interview, which was confirmed before the start of the interview. All participants were debriefed. The first author conducted all the interviews, which were transcribed verbatim.

### *Ethical Considerations*

The study was approved by Southampton Solent University Psychology Ethics Committee, and carried out in accordance with the British Psychological Society's Code of Human Research Ethics and Declaration of Helsinki. Given the sensitive nature of the research, measures were taken to protect participants. Informed consent was ensured by providing an information sheet clearly detailing the nature of the project along with potential risks to participants. Confidentiality and anonymity were also explained. It was made clear that confidentiality was assured unless the participant indicated they were at risk to themselves or others. In this event, a co-produced plan for further support would be made. Participants were also assured that their participation would be anonymised, but that due to the use of quotes, they or those familiar to them, may recognise them from their words. Participants were reassured that they could withdraw at any time without negative consequences to the support they receive now and in the future. We made it clear to veterans that initial contact was made by a gatekeeper and not the research team to reassure the community that we did not have their contact details. When potential participants made contact, they included the signed consent form. At each stage of communication from setting up the interview, to confirming the interview, to the start of the interview, consent was checked and agreed with the participant. At the start of the interview, participants were reassured that they could withdraw from the study at any time. A plan to manage potential distress was also key. If a participant became distressed, the interview would stop. The researcher would reassure the participant that they could terminate the interview should they wish too. Otherwise, the researcher would hold the space until the participant felt able to continue. It would always be the participants'

choice to continue. Sending the debrief form after the interview was also an important opportunity to check the welfare of participants, and the debriefing form also provided details of relevant support services. All data were kept in password protected cloud-based storage and were subject to data retention schedules.

### *Analysis*

In line with an interpretivist approach, an inductive thematic analysis was conducted (Joffe & Yardley, 2004). Themes (specific patterns of interest) were identified at the latent (implicit) and manifest (explicit) levels. The first author carried out initial *in vivo* coding within units of meaning, such as sections of sentences, whole sentences, or paragraphs. These initial codes were then grouped and initial themes developed. Refinement of the themes was carried out in discussion with the second author. In these discussions, alternative thematic groupings and different definitions were debated until agreement was achieved. Originally, we had planned to analyse the veterans' and providers' transcripts separately with the intention to provide two thematic frameworks. However, the initial coding of the transcripts indicated that the experiences of both the veterans and providers were strongly aligned. Due to these synergies, the final themes incorporated both groups of participants. Even so, it remained important to understand similarities and differences within and between participants, and a matrix was produced to facilitate comparisons and aid interpretation.

### **Findings**

Three themes were developed 1) *connection and belonging*, 2) *authenticity and purpose*, 3) *meaning-making through the past*. Descriptions of themes and sub-themes are presented in Table 1.

*[Insert Table 1 here]*

### ***Connection and Belonging***

Feelings of connection and belonging were associated with the location and nature of the projects. Projects were *a safe space* because of the military-related archaeological context and geographic location, and opportunities for respite during projects. Many of the projects were veteran-only, which provided an immediate connection and sense of belonging through *comradeship and peer support (past and present)*. These two potential mechanisms of change seemed to lead to an outcome; veterans were able to *build social networks* that lasted beyond the length of the projects.

#### **A Safe Space.**

The archaeological context of projects ranged from Saxon cemeteries to sites of historic and modern conflict, but battlefield sites created immediate connection. When veterans talked about projects they were involved with, it was the military connection that led to a sense of familiarity and safety. Veteran 1(V1) explained how they had opportunities to *touch the subject* they were interested in, and all veterans described how the military connection had encouraged them to take part. As V3 explained:

As military personnel you associate with the deeds that you see from the past, [], these warrior deeds and stuff like that is what you hear about from these past cultures [] And so you can associate with that much more than you can with anything else that ... [] Everyone was [sic] warriors so they can jump into that side of archaeology. (V3)

Even when the archaeology itself was not military, fieldwork carried out on Ministry of Defence land provided connection and safety, as highlighted by V4:

My protection is sort of like I'm in my house, it's my area, I'm in my car, it's mine, it's my area. [Location] is a military area, I'm protected. (V4)

In the safe, military-like environment, veterans felt able to look after their individual needs by taking breaks if they needed them, or changing the type of activity they were doing. V4's experience of working in the finds tent rather than digging highlights this and they explained how this gave them much needed space to adjust to being with others on the project:

I'm in the finds tent, I'm normally left on my own, and you've probably got one or two people there helping out towards the end of the week but the first couple of days I'm there on my own, so I get that window of there's nobody around, I get to calm down, I can sort myself out. (V4)

For others, it was the open landscape that allowed them to take a break from tasks when they experienced difficult emotions:

And on occasions where I've been somewhere and I've had a bit of a wobble, I used to have to take my camera with me, so I'd get myself out of the hole and I'd just walk away and take photos of everything and anything sort of thing. Get my head back together and then get back to ... I can go back again. (V5)

Just like the veterans, providers also felt the flexibility and range of activities created a safe space, which supported mental health and wellbeing. In the following quote, Provider A(PA) explained their changing attitude towards what it meant to participate, and they had come to appreciate the power of the *space*:

That's been me in my draconian phase, 'You said you're here to do archaeology, you should be doing it!' Maybe actually what it offers, is it offers a space and they take from it what they need. (PA)

