

RESEARCH

How Army Veterans Cope with Chronic Pain: A Grounded Theory Approach

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Many veterans suffer chronic pain, which may be exacerbated by military shaped attitudes to health. There is a paucity of research that explores veterans' experiences of developing coping strategies to manage chronic pain. This study employed a qualitative, Grounded Theory (GT) approach with seven participants. The participant involvement was via in-depth semi-structured interviews (male-6, female-1, mean age-46.0yrs, mean service-17.71yrs, mean pain-9.14yrs, pain sites-7, multiple pain sites-71%). The analysis led to the development of a theory of veterans' relationship with chronic pain (CP). The analysis produced five theoretical categories that informed the Grounded Theory of veterans' pain management strategies: "Oscillating Emotional Responses," "Activation of Coping Strategies," "Ambivalent Help-Seeking Patterns," and "Knowledge as Power." The participants' familiarity with military conditioning enabled them to feel in control of the uncontrollable and employ practical, pragmatic approaches to managing pain. Civilian status was associated with feeling somewhat vulnerable and less in control. The findings of this study are supported by previous studies, although this study challenges the view that veterans are poor help-seekers. Whilst veterans may have experiences that exacerbate pain unnecessarily, other experiences may reduce pain. Therefore, it is essential to employ a veteran-civilian approach to care management to understand the impact that collective life experience has on pain management. A veteran-civilian approach could be incorporated into personalized future pain management programs. By providing a rich sample of data, this research provides a basis for future studies to expand upon the current theory of veterans' relationship with CP.

Keywords: Veterans; coping; chronic pain; grounded theory

Lazarus & Folkman (1984) defined coping as adaptively changing behavioral and cognitive efforts to manage internal and external subjective stressors. Coping with chronic pain (CP) would mean appraising the pain as a stressor and then adapting behaviors/thoughts by drawing on available resources, so the stressor feels more manageable. Veterans may not use the same pain management methods as the general population, which could be a pertinent point that is overlooked by healthcare services. Veterans may have different resources, draw on those resources differently, and change behaviors/thoughts differently to manage the pain as a stressor. The military often shapes illness and wellness beliefs, creating a preference for the wider Armed Forces community to ignore any pain and avoid utilizing healthcare providers (Denke & Barnes, 2013). This leads to veterans often seeking help only when the pain is completely debilitating (Linn et al., 2015).

The National Health Service (NHS), which is the primary health-care provider in the UK does not consistently record

the health status of veterans, which makes it difficult to demonstrate the magnitude of UK veteran pain-related data (Gauntlett-Gilbert & Wilson, 2013). The NHS considers all veterans as members of the general population. However, some health-related data is available; soldiers are at an increased risk of suffering injuries affecting their back and legs, especially the lower legs and feet. This is due to training on hard surfaces, marching, carrying heavy equipment, and assuming specific positions (e.g. the firing position) (Ministry of Defence, 2017). These injuries can have long term consequences; in 2011 60% of medical discharges from the British Army were due to musculoskeletal issues (Gauntlett-Gilbert & Wilson, 2013).

Doherty et al. (2018), found from their study of approximately 1,200 UK veteran charities that of those charities who supported physical health 34% were approached for CP support. Limited mobility (64%) and wound care (61%) were the top two reasons for approaching for physical support. CP may be a feature of mobility and wound issues.

High levels of physical activity, exercise, and body impact could contribute to conditions such as arthritis, which may worsen once a veteran has left military service. Osteoarthritis can be particularly high for women and African Americans (Stanishewski & Zimmermann, 2015), indicating genetic factors may influence the severity of arthritis in veterans. It is also the case that many veterans suffer CP due to illnesses and incidents that are unrelated to military services.

A possible reason that veterans may turn to charities for pain support is that pain clinics run through the NHS may be insufficient for their unique needs. Not all local hospitals have pain clinics, and some clinics are so small that all they can offer is medication (British Pain Society, 2014). Many veterans are anti-medication for fear of addiction (Amirni, 2018). Furthermore, those clinics that offer group management sessions, where therapies such as Cognitive Behavioral Therapy (CBT) are weaved into pain management, may not factor that a group is a diverse group of different attendees (BPS, 2014). Those running the group sessions may not consider that veterans have differing, yet quite specific, beliefs around pain management. The current study will explore these beliefs in significant detail utilizing a qualitative approach.

It is often the case that coping questionnaires are used within pain management settings to determine a person's coping "style." However, to date, there are no veteran or military personnel-specific coping scales. Whilst the National Institute for Clinical Excellence does advocate that CP management needs to incorporate valid assessment measures (Grady, 2015), general coping scales have validity and reliability issues (Crowe et al., 2017; Donoghue, 2005). Furthermore, questionnaires are often only administered once rather than longitudinally, so they may not factor stages of coping. Indeed, the different bodily and psychological processes occurring at different stages, whether that be a diagnosis, treatment, or post-treatment, could affect the pain experienced (Breivik et al., 2008).