Despite the positives, disadvantages to being on military land were highlighted. Some veterans spoke of the *potential negative* (V3) experience of hearing gunfire, helicopters, and tanks. In response to these experiences, both veterans and providers explained how the safe space was maintained:

But the rest of the team knows about this and so will talk loudly to them if they can hear a chinook and they will then have time to put their earphones on and get the music going before it goes over. (PB)

Through connection comes a sense of belonging, and veterans also felt connected to the people on projects. This may be because most projects were exclusive to veterans (veteran-only) and being with veterans seemed to be a strong motivator for involvement. Both veterans and providers felt the veteran-only community added to the safe and familiar

environment. In the following quote a provider suggests that the veteran-focused nature of the projects might be *central ingredient*:

I think the community aspect in terms of like-minded psychological safety, neutral peer support, the culture, i.e. the banter aspect, a safe space for a group that's been affected but they've come from a particular tribe i.e. in this case the military, I think that's the central ingredients. (PC)

Not all projects are veteran-only, and almost all participants had experience of working alongside civilians. In some of these projects the civilians were volunteers, while in others they were participating because they experienced mental health challenges, just like the veterans. The veterans spoke about being apprehensive of these projects at first, but how they had ultimately enjoyed them. However, civilians seemed to be expected to assimilate into the military environment created by these projects, such as its importance:

When you do the long, three-week one, the first week you're like ooh, they think we're cutting close to the bone; by the second week, they're getting used to it; the third week they're joining in. Because that's what happens [] But if you've got a lot of civilians there, I don't think it would be the same. (V4)

Although veteran-only projects felt safe, there was some concern that this may provide short-term benefits but not longer-term change, such as transition:

They're [excavations are] time out of your life. You walk onto the site; your life that you're ... I don't know if you are struggling, struggling through at the moment, stops, the atmosphere around you with the modern social conditions drops away, you travel back into time so you're with friends, even if you don't know them, because they're military they're friends. (V3)

While this may impact on the transition of veterans, there is no negative impact on their wellbeing. However, negative outcomes did seem to be experienced when projects brought together veteran and civilians experiencing mental health challenges. In particular, PA reflected on such a project, and clear in the quote is a sense that the safe, familiar, environment had been impacted by mixing groups:

I think last year was the only time where I ever saw some really negative reactions occurring because of new people what were in the mix, that weren't military, that had no real connections with any of us, they had just almost been parachuted in. [] it completely and utterly, I will say this, it destroyed the dynamic []to an extent

where people who had generally got on well together, were having adverse reactions. (PA)

### **Comradeship and Peer Support (Past and Present).**

As well as providing a safe space, being part of veteran-only projects also provided an important sense of comradeship. In particular, it helped some understand they were not alone in finding life difficult after service:

But some of these guys that I was working with, I almost felt I didn't deserve to be with them because I didn't feel that I was suffering anything like they were, but they were very quick to reassure me that my sufferings might seem less to me in comparison to them, but to them, it seemed just as bad. And I found that really enlightening. (V2)

Both veterans and providers felt that when veterans felt understood, they were more likely to share experiences with others and to some extent find resolution, even if this was not a key objective of the projects:

It was good that we also had something in common to talk about, but it wasn't the main goal. I think everybody coped a little bit with [their] own ghosts, [their] own way, but we also had this exchange, we had laughter and all that stuff. (V1)

Clear in the quote above is that comradeship provided opportunity to talk. Sharing experiences in this way also led to opportunities for peer support, characterised by the purposeful intention to help others through one's own experience. Two veterans had taken on a semi-formal peer role, listening to others and signposting to services:

If somebody wants to talk about it then you listen and you talk about it and you say, like I say, you might turn round and say this works for me, have you tried this, have you spoke to these people, have you ... different things. So sometimes it's just having a laugh and then other times it's ... sometimes it can get quite serious. But it's all about shared experiences. It seems to be the main thing, whether they be good or bad. (V5)

However, while this type of peer support was naturally occurring, PA suggested that peers must be adequately trained and supervised if this type of support is to result in positive outcomes:

They will listen to other people tell their story, or ... but sometimes I just wonder whether that story just keeps going round and round, as opposed to making an intervention that might move it, shift it slightly in another direction, or actually

become a little bit more knowing about something [] So, the peer support element is really good for individuals, however there's a little bit of me that goes, 'I wonder, if we had somebody that was really skilled as a therapist in amongst us, that they might be able to make more of a, ... 'A professional intervention,' which is perhaps required .... (PA)

Comradeship and peer support did not only occur between veterans in the present, but were felt by those excavating the remains of the fallen. This was experienced by the veterans and witnessed by the providers, and is a novel and moving discovery:

It makes me emotional as well at the time as I speak about it, because it was a little bit abstract, that I got so emotional about this person whom I've never known, but I think that was also for everyone a quite emotional moment because somehow we all were connected to these people who we have never met. (V1)

PB explained how working with soldiers' remains is particularly salient because "*they can equate entirely with that, it's their friends*", and that working with human remains allowed veterans to process experiences, as might happen between peers through conversation. The sense of camaraderie is palpable in this quote:

And we also saw that the guy excavating the German soldiers was able to talk to them, in a military thing. So, you're talking to skeletons, but he's talking from his own experience about what's happened to his mates and just reassuring that the German guys that they've been found, were not going to be left anymore and would be brought back. (PB)