It has been suggested that veterans do not turn to the NHS or charities because they have had poor previous experiences (Nost et al., 2017). Many veterans could be suffering without support and it could partly be because the services they previously sought help from, including veteran charities, did not properly understand veteran pain and veteran coping. To avoid veterans further being let down during pain management, more research into pain management is needed. The current study addresses this research gap utilizing a Grounded Theory (GT), qualitative approach to explore veteran coping styles concerning CP. Schoneboom et al. (2016) comments that it is important to research the individual nature of veteran pain and coping, so healthcare professionals and support services can understand veterans' coping further. A veteran-specific approach to pain coping could lead to veteran-tailored pain management. Schoneboom et al. (2016) strongly advocate taking a qualitative approach to elicit a more detailed account of coping. Therefore, the aim of this study explores what pain

management means to this population and how veterans cope with CP. This is the first study, to the authors' knowledge, which suggests a theory to understand veteran-specific CP management. These insights could be used to help shape more effective, more useful, veteran pain management intervention programmes.

Methods

Ethics

Ethical approval was granted by Ulster University's ethics committee (REC/17/0098). Informed consent was given in writing or verbally by telephone. All participants understood the research was confidential and data would be anonymised. All participants were provided with a debrief post-interview.

During transcription, it became clear that participants could be identified by their injuries, pain, and management. However, to anonymise/generalise these details completely would affect the integrity of the data. Therefore, secondary consent was obtained to use direct quotes, on the basis that participants understood their anonymity could be reduced by referring to participants' specific injuries, pain, and management (Wiles et al., 2008). The following was not anonymised: pain type, pain location, pain cause and impact, pain management/treatment, and the impact of management/treatment.

Participants

The qualitative nature of this study emphasized open-ended questioning and in-depth analysis. The method influenced the participant recruitment, in that, the emphasis is placed on iterative analysis and not generating a large pool of participants. A combination of sampling was used. It was purposive (Palinkas et al., 2015) being taken from the English Army veteran population. Sampling was also a convenience sample, as participants could be accessed via national veteran charities and stakeholder contacts.

Several recruitment methods were employed. An electronic advert was placed on the Blesma (limbless veterans) charity research recruitment webpage, the Open University's Facebook 'Ask Fred' (discussion forum) and Psychological Society pages. An electronic advert was circulated by an East Midlands' branch of the Royal British Legion to its veteran members, and by the Soldiers, Seamen, and Airmen Families Association (SSAFA) to its volunteer coordinators (volunteer coordinators know any veterans currently engaged with SSAFA that may fit the selection criteria). Personal contacts were also emailed an electronic advert to ascertain if they knew any veterans who may be interested in participating. The advert could be emailed on to any interested veteran. The advert invited interested veterans to contact the lead author via email.

Inclusion criteria stated that participants were to have served in the Army at least one day, be >18, live in England, have been fully discharged from the Army for at least six months, and have had pain for at least three months.

Exclusion criteria stated that no participant would have had a mental health diagnosis (to avoid a comorbid factor), that pain did not begin pre-military service, and veterans were not >70. The pain did not have to be constant or excruciating, but needed to be regular (every few days or weeks, for regularly re-occurring periods).

Data collection and analysis

The analysis was informed by the Bartlett & Payne (1997) approach to Grounded Theory (GT). This approach emphasizes individual word coding and ensures that the analysis is anchored in the raw data. The first researcher completed a line-by-line analysis of the transcripts before exploring thematic links within the raw data. This rigorous approach was applied to all interviews until theoretical saturation occurred during the sixth analysis. GT aims to develop a substantive theory that makes sense in its context, rather than developing a universal theory to apply to a general population. See Appendix 1 for a detailed, step-by-step account of the GT process adopted during this research. See Supplementary Material 1 for a copy of the interview schedule and Supplementary Material 2 for an example of theme creation.

Credibility, originality, and resonance

The first author was a Master's student and a veteran charity support worker (see Authors' contributions). The participants were informed of this at recruitment. An effort was made to acknowledge that bias could be present in the research, due to engaging with the veteran charity. An effort was made to minimize the effects of bias by adopting the Bartlett & Payne (1997) methodology. By paying close attention to the words within the transcript, an effort was made to minimize the effect of the interviewer/transcriber's presence. The analysis was also reviewed and reflected upon by the second author, to explore analytical constructs and meaning. This process also served as a method of reflexivity, which is essential when conducting Grounded Theory (Hall & Callery, 2001).

Results

Five themes emerged from the analysis, which informed the overarching theory of veterans' responses to pain. The theory emerged after six participants were interviewed and their transcripts were analyzed. A seventh interview was conducted to test the theory and ensure theoretical saturation had occurred. Participants ranged from 37–60yrs, with a mean age of 46. Six participants identified as male, one identified as female. Length of military service ranged from 11–26yrs, with a mean length of service being 17.71yrs. Participants' ethnicity could be considered homogenous; all identifying as white English (see Appendix 2, Table 1). Only two were rejected for participation: one had a PTSD diagnosis and one was non-Army.