### **Building Social Networks.**

The support experienced during the projects lasted beyond the projects too, with veterans enjoying increased social networks:

And I'm now happy to say that I've got a much larger social circle than I ever had previously, and a lot of that is down to the people I've met. (V2)

Furthermore, archaeology as a shared interest allowed veterans to make and maintain these networks. For some, connections were maintained by returning to projects, while others kept in contact on social media. Concerns about dependency on projects arose (also mentioned later); however, it is important to consider the importance of developing new

interests. By reframing involvement from an intervention to a new hobby, the relevance of dependency is naturally questioned:

An individual goes on one, loves it, and then is signing up to the next opportunity six months later, nine months later, a year later, so you could say there is a continuity and actually is that wrong? That might be like paying to go on a dig in my holidays each summer because that's what I love doing. So is there anything wrong with that? (PC)

Taken together, veteran-only projects concerning military archaeological contexts provide a familiar safe space for veterans who connect with one another as well as the archaeology and land. These connections provide a sense of belonging, opportunities to share experiences, and peer support with peers both past and present. Ultimately, these feelings of belonging survive beyond the project, as veterans build and maintain their (virtual) networks through shared interests.

### ***Authenticity and Purpose***

This theme explores how veterans are *participating authentically* through the application of their existing skills on real projects. Through this, we examine how they *contribute purposefully* and how this maintains a sense of identity. These two mechanisms be a *catalyst for change*, leading to increasing sense of self-efficacy as an outcome.

#### **Participating Authentically.**

For veterans and providers, the authenticity of the work was central. To be part of a real excavation with aims and objectives was key. As V1 stated:

It was really about the archaeology site, to find more about this place, to find more about this situation there. (V1)

Furthermore, it was critical that veterans were engaged in the same activities as the archaeologists. The importance of this authentic participation was strong throughout the interviews, and is particularly evident in the quote below:

[veterans on other projects told me they] were moving tents and doing this and that, and they weren't getting any hands-on experience of any of the archaeology

whatsoever. Whereas when I come back and said about my experience with [project] saying oh yeah, OK, they teach you from the start, but once you start digging and you're in a hole and you follow it right through. Nobody else'll [sic] touch it. So it gave me the opportunity to learn and progress as you're going along. (V5)

Furthermore, there was an emphasis on the importance of being taught to do things correctly and doing a good job, so that it was more than just '*digging an 'ole!*' (PB). V4 explained the importance of getting things right not only for the project, but for oneself:

And they look at me going, 'You know this anyway,' and it's, 'Yeah, but I wasn't sure and if I'm less than 60% sure and I damage something, I'm the one that looks like an idiot, and I'd rather stop and say I need clarification ... got it, thank you very much, and then progress. (V4)

Beyond involvement in authentic excavation, vital to veterans was that finds were authentic too; that real discovery was happening and that they were engaging with the past just as archaeologists would. PA reflected on an event in which the veterans accused them of staging a dig:

[The veterans said] You just laid this all out, just laced the site so we can just find stuff' [] The answer was we hadn't, it was real, but you could see there that they didn't want to be just fooling around and playing, there had to be reason, [] And so, actually being able to do something that is real, worthwhile, tangible, with a result, it's a proper project. (PA)

Ultimately, in most transcripts, the notion of authentic participation in high-quality archaeology was linked with positive outcomes; that is, projects and participation must be real for veterans to benefit:

One [aim] is to improve situations for the people who participate, and the other is to do high-quality archaeological fieldwork. Now of course we wouldn't be there if those two didn't dovetail perfectly. (PD)

### **Contributing Purposefully.**

As well as participating authentically, it was vital that contribution was purposeful, and that veterans' involvement made a material difference to the project outcomes. PA spoke

of *mission* being a *military thing*, and all participants spoke of the importance of working as a team to achieve a common goal and why these projects may be particularly attractive to veterans:

The kind of people that are attracted to it are the sort of people that are used to working on to get a job finished, regardless of what it takes from them. Which again is why I think veterans are drawn to it. (V2)

While *mission* is central, participants also emphasised the transfer of skills and knowledge that may be particularly pertinent in military contexts. V1 explained how knowledge of trench formation allowed them to excavate a WWI trench efficiently:

We also knew that it would have different layers and that we would expect ... for example there was a very ... different colours in the earth, where it was dark coloured there was a natural colour, and where it was very bright coloured, that was colour earth which had been in the sandbags. And the usage of sandbags is still a common thing in the military today (V1).

Contributing purposefully also led to total immersion i.e. the sense of flow experienced when engaged in a meaningful activity, which was captured by V2:

When you're in a trench and you've got a trowel and you're concentrating like anything to take fine layers of soil down bit by bit as you unearth something, it's a really strange feeling but there's like, when I'm doing anything else, even if I'm busy working at home quite often, I get other thoughts come into my head while I'm doing things. But when I'm doing the archaeology, I'm just so focused on it. I don't know what it is, it's a strange thing. (V2)

This total immersion gave veterans respite from their mental health symptoms, at least for the duration of the excavation. Providers felt similarly, explaining that immersion results from the attention to detail required for a high-quality contribution:

Now as I said, keeping busy helps prevent rumination and it's particularly the concentration aspect of keeping busy. When you're trowelling away at the bottom of a trench or whatever, you are concentrating wholeheartedly on what you are doing. You're constantly looking at that area to see if there are changes in soil colour to see if any small artefacts are starting to emerge out of the soil, and that I think is an essential thing for driving out intrusive thoughts and harmful ideas. (PD)

The similarity between the quotes above is striking. Both the veteran and the archaeologist give the same level of detail about process, emphasising why purposeful contribution in conjunction with authentic participation may be vital.

### **Catalyst for Change.**

Being part of a real excavation and contributing to outcomes seemed to be a catalyst for change. Most veterans spoke about increased confidence and sense of purpose after participation. Some also spoke about a growing sense of capability, interpreted here as self-efficacy:

It's definitely ... changed my attitude towards me. Made me realise that I can do more than I gave myself credit for. (V5)

Providers had also seen these changes. Just like veterans, they felt the biggest catalyst was veterans (re)finding their capabilities:

So, you've got all these things where I think it's opening their eyes to their own capabilities. (PB)

Veterans spoke about other changes attributed to participation, including increased help-seeking, developing other interests, and further study. Perhaps most powerfully, participation had led to employment:

And I think ... I would say going on the dig gave me the confidence to do the job I'm doing now. (V5)

Overall, taking part authentically and with purpose seemed to impact veterans. Making a genuine contribution to real projects by using existing and new skills created opportunity for change that went beyond the duration of the projects.

### ***Meaning-making Through the Past***

Participants spoke in depth about how working with the past, particularly with confronting battlefield archaeology, provided opportunities for meaning-making. This was through *acts of remembrance* when veterans had opportunity to work with human remains of the fallen and associated finds. Providers (but not veterans) highlighted the risks of working with confronting themes, and the *role of professionals* captured why they felt professional support should be present in projects. Finally, the extent to which these two potential mechanisms had led short and long-term *changes in mental health* were discussed.

#### **Acts of Remembrance.**

Both veterans and providers shared experiences of the power of working with the past. In part, this power comes from the connection through the unique hands-on, tangible, nature of archaeology:

And like I say, it's the only time that you actually get to hold history in your hand. You won't get another opportunity [] 'this pot's 3,000 years old and it's got somebody's fingerprints on it.' (V5)

In the military context, this tangibility facilitated opportunities for acts of remembrance and laying to rest was a powerful subtheme. All participants emphasised the importance veterans placed on this activity. For some, working with personal belongings of the fallen was also powerful. V4 spoke about working with personal items, later explaining how their role in the military had been to recover personnel and belongings. The quotes below contain striking parallels, and the continuation of identity is clear to see:

Working with archaeological finds: Yeah, because to somebody that's important or it would have been important [] And when it comes to somebody's buttons, it might have been something they polished every day. The fact that that were wearing them, that was his coat. (V4)

Recovering belongings: [family member asks] 'If you happen to find this watch, could you let us know because it's got so-and-so written on the back.' Or the wedding ring. And you've already found it but it's in such a state you wanna clean

it up... you don't want 'em having it in that state and you sort of [say]... 'If we find it, we'll get it to you' and within about a week we'll let them have it, but we'll have time to clean it and things like that. 'cause we just don't want 'em getting it in that state. (V4)

For others, meaning came from excavating human remains and finally laying those individuals to rest. For instance, V2 spoke about laying to rest those excavated from a plane crash site and the actions taken by the group to remember them:

We made a memorial to the three guys that were killed as well, and put that on the site. And that I found very moving. (V2)

Others spoke about excavating the remains of fallen German World War 1 soldiers. In most cases, veterans sought to make sense of the feelings they experienced when working with human remains. For instance, in the quote below, V5 tries to make sense of the impact of working with the fallen compared to those laid to rest. The juxtaposition is powerful:

We found the German soldiers, me and two other guys stayed out overnight. There was a big massive thunderstorm and all that. And <sighs> ... just sort of a surreal experience [] basically he was left where he fell [], whereas all the other digs, the Anglo-Saxon graves [] were all laid out with such respect. [] I think it <sighs>, was definitely a different kind of dig. And a different kind of experience. (V5)

Laying to rest did not only refer to human remains, but also one's own traumatic experiences. Both veterans and providers spoke of these opportunities, and a powerful example was retold by V4 who had witnessed another veteran, an amputee, excavate the remains of a lower limb:

He didn't realise at the time that that was all that was there, but as they went up the boot thinking oh my god, here's part of the bone, we've obviously got the rest of him, and it just stopped, he just looked and went ... 'That's my foot!' And when he left, [conflict site], he knew nothing about [what had happened]. Next thing he knew, he was back in the UK [] And from what I understand, just speaking to him and the guys around 'cause obviously they were with him, he found it very therapeutic 'cause he was actually saying goodbye to his foot. (V4)

Throughout, it was clear that veterans engaging in battlefield archaeology may provide a unique therapeutic opportunity due to the *thread of humanity* that engaging with the past

provides. PC summarised the impact of recognising the self in the past particularly articulately:

There is an X factor and I think it has something to do with that shared military culture. Maybe there's modern archaeology has that potential face, that much closer family connection, going back [] I think there is some meaning making. I think if we take the military one, even if it's an Anglo-Saxon warrior, never mind a German soldier from [name of site], I think there is something about this thread of humanity, that this is a shared experience that is timeless, and I do think that is a factor because if you're looking for justification of perhaps suffering or consequences from your service, knowing that it is age old or it is something that is just imbued in the human condition, there's almost a permission, there's something about that [] that makes it ... not alright, but less not alright. (PC)