Group socioeconomic status (SES) was difficult to define. No education level was reported. Six out of seven veterans were employed. One participant was self-employed

although they found it difficult to maintain regular work due to pain levels. Incidentally, employment or non-employment in veterans does not accurately indicate SES. Some UK veterans begin to claim their long-service pension after their 22-year service (approximately age 40). Pensions may be received instead of or alongside employment. Therefore, low paid employment or non-employment may not necessarily equate to low SES. Participants came from six English regions, none of which were considered deprived (Department for Communities and Local Government, 2015).

Participants suffered CP for <1–20yrs, with a mean length of pain being 9.14yrs. The pain was reported in seven main body regions (See Appendix 3, Table 2). 71% reported pain in multiple pain sites. One reported tendon pain and six reported musculoskeletal pain. The level of pain the participants experienced varied; most explained on "good" pain days the pain was around one to four out of ten. On "bad" pain days, it could be around eight to ten. One participant reported pain up to a maximum of four out of ten.

Findings and discussion

The analysis produced five theoretical categories that informed the GT of veterans' pain management strategies; "Oscillating emotional responses," "Activation of Coping Strategies," "Ambivalent Help-Seeking Patterns," and "Knowledge as Power." These five theoretical categories informed the overall theory of the veteran relationship with CP. **Figure 1** provides a pictorial representation of the theory developed with this sample. The theoretical categories will be explored before outlining the overall, conceptual theory of veterans' relationship with CP.

Knowledge is power

Participants focused intently on understanding their experience of pain, to better understand their bodies and the associated psychological distress linked to CP. Participants found comfort in this knowledge and used their insights to adapt their lifestyle to manage CP. This self-contained approach was more favorable than seeking external support for this veteran sample. This finding is likely to be linked to the significant influence of military conditioning on veterans' approach to managing CP.

Participants expressed ultimate trust in their bodies, particularly those who had lived with pain for some time. Participants had taken time to understand their bodies and this insight enabled them to resist the temptation to override bodily signals. They had learned over some time, since the CP had begun, how to manage pain effectively and respect the limitations of their bodies. Disrespecting their body often culminated in the pain requiring a higher level of management, leaving them in various states of incapacitation. A part of this respectful relationship was continuing to adopt pain mitigating strategies. P6's extract is an example of developing adaptive coping strategies over time, that reflect understanding and respect for the body (Hellstrom, 2001):

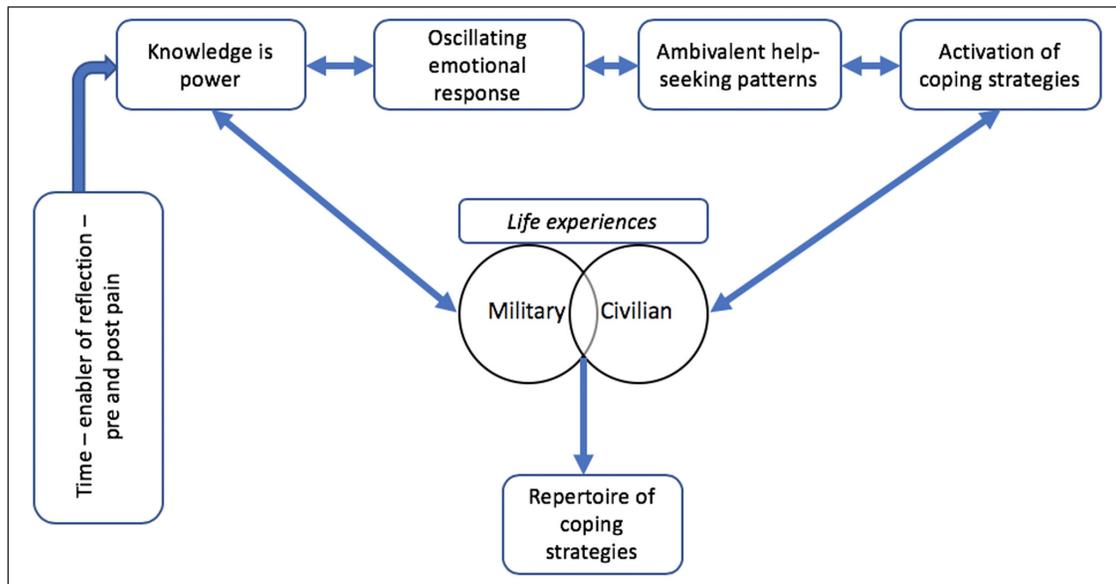


Figure 1: Veterans' relationship with Chronic Pain—Theory of veterans' response/coping strategies for long-term pain (LTP)—Core theory of army veteran coping.

"I have learned not to push my body; my body will tell me while I am doing exercise that enough is enough... I take that idea that any pain is bad pain...so don't try and wiz through because it just affects me worse the next day or the day after...I actually tell them [work colleagues] 'right I can grit it out, but eventually I am going to end up having a week off...you can let me have a couple of days where I can work at 60%...then I am back to being able to give you my best."

Participants, like P6, went so far as to test their body beyond safe limits to develop a contingency to manage pain and its impact.

It can also be seen how participants were physically active and avoidant at different time points. All participants discussed activities they currently avoided, to not exacerbate pain, as demonstrated by P7: "I haven't done [run] for 3–4 years now. I haven't gone out running. I don't do that anymore because I can't."

All participants expressed extensive knowledge of their pain regarding where and how it originated and also what they could and could not do. Participants were constantly appraising their pain/body to understand and manage the pain, which was based on using information garnered to date together with a trial and error approach. This scanning process enabled participants to shape their behaviour and scaffold activities to help adapt to their injuries/pain. Bullington (2009) commented that pain forces a sufferer to attend to the body and carry out an appraisal. If pain is regular then the appraisal will be regular. P1's extract demonstrates how they appraise and re-appraise when attempting to perform an activity. "I've obviously not been able to do my weights ...as I get back into training; I'm taking it very slow... I'd say it's a case of trial and error, seeing how it feels..."

Whilst not all CP was linked to the military, participants discussed military-related injuries as potential contributing or exacerbating factors to pain. These participants may have left the military armed with the general knowledge that the time spent in the military could contribute to CP (Ministry of Defence, 2017). It was acknowledged that knees and joints were common pain sites for veterans; therefore, three participants had stopped running.

P4 – "I am aware for a lot of guys there is a similar [military] theme, you know knees are a big issue... there are occasional days when I certainly can't run anymore."

The analysis found that general aging contributed to the participants' CP, creating an additional sense of fatigue. Some participants suggested they were in a vicious circle of feeling unrefreshed due to the pain/age/tiredness association. General aging has found to exacerbate pain (van Hecke et al., 2013) and tiredness may increase with age. However, this time period appeared to enable participants to develop more insight into their difficulties, to better shape their coping strategies.

Oscillating emotional responses

The participants expressed a range of oscillating emotions related to coping with CP which many participants found hard to process. The analysis found that the unpredictable nature of CP made it difficult for participants to form a cohesive emotional response to their pain. Participants worked hard to process the emotional responses associated with the restrictions that pain had created in their lives. Anger and frustration were conveyed at not being able to engage in the same activities they once did, which was often

coupled with sadness due to a sense of loss when comparing their current selves with their former selves. Sadness was expressed at the inability to be tactile with family members, as demonstrated in a quote by P1:

“Playing with my child...it has impacted as they like to use me as a climbing frame; now they are like ‘no I can’t cause your arm hurts,’ which I think is quite sad”.

Anger, frustration, sadness, and grief (Matthias et al., 2012) are all found in previous research to be linked to loss of ability, social group, employment or sense of identity (Dysvik et al., 2013; Haraldseid et al., 2014; Hellstrom, 2001). Negative emotions can be linked to a sense of loss and veterans may find the loss of identity particularly psychologically difficult (Smith & True, 2014).

Guilt and pride were also discussed. Guilt was connected with the desire to “keep going” and avoid disappointing others, whereas pride acted as a help-seeking barrier. The following extracts are examples of guilt and pride being expressed. P1 reflected that guilt is a motivator whilst P2 experienced guilt as a help-seeking barrier:

P1 – “I don’t get on with it and go to work and do my normal stuff, I am letting hundreds of people down. So that motivates me to get on with it”.

P2 – “I wouldn’t go to a charity...I would kind of be embarrassed. I am also a proud person”.

Guilt and self-induced pride are particularly embedded in military culture (Stecker et al., 2007). Guilt is also suggested to be a particularly powerful motivator to “keep going” (Kouchaki, 2014).

Participants worked hard to manage their distress and employed independent coping strategies such as acceptance, humor, and good fortune. The analysis found that for many participants, acceptance of pain was necessary as a part of managing their CP. P4 reflected: “I accept it is there. I don’t like it. You have got no choice but to accept it’s there”.

P6’s description of their injuries/recovery was humorous, and they explained how they used humor to manage the situation. P6 also reflected they were lucky and mused that the situation could have been worse:

“On the flip side it took a little bit of humor, which took away the sort of seriousness of what was happening...so they do have an element of fun with it, but now...I put humor on it and when people say you are lucky, I just say ‘either that or god’s sick and twisted and likes to see me suffer?’”

Humor and good fortune were employed as emotional regulation strategies for effective pain management amongst this sample of veterans. However, these strategies could potentially “mask” emotions from others and serve to fur-

ther isolate veterans from being identified by services and/or seeking help.

Acceptance may be a good starting point for veteran coping (Outcalt et al., 2016) and positive thought reframing is linked to veteran resilience (Rice & Liu, 2016). Humor may enhance veteran resilience and humor may be linked to efficacy (Matz & Brown, 1998).

The influence of time since the onset of CP management, together with life experience pre-CP, was a significant factor in participants’ emotional responses to CP. The current theoretical model found that the passage of time has a significant impact on veterans’ strategies to cope with CP. This is clearly reflected in **Figure 1**, which highlights the influence of pain on the five theoretical categories in the current model. The analysis indicated that emotions and emotional regulation changed over time, as the participants began to manage and live with/adapt to the pain. Some participants found that the passage of time enabled them to begin to accept their pain and manage it more effectively. Furthermore, the passage of time post CP onset enabled some participants to engage in non-military activities to find meaning in their life and this meaning enabled better coping with CP. P5 reflected: “I can maybe find some work that I am passionate about...I become more positive and I feel I am more motivated to do stuff.”