### **The Role of Professionals.**

With the opportunity to make meaning comes risk, and providers, but not veterans, spoke spontaneously about the importance of mental health professionals' support on site, especially when the archaeology could be confronting. PB reflected on the safeguarding responsibilities that should be held by providers:

So, if someone says you are putting someone in place where there's likely to be traumatic archaeology uncovered, why the hell didn't you have a medic that will deal with that in place? (PB)

Furthermore, providers gave examples of the role professionals had played in supporting veterans on site. PC provided a powerful example of a mental health professional turning a potential risk into a positive therapeutic experience:

When we found the tank track, it had dead German soldiers underneath it and the chap digging it was tank regiment and he'd lost colleagues, so he automatically equated the two, his experience and when he was excavating, and that acts as obviously a massive trigger for PTSD. But having the capacity to deal with that, having the right clinical support with you, meant that that was dealt with and he was able to finish the excavation in a really positive way. So, rather than avoiding anything, you can face your demons. (PC)

### **Changes in Wellbeing and Mental Health.**

Noticeable in this subtheme was the absence of talk about impact on mental health, and participants seemed to talk exclusively about wellbeing. Furthermore, there was contradiction

in both veterans' and providers' transcripts concerning the extent to which changes in wellbeing were short or longer-term. PC raised concerns about the short-term nature of outcomes and highlighted the risk of dependency, echoing earlier discussions about hobbies vs. interventions:

It's a shot in the arm, and then the only way they can get wellbeing is then to repeat the exercise at some point in time and then you create the dependency. (PC)

While providers explicitly raised these concerns, tension between short and long terms change were more implicit in veterans' transcripts. While the veterans tended to feel the impact on wellbeing was longer lasting, when they spoke about change there was a sense that it was not long-term. V2 provides a good example of this, explaining the deterioration felt when not participating in fieldwork, which suggests a short-term uplift:

But I'm firmly convinced now that it is, because I know from my own experiences how my contrasting sense of wellbeing when I start, is enhanced by my being there and, consequently, how it deteriorates when I'm not there. (V2)

Battlefield archaeology in particular seemed to provide meaning-making opportunities for veterans, but with this comes risk and the importance of professional support was emphasised by providers. Furthermore, there was also a question as to the longevity of change experienced by veterans. Finally, the absence of talk about changes in mental health was interesting. While meaning-making may occur on site, this may reflect the start of a journey towards improved mental health, but no immediate improvement.

## **Discussion**

This study explored veterans' and providers' perceptions of how archaeology impacts mental health and wellbeing. Three themes were developed, and each provide insight into two mechanisms that may facilitate change along with an associated outcome, offering a potential theoretical model.

## *Interpretation of Findings and Implications for Project Provision*

### **Connection and Belonging.**

A sense of connection and belonging to fellow project participants, archaeology, and land seemed vital to veterans. The sense of connection and belonging broke down barriers to participation, and the safe space provided a nonjudgemental environment. This support also seemed to continue beyond the life of discrete projects, providing a much-needed social network. While these findings complement Finnegan's (2016) study, stronger in the current study was the connection to the land, not just as a non-clinical space, but because the land itself was military or the archaeology had military connection. The landscape and people in this space seemed to have therapeutic potential, complementing understanding of how (pre)historic landscapes impact wellbeing through existential relatedness. Furthermore, the qualitative approach revealed the inherent flexibility of these projects to support the varying needs of the veterans, and emphasises the importance of providing a range of activities.

Peer support, a core feature of psychosocial interventions, was also highlighted by participants. However, unique in the current study was the possibility of *past peer support* arising from the bond felt between the veterans and the fallen. While separated by years and conflict, they were united in experience. Once again, a concept from heritage studies provides an explanation in the form of ontological security. The connection felt between us and someone like us in the past could promote a sense of continuity and stability. In terms of project design, the findings also suggest that peer support could be formalised through training to enhance the therapeutic potential of projects.

### **Authenticity and Purpose.**

Providing opportunities to engage with real projects and being given specific roles seemed critical to veterans' outcomes and should be a key component of project design. Through this, veterans rediscovered a sense of themselves and gained stability, through a renewed sense of confidence, capability, and purpose. Rather than focusing on how veterans' existing military skills are transferred to archaeological excavation (e.g. Finnegan, 2016), the current study shows that authentic engagement with, and learning about, the archaeological process is key. The desire to participate authentically conveys a sense of trust, purpose and respect, fundamental for recovery (McMillan, 2013). Furthermore, a re-finding a sense of capability was experienced. Interestingly, the act of excavation itself seemed to provide respite from symptoms of mental ill-health and veterans experienced a feeling of immersion that was quite rare for them.

### **Meaning-making Through the Past.**

This last theme was perhaps the most powerful in enhancing current understanding of how engaging with the past may impact wellbeing in the present. In the current study, participants provided clear and detailed explanation of how meaning-making is triggered; it is through finding synergies between ourselves and the past, and the slow and careful process of excavation, that provides time and space to make sense of our past experiences. For veterans, this was triggered by working with human remains and subsequent acts of remembrance and laying to rest. Meaning-making is central to how we make sense of our experiences and enhances our sense of wellbeing and identity, but it is particularly relevant in the context of trauma. Catastrophic experiences challenge our perceptions of the world and ourselves, and integration into the personal narrative is problematic (Janoff-Bullman, 1992). The current study suggests there is opportunity, particularly in battlefield contexts, for veterans to work through trauma, not through words but through physical processes and inward reflection. In this sense,

engaging with military contexts becomes a therapeutic opportunity to ‘find oneself’ in the past. However, the inherent risks of engaging with potentially confronting material emphasises the vital role professional mental health support in project delivery.