Being passionate about interests helps manage pain and exercise has been found to boost veteran self-esteem and veteran quality of life (Laferrier et al., 2015).

The process of reflecting backward over time may also produce a sense of loss and sadness, which is supported by previous research (Hellstrom, 2001). However, research also suggests that pain sufferers may reflect backward to more recent experiences to develop adaptive coping strategies (Steihaug & Malterud, 2008), which may boost positive emotions and emotional regulation.

Ambivalent help-seeking patterns

The analysis found that veterans engaged in help-seeking through the lens of their intertwined military and life experiences. Veterans were cautious of engaging with “civilian” services such as statutory health services and charity support teams. The analysis found that participants were somewhat fearful of engaging with these services due to the anxiety associated with breaking military protocol related to disclosure of knowledge and acceptance of weakness, which challenged the military mindset of managing difficulties in stoic isolation.

Participants’ conditioning in relation to civilian services influenced their ability to form and maintain working relationships with support services, leading to breakdowns in trust and challenges in engaging with external services.

Intervention and support to manage pain were perceived as both negative and positive. Some proactively sought out help whilst others did not. Help-seeking or help-acceptance applied to family, friends, peers, support services and health-care professionals regarding formal and informal help. One

participant stated they would not ask for help or accept it if it were offered, which is unsurprising as many veterans wish to maintain personal efficacy (American Pain Society, 2017). This attitude also supports the view that veterans are poor help-seekers (Hom et al., 2017). P2 noted:

“It can either wait and if it can’t wait, I will say to someone, ‘I can’t do that.’ I won’t ask for help to do something...my family knows that if I am in serious pain, your best bet is to try and stay out of my way, maybe bring me a coffee occasionally, but don’t try and be helpful”.

Two participants sought out professional help but became disillusioned; these participants did not like what they were told and did not trust healthcare professionals. This is demonstrated by P2.

“...After going for a couple of times I just came to the conclusion that he wasn’t looking to find what the root cause was...I thought to hell with that. I wouldn’t say I ever came across one [family doctor] that I thought was particularly brilliant”.

Many veterans report that healthcare professionals do not meet expectations (Nost et al., 2017). Furthermore, research suggests that veterans may be reluctant to disclose their issues due to an anxiety that their pain and military experiences will be misunderstood, particularly in healthcare settings (Chase et al., 2016).

The analysis found that help seeking was more likely to occur when participants had exhausted all other independent options. For these participants, pain severity acted as a help-seeking enabler. Help could have been sought because veterans are conditioned to be problem solvers (Callahan, 2015). However, it is equally likely that help-seeking stemmed from a place of desperation. Whilst seeking support could be very challenging for participants to initiate, some participants were able to form professional relationships to benefit their CP. P6 reflected:

“He [family doctor] does enjoy me coming because it’s different from talking about bunions and stuff, so he does like to have a good a natter when I get there because I have come from a different environment”.

There were instances of participants actively seeking interpersonal, non-judgmental social support to manage their pain, including discussing their injuries and pain with peers who would understand. This was often preferable to help seeking via more formal support services. Participants made comments about simply being “in company,” which seemed comforting, as confirmed by P5. “You have got to be around people...being around people helps”.

Social support has been found to benefit veterans in relation to their healthcare issues (Siegel et al., 2018). Veterans

may find they can manage pain more effectively by discussing their issues with those who understand them.

Positive and proactive communication skills were a significant factor in facilitating help-seeking or to advise of the presence of pain. Proactive communication skills enabled participants to explain their CP, which allowed them to feel less exposed and more “in control” within professional and interpersonal relationships. They felt if they engaged in professional consultation armed with information, decisions would be more collaborative. If a veteran did not want help or a certain kind of help, this would be clearly communicated. Some veterans wanted to disclose their pain to their family, but they also reiterated that they wanted to use their own pain management strategies. Therefore, the communication that they were in pain was not an indirect request for help. Rather, it was admittance that they were managing a weakness or problem. By insisting that they wanted to manage their pain their way, a sense of strength in the presence of weakness was introduced. The presence of strength was more salient than the weakness for this veteran population.

The analysis found that some attitudes to seeking support and views of external services could improve over time, building on positive relationships with external support providers. During rehabilitation, P6 developed a positive relationship with healthcare professionals, which shaped their attitude towards help seeking. As a result, P6 began to trust the professionals, P6 was more co-operative, P6 was more accepting of assistance and P6 also considered their family. P6’s attitude towards family support is demonstrated below.

“I tend to just grit it out...it wasn’t until I got to rehabilitation, with all those head doctors, and from that, they sort of made me realize that they [my family] are going through it...it’s not fair to cut them out...”

Activation of coping strategies

The analysis found that coping strategies were significantly influenced by participants’ military conditioning which led to a psychological mindset of “getting on with it.” This mindset was clearly articulated by P2 (“...just get on and do it.”).

Veterans overwhelmingly managed their pain by attempting to actively push forward with their lives. Participants actively developed strategies to manage CP that would be consistent with their veteran self-image.

Veterans expressed contradictory proactive and avoidant pain management strategies and swung between active and avoidant strategies to manage their pain. Active, problem-focused “doing” included making adaptations, buying equipment, taking medication, solution-seeking (e.g. sourcing prognosis, possible treatment), and “just getting on with it.” Continuing with life mentally and physically seemed to be a source of motivation.

“Getting on within it” can be viewed as an example of a preference for self-care which is embedded in military culture (APS, 2017) and a reflection of military identity (Smith & True, 2014). The military teaches its personnel to be

problem solvers (Callahan, 2015; Cornell-d'Echert, 2012), and this military-embedded attitude may motivate veterans to surmise what causes pain and make adaptations accordingly. Adaptations could include acquiring equipment, changing routine, or doing specific exercises.

Contrastingly, examples of avoidant coping strategies were expressed including avoiding dwelling on the pain and avoiding research. Avoidance acted as a psychological safety measure, to avoid experiencing overwhelming negative emotions. Not all participants avoided researching the cause of their pain and possible pain management strategies, but two avoided investigating the true cause of their pain, for fear it was something worse than expected. The repercussions of pain's true cause could lead to further disruption (i.e. an operation/time off work), as demonstrated by P1:

“No, no I don't like to do that really [conduct investigations] because I think it's so easy to get yourself drawn into worse scenarios doing that, so I tend to stay away”.

Cognitively avoiding dwelling on pain (cognitive avoidance) is not unexpected with these participants. Thought redirection is found to be common in serving personnel and veterans (Shephardson et al., 2017), which may account for why some directed thoughts away from the pain.

The analysis found that many participants used active avoidance in an attempt to improve their short-term quality of life. Active avoidance demonstrated a focus on instant pain relief rather than long-term pain management. There were instances where participants felt avoidance was necessary, including pain-exacerbating activities. Avoidance could again relate to veterans being problem solvers and thinking that the most appropriate way to solve the pain problem was to avoid certain pain-related scenarios (Callahan, 2015; Cornell-d'Echert, 2012).

The analysis found that participants actively avoided “supportive” resources that would typically be conceptualized as beneficial in their recovery, for example, ‘blue-badge’ disability car-parking badges and registration as “disabled.” P5 commented: “I don't accept that I am disabled and I probably never will. I just kind of turn my back on that and try and crack on.”

The analysis also found some anxiety regarding the use of medication in participants' pain management. Avoidance of medication has been documented in previous veteran research to be linked to addiction avoidance (Amirni, 2018).

P5 demonstrates that long-term pain management was difficult. Sometimes they “got on with it,” but this strategy was not always possible: “You get knocked down once and pick yourself up, but if that happens dozens of times you start to struggle...”

These quotes highlight that the participants were at times active and at other times were avoidant, which may have developed through a process of time and experience to learn which approach leads to the most efficient pain exacerbation (Steihaug & Malterud, 2008).

A grounded theory of veterans' relationship with chronic pain

The analysis of veterans' relationship with CP contained four theoretical categories that interacted with each other to build the overall theory. All participants expressed two types of experience when describing their CP management: firstly, their military-conditioned coping style (e.g. self-reliance, distrust of healthcare professionals, “just getting on with it”) shaped by many years of exposure to military ideology and secondly, their civilian-style coping (seeking out and accepting help). Whilst all participants used military-shaped coping as a default coping style, this coping style lacked universal adequacy as military shaped coping alone was insufficient.

The analysis found that participants' attitudes and responses to CP were influenced by the combination of civilian life experiences and military conditioning. These combined factors predisposed participants to conceptualize pain through a lens of experience permeated by core-beliefs related to self-reliance, control, and a fear of being perceived as “weak.”

Participants' familiarity with military conditioning enabled them to feel in control of the uncontrollable and employ practical, pragmatic approaches to managing pain. Civilian status was associated with feeling somewhat vulnerable and less in control. This was often activated when participants accessed statutory services.

Participants who employed “civilian” coping strategies could initially feel quite exposed to vulnerability but at times this was necessary and useful. Some participants were able to shift their repertoire of coping/relational strategies to engage with services and alter their belief system of “civilian life.”

The analysis found that participants' beliefs and associated coping strategies were not static but subject to change, based on episodes of positive experiences of help-seeking. There were instances where participants were not in a position of control and they had little choice over the coping style used, e.g., if a sufferer was in the hospital (incapacitated) or in rehabilitation. At times veterans were forced to use civilian coping styles due to their situation. However, these coping experiences often changed their perception; they now had positive civilian style experiences to reflect upon and consider using going forward. An example of military-civilian experience having a positive impact on pain management can be observed with P4:

“Because having served in a particular role [in the medical corps] in the forces for a lot of years and beyond as a civilian...”

R1 – “Because of your role in the Army, do you think that that has impacted your decisions to take pain killers?”

P4 – “Oh yeah. Pain relief, whatever that might be, whether it is aspirin or morphine, they serve a real purpose...”

P4 explains that experience through former roles in the Army and beyond have influenced their decision to not avoid medication, unlike many veterans who avoid medication (Amirni, 2018).