The current study also provides further justification to critique the current evidence for focusing only on the reduction in CMDs and uplift in subjective mental wellbeing (Gallou, 2022). The participants did not talk explicitly about CMDs. When veterans and providers spoke about changes in wellbeing (perhaps also meaning mental health), the decrease in symptoms seemed to only last for the duration of projects. This may suggest that, while archaeological excavation may provide respite, it is less effective as a mental health intervention targeting CMDs. Instead, the current findings suggest improvements in purpose, identity, meaning, self-efficacy, and growth. These are central components of eudemonic wellbeing (Ryff & Keyes, 1995). This is an important finding as it suggests that projects may support growth, rather than address deficit. Consideration must be given to what are considered relevant outcomes moving forward, particularly in terms of type of wellbeing measured. Furthermore, it highlights the importance of defining key terms and clarifying what is being measured and why.

### **Strengths and Limitations**

This study provides new insight into the impact of archaeology through its interdisciplinary approach, drawing on both health and heritage literature and providing new theoretical insight. Participants spoke freely, providing rich accounts of their experiences, despite the interviews being held online. Though small, the sample population drawn from is also small. Importantly, all veterans had experience of all the UK veteran initiatives and were able to compare across projects. As such, the findings are unlikely to be associated with a specific project and may transfer to veteran initiatives offered beyond the UK. In addition, the findings may also support the development of emerging archaeological projects for other uniformed professionals, such as front line blue light workers.

Most of the veterans were receiving mental health support at the time of the study. This situates the role of these projects as complementing rather than replacing formalised mental health interventions. It also allowed for perspectives to be explored during the journey of recovery, perhaps allowing veterans to reflect on the ways in which archaeology has supported them so far. While the current study provides insight into the experiences of veterans, careful consideration of the transferability to other participant groups and contexts should be considered. Most of the veterans lived with trauma associated with their service, and they spoke in rich detail about the meaning-making opportunities associated with archaeology, but the one veteran who did not live with psychological trauma did not speak about meaning-making. Therefore, it may be that these findings provide insight on how archaeology and heritage broadly support those living with trauma, but not other mental health concerns. Another consideration is that all the veterans in the sample had been supported by these projects. Missing from the sample were those who had not found projects useful, or who had been negatively affected by them. Hearing the voices of veterans with less positive experiences may increase understanding of barriers to participation, as well the negative impacts on projects. In terms of providers, there was the absence of mental health professionals' voices because few are involved in projects. However, their voices could have provided more insight concerning risk as well as providing a psychological perspective on how and why archaeology impacts on veterans. Future research should capture their voices.

## **Conclusion**

Veteran focused archaeology in part developed to support veterans finding it difficult to engage with formal treatment pathways. Perhaps due to this, these projects focused on evaluation of CMDs and subjective mental wellbeing, much like standard evaluation of psychosocial interventions. In taking this approach, understanding how archaeology impacts

on mental health and wellbeing and whether these outcomes are the most relevant to measure, has been lacking. Taking an interdisciplinary approach, this study provides further insight into the ways in which archaeology may support wellbeing, but perhaps not mental health, with implications for further research and practice in this area, particularly concerning the powerful opportunities for meaning-making.

Table 1.

*List of Major and Sub-themes with descriptions*

<i>Major Theme</i>	<i>Description</i>	<i>Sub-Theme</i>
Connection and Belonging	Describes how the military context of projects provides a sense of connection and belonging, leading to projects being a safe space, opportunities for peer support, and can help build social networks.	A safe space Comradeship and peer support (past and present) Building social networks
Authenticity and Purpose	Explores how veterans participate authentically and contribute purposefully in real projects using existing skills, and how this can be a catalyst for change.	Participating authentically Contributing purposefully Catalyst for change
Meaning-making through the past	Illustrates how the potentially confronting nature of excavation can lead to meaning-making through acts of remembrance, and the role that professionals have in this process. Changes in wellbeing and mental health are considered.	Acts of remembrance The role of professionals Changes in wellbeing and mental health

**Acknowledgements:** we express our gratitude to the veterans and providers who took their time to tell us their stories of participation. Without their expertise, we would have a poorer insight into this important area.