These examples support the view that experience changes over time and reflecting backward, by considering these changes, can lead to more adaptive pain management (Steihaug & Malterud, 2008).

The proposed model of veterans' relationship with CP demonstrates that coping strategies are dependent upon personal experience and each veteran's experience is unique. The theory suggests that coping is "veteran-person" specific, with coping style(s) being a reflection of military and civilian identity (Smith & True, 2014). Whilst many participants shared veteran conditioning and veteran experiences, each individual has experienced a personal journey. Each veteran's emotional response to pain, help-seeking patterns, and individual coping strategies are different. However, the theory found that all of the participants shared experiences of developing high levels of knowledge of their pain and injuries. Participants demonstrated a tendency to minimize their emotional responses to pain and were self-reliant when possible.

The analysis found that an undefined and fluid period of time, following the onset of CP, facilitated reflection within veterans. This reflection period influenced veterans' relationship with their CP and their subsequent attitudes and behaviors towards managing pain. Furthermore, the proposed model of the veterans' relationship with CP demonstrates that the passage of time enables an active process of reflection, coping strategies, oscillating emotions, and various help-seeking patterns.

Using experience as a theory, given Lazarus & Folkman's (1984) theory of coping, experience could be considered as a coping resource. Reyes (2018) theorized that veterans navigating the new civilian world could benefit from utilizing civilian experiences because their military experiences as a resource do not match their new environment. However, Reyes did not factor that useful experience can take an extended period of time to develop. Furthermore, Karsdorp & Vlaeyen (2009) theorized that experience of managing pain through endurance/avoidance may create higher levels of pain than veterans needed to suffer, indicating that the experience they draw upon may be unnecessarily detrimental.

Incidentally, whilst some veterans used emotional regulation to manage pain, existing research suggests that excessively suppressing emotions over time may exacerbate CP (Koechlin et al., 2018). Increased negative affect accompanying pain may also intensify/increase pain levels. It could be the case that some participants were overly regulating their emotions, and this could have correlated with higher pain levels. Furthermore, Hasenbring (2009) suggested that avoidance due to fear of pain and long-term over-endurance (through suppressing pain thoughts and thought redirection), may lead to excessive pain levels. Therefore, a strategy that was intended to be facilitative/supportive/adaptive may have long-term maladaptive consequences within the

veteran population. Emotional suppression is considered to be particularly associated with veterans due to its links with masculinity and military ideology (Levant et al., 2013).

Implications

The findings of the current study indicate that general coping scales may not have captured the complexities of veteran pain coping; veterans use a dynamic combination of military shaped experience and civilian experience, whilst carrying military/veteran ideologies. Some veteran coping strategies may be exacerbating pain levels; however, veterans may demonstrate many positive pain management strategies that could be encouraged. This analysis and other studies (Denke & Barnes, 2013, Lin et al., 2013, Stecker et al., 2007) have found that military conditioning has a significant impact on veterans' belief systems and subsequent coping strategies. Veterans are likely to require pain management services to formulate their belief systems to help conceptualize the minimization, engagement and relational challenges that may occur when veterans access civilian services.

As a population, veterans are likely to manage pain differently than civilian peers and a one-size-fits-all approach to pain management may be insufficient. There is emerging evidence to indicate a potential correlation between a military career and future emotional/physical pain later in life (directly or indirectly) (Gauntlett-Gilbert & Wilson, 2013; Ministry of Defence, 2017). Therefore, it is important that professionals involved in veteran care employ a veteran-civilian centered approach to care assessment and delivery. This approach would improve veterans' quality of life and potentially reduce pain-related healthcare costs. Future research may wish to expand and test the model through quantitative methodologies. Interviews could be conducted with those who care for veterans, so triangulation could be considered. Furthermore, longitudinal studies could be considered to track how coping/experience changes over time.

Pain-related clinical interviews that account for veteran's military conditioning could be conducted during pain management assessments/scenarios. The findings from the interviews could be used to further understand the veteran-civilian pain experience. Experience elicited from the interviews could be used to address adaptive and maladaptive coping strategies, including strategies that were once useful in the military but are less useful in civilian life. The current theory could be used to inform Cognitive Behaviour Therapy (CBT) formulations of CP in a veteran population to improve CP outcomes.

Limitations

Limitations to be noted include that the sample size could be considered small. As this research was for a Master's qualification time was limited in which to recruit participants; however, Baker & Edwards (2012) suggest that a smaller sample can be considered if the interviews contain an abundance of rich data. The veterans were very generous in sharing their pain management experiences in detail. Saturation was

reached after six interviews, with a final seventh interview being conducted to test the proposed theory.

Officers were not represented within the sample and participants were solely from the Army. Due to time restrictions, the first author targeted an Army sample because this population was potentially easier to recruit from. Charity and stakeholder contacts reported that more Army veterans used their services than any other branch of the Armed Forces. It is unclear why there was only one female, as more female veterans report pain than males (Ministry of Defence, 2017). However, female and male responses were not noticeably different in this study.