**Conflict of Interest Statement:** We have nothing to declare

## References

- Ashcroft. (2014). *The Veterans' Transition Review*. London: Lord Ashcroft KCMG PC.  
<https://www.veteranstransition.co.uk/wp-content/uploads/2024/02/vtrreport.pdf>
- Besterman-Dahan, K., Bradley, S. E., Arriola, N. B., Downs, K. (2021). Blocking out the rabbit holes: Photovoice and community gardening as a healing space for veterans. *Wellbeing, Space and Society*, 2(1). <https://doi.org/10.1016/j.wss.2021.100061>
- Boss, L., Branson, S., Hagan, H., & Krause-Parello, C. (2019). A systematic review of equine-assisted interventions in military veterans diagnosed with PTSD. *Journal of Veterans Studies*, 5(1), 23–33. <https://doi.org/10.21061/jvs.v5i1.134>
- Burnell, K. J., Everill, P., Makri, E., Baxter, L., & Watson, K. (2024). Developing the AMPHORA policy guidelines for heritage projects as mental health interventions: a Delphi consultation. *Mental Health Review Journal*, 29(2), 168-184. <https://doi.org/10.1108/MHRJ-12-2022-0076>
- Burnell, K., & Woodhouse, G. (2022). Heritage interventions to improve mental health and wellbeing: Developing a programme theory through a realist-informed review. In P. Everill, & K. Burnell (Eds.), *Archaeology, Heritage, and Wellbeing: Authentic, Powerful, and Therapeutic Engagement with the Past* (pp. 36-58). Cole, S., Robson, A., & Doherty, R. (2017). Focus On: Armed Forces Charities' Mental Health Provision. Directory of Social Change. [www.dsc.org.uk/wp-](http://www.dsc.org.uk/wp-)

content/uploads/2021/04/DSC-

Focus\_On\_Armed\_Forces\_Charities\_Mental\_Health.pdf

- Demers, A. (2011). When veterans return: The role of community in reintegration. *Journal of Loss and Trauma, 16*(2), 160-179.
- Dobat, A.S., Wood, S.O. Jensen, B.S., Schmidt, S. & A.S. Dobat 2019. "I now look forward to the future, by finding things from our past..." Exploring the potential of metal detector archaeology as a source of well-being and happiness. *International Journal of Heritage Studies*. <https://doi.org/10.1080/13527258.2019.1639069>
- Everill, P., Bennett, R., & Burnell, K. (2020). Dig in: an evaluation of the role of archaeological fieldwork for the improved wellbeing of military veterans. *Antiquity, 94*(373), 212-227. <https://doi.org/10.15184/aqy.2019.85>
- Everill, P., Murgulia, N., and Lomitashvili, D. (2022). Wellbeing and brotherhood on the Colchian Plain: Engagement with multinational veterans through archaeological excavation at Nokalakevi, Georgia. In P. Everill & K. Burnell (Eds.), *Archaeology, Heritage, and Wellbeing: Authentic, Powerful, and Therapeutic Engagement with the Past*, pp. 162-180. Routledge. <https://doi.org/10.4324/9781003182184-13>.
- Finnegan, A. (2016). The biopsychosocial benefits and shortfalls for armed forces veterans engaged in archaeological activities. *Nurse Education Today, 47*, 15-22. <https://doi.org/10.1016/j.nedt.2016.03.009>.
- Finnegan, A. & Randles, R. (2023). Prevalence of common mental health disorders in military veterans: using primary healthcare data. *BMJ Military Health, 169*, 523–528. <https://doi.org/10.1136/bmjmilitary-2021-002045>
- Gallou, E. (2022). Heritage and pathways to wellbeing: From personal to social benefits, between experience identity and capability shaping. *Wellbeing, Space, and Society, 3*. <https://doi.org/10.1016/j.wss.2022.100084>

- González-Devesa, D., Vilanova-Pereira, M., Araújo-Solou, B., & Ayán-Pérez, C. (2024). Effectiveness of surfing on psychological health in military members: A systematic review. *BMJ Military Health*. <https://doi.org/10.1136/military-2024-002856>
- Heaslip, V., Vahdaninia, M., Hind, M., Darvill, T., Staelens, Y., O'Donoghue, D., Drysdale, L., Lunt, S., Hogg, C., Allfrey, M., Clifton, B., and Sutcliffe, T. (2020). Locating oneself in the past to influence the present: Impacts of Neolithic landscapes on mental health well-being. *Health & Place*, 62. <https://doi.org/10.1016/j.healthplace.2019.102273>.
- Historic England. (2019). *Heritage and Society 2019*. available at <https://historicengland.org.uk/content/heritage-counts/pub/2019/heritage-and-society-2019/>
- Janoff-Bullman, R. (1992). *Shattered Assumptions: Towards a New Psychology of Trauma*. Free Press.
- Joffe, H., & Yardley, L. (2004). Content and thematic analysis. In *Research Methods for Clinical and Health Psychology*, (pp. 56–68). Sage Publishing Ltd.
- Kitchiner, N. J., Roberts, N. P., Wilcox, D., & Bisson, J. I. (2012). Systematic review and meta-analysis of psychosocial interventions for veterans of military. *European Journal of Psychotraumatology*, 3, 1-16. <https://doi.org/10.3402/ejpt.v3i0.19267>.
- MacManus, D., & Wessely, S. (2013). Veteran mental health services in the UK: Are we headed in the right direction? *Journal of Mental Health*, 22(4), 301-305. <https://doi.org/10.3109/09638237.819421>.
- McMillan, J. (2013). Making a mark on history with the past in mind. *Mental Health and Social Inclusion*, 17(4), 195-201. <https://doi.org/10.1108/MHSI-08-2013-0031>
- Mercier, J. M., Hosseiny, F., Rodrigues, S., Friio, A., Brémault-Phillips, S., Shields, D. M., & Dupuis, G. (2023). Peer support activities for veterans, serving members, and their

- families: Results of a scoping review. *International Journal of Environmental Research and Public Health*, 20(4), 3628. <https://doi.org/10.3390/ijerph20043628>
- Mitchell, L. L., Frazier, P. A., & Sayer, N. A. (2020). Identity disruption and its association with mental health among veterans with reintegration difficulty. *Developmental Psychology*, 56(11), 2152-2166. <https://dx.doi.org/10.1037/dev0001106>
- Mughal R., Polley M., Sabey A. & Chatterjee H. J. (2022). *How Arts, Heritage and Culture Can support Health and Wellbeing Through Social Prescribing*. NASP.
- Murphy, D., Shevlin, M., Pearson, E. J., Greenberg, N., Wessely, S., Busutill, W., & Karatzias, T. (2020). A validation study of the International Trauma Questionnaire to assess ICD-11 posttraumatic stress disorder (PTSD) and complex PTSD in military personnel. *British Journal of Psychiatry*, 216(3), 132–133. <https://doi.org/10.1192/bjp.2020.9>
- Neal, C. (2015). Know your place? Evaluating the therapeutic benefits of engagement with historic landscapes. *Cultural Trends*, 24(2), 133-142. <https://doi.org/10.1080/09548963.2015.1031479>.
- Nimenko, W., & Simpson R. G. (2014). Rear Operations Group medicine: a pilot study of psychological decompression in a Rear Operations Group during Operation HERRICK 14. *BMJ Military Health*, 160, 295-297. <https://doi.org/10.1136/jramc-2013-000196>.
- Nolan, C. (2019a). Prehistoric landscapes as a source of ontological security for the present day. *Heritage & Society*, 12(1), 1-25. <https://doi.org/10.1080/2159032X.2020.1818501>.
- Nolan, C. (2019b). Sites of Existential Relatedness: Findings from Phenomenological Research at Stonehenge, Avebury and the Vale of Pewsey, Wiltshire, UK. *Public Archaeology*, 18(1), 28–51. <https://doi.org/10.1080/14655187.2019.1762151>

- Reilly, S., Nolan, C., & Monckton, L. (2018). *Wellbeing and the Historic Environment*.  
<https://historicengland.org.uk/images-books/publications/wellbeing-and-the-historic-environment/>
- Royal British Legion. (2018). Loneliness and Social Isolation in the Armed Forces Community. <https://www.britishlegion.org.uk/get-involved/things-to-do/campaigns-policy-and-research/campaigns/loneliness-and-social-isolation>.
- Ryff, C. D. & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719-727.  
<https://doi.org/10.1037/0022-3514.69.4.719>
- Sharp, M.-L., Fear, N. T., Rona, R. J., Wessely, S., Greenberg, N., Jones, N., & Goodwin, L. (2015). Stigma as a Barrier to Seeking Health Care Among Military Personnel With Mental Health Problems. *Epidemiologic Reviews*, 37(1), 144–162.  
<https://doi.org/10.1093/epirev/mxu012>
- Serfioti, D., & Hunt, N. (2021). Extreme sport as an intervention for physically injured military veterans: the example of competitive motorsport. *Disability and Rehabilitation*, 44(24), 7566–7574. <https://doi.org/10.1080/09638288.2021.1985630>
- Sonke, J., Manhas, N., Belden, C., Morgan-Daniel, J., Akram, S., Marjani, S., Oduntan, O., Hammond, G., Martinez, G., Davidson Carroll, G., Rodriguez, A. K., Burch, S., Colverson, A. J., Pesata, V., & Fancourt, D. (2023). Social prescribing outcomes: A mapping review of the evidence from 13 countries to identify key common outcomes. *Frontiers in Medicine*, 0:1266429. <https://doi.org/10.3389/fmed.2023.1266429>
- Stevelink, S.A.M., Jones, M., Hull, L., Pernet, D., MacCrimmon S., Goodwin, L et al. (2018). Mental health outcomes at the end of the British involvement in the Iraq and Afghanistan conflicts: A cohort study. *British Journal of Psychiatry*, 213, 690-697.  
<https://doi.org/10.1192/bjp.2018.175>.

- Theal, R., et al. (2020). Psychosocial outcomes of Australian male and female veterans following participation in peer-led adventure-based therapy. *Journal of Veterans Studies*, 6(2) 70–87. <https://doi.org/10.21061/jvs.v6i2.189>
- Ulke, D., Akhanemhe, R., Steinberg, E. & Greenberg, N. (2021) The legacy of Mars: battlefield archaeology and improved military wellbeing. *Journal of Conflict Archaeology*, 16(2), 69-74. <https://doi.org/10.1080/15740773.2021.2038477>
- Varning Poulsen, D. (2017). Nature-based therapy as a treatment for veterans with PTSD: what do we know? *Journal of Public Mental Health*, 16(1), 15-20. <https://doi.org/10.1108/JPMH-08-2016-0039>
- Vasileiou, K., Barnett, J., Thorpe, S. et al. (2018). Characterising and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, 18(148). <https://doi.org/10.1186/s12874-018-0594-7>
- Williamson, C., Baumann, J., & Murphy, D. (2022). Exploring the health and well-being of a national sample of U.K. treatment-seeking veterans. *Psychological Trauma: Theory, Research, Practice, and Policy*, 15(4), 672–680. <https://doi.org/10.1037/tra0001356>
- Williamson, V., Pearson, E. J., Shevlin, M., Karatzias, T., Macmanus, D., Murphy, D. (2020). Experiences of veterans with ICD-11 Complex PTSD in engaging with services. *Journal of Loss and Trauma*, 26(2), 166–178. <https://doi.org/10.1080/15325024.2020.1749784>