Conclusion

This research found that military and civilian experiences have a significant role in the veteran relationship and management strategies of CP. Experiences surrounding pain and pain management have been gained over time. Veterans value the knowledge they have gained relating to their pain levels and bodily limitations. This knowledge provides

a sense of power and control over their pain. The veterans demonstrated ambivalence towards help seeking for pain with many becoming disillusioned with professional services due to poor help-seeking experiences. However, if positive help-seeking experiences were encountered then positive relationships could be formed with healthcare professionals. Veterans demonstrated active coping strategies, including active avoidance to conceptualize and manage their CP.

Veterans demonstrated military decisiveness in their strategies to manage pain levels on a daily basis. Veterans' coping styles were linked to their fusion of military and civilian experiences. Their relationship with CP adapted and changed over a period of time and reflection, allowing some veterans to adopt a more accepting approach to "civilian" help-seeking. The findings may be used within care-planning assessment and treatment for veterans within pain management settings.

Appendix

Appendix 1: Bartlett & Payne's (1997) procedure for Grounded Theory (Lyons & Coyle, 2007).

Collecting data	Interviews were conducted in person (at a gym and closed beauty salon) or over the telephone, as per participant's preference. Interviews were semi-structured and based on open-ended questions. Questions were loosely based on the COPE scale (Carver, Scheier, & Weintraub, 1989), because that is the most popular coping questionnaire used in health research (Kato, 2015). The questions were expanded to get a fuller account of coping, and were action-oriented to seek an account of 'how' coping occurs. See Electronic Supplementary Material 1 for a copy of the interview schedule. Whilst interviewing was an iterative process for each participant, some participants were asked additional probing questions if an interesting point prompted further exploration. If an interesting point arose in a previous interview, this may direct additional questions in subsequent interviews with subsequent participants. No two interviews were identical. Interviews lasted between 20 and 112 minutes. No non-verbal cues were noted from face to face to interviews, on the basis that this information would be missing from the telephone interviews.
Transcribing data	Interviews were transcribed verbatim, and anonymised transcripts were stored in NVivo for analysis. Each interview was transcribed and analyzed as soon as the interview was conducted.
Develop initial categories using open coding	Starting with the first transcript, initial codes and categories were assigned to interesting pieces of text. Participant's own words were used as labels where possible.
Saturate the categories	In subsequent transcripts other instances of the codes/categories were sought out. Saturation occurs when no new categories or codes appear in the transcripts. Saturation of categories/codes was reached at four participants.
Define the categories	Categories/codes are narrowed to broader overarching themes. See supplementary file 2 for an example of this process.
Theoretical sampling	More participants are interviewed to ascertain if the defined themes appear in their transcripts. Two more participants were interviewed.
Axial coding	Relationships between the themes are observed. These relationships are tested by returning to the data; in this case the six transcripts.
Theoretical integration	A core category or theory is proposed to explain the relationship between the themes.
Grounding the theory	The proposed theory is tested by returning to the data; the six transcripts. A search for deviant cases against the data is conducted.
Testing the theory	Another new participant is interviewed, to test the theory (and themes) with new data. The seventh participant.

Appendix 2: Table 1 Participant characteristics.

	<i>N</i>
Gender	
Male	6
Female	1
Age	
31–40	2
41–50	4
51–60	1
<i>(mean age 46 years)</i>	
Number of English regions veterans currently reside	6
Length of service	
11–15 years	3
15–20 years	2
20<	2
<i>(mean length of service 18 years)</i>	
Corporal/Sergeant	3
Staff Sergeant	4
Reasons for leaving the Army	
Pregnancy	1
Completed service (22 year service)	2
Medical discharge	2
Career change	2
Number of different regiments the veterans served with	6
Currently serving in the Reserves	2
Employment	
Employed	6
Unemployed	1
Marital status	
Single	1
Married	2
Divorced	1
Living with partner	1
Did not say	2

Appendix 3: Table 2 Pain characteristics.

	<i>N</i>
Bodily regions where pain occurred	
Neck	2
Shoulders	1
Arms/elbows/wrists/hands	3
Back	4
Torso/stomach	1
Hips	2
Legs/knees/ankles/feet	2
Pain in multiple bodily pain sites	5
Length of time suffered pain	
0–5 years	2
6–10 years	3
11–20 years	1
15–20 years	1

Additional Files

The additional files for this article can be found as follows:

- **Supplementary file 1.** Interview questions schedule. DOI: <https://doi.org/10.21061/jvs.v6i1.125.s1>
- **Supplementary file 2.** Example quotes to themes table. DOI: <https://doi.org/10.21061/jvs.v6i1.125.s2>

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Competing Interests

The authors have no competing interests to declare.

Author Contributions

The first author (CH) is a veteran charity support worker. CH was also the main researcher as this study formed the research element of a Master's degree in Health Psychology. CH conducted the literature review, obtained ethical approval, organized recruitment of participants, liaised with participants, interviewed participants, transcribed data, analyzed the data, and disseminated the findings. The second author (BH), an experienced academic and former clinical psychologist, cross-checked the transcripts and analysis.

BH also assisted with theory formation and dissemination of findings. The third author (CA) assisted with the conceptualization of the study and with the ethical process. CA reviewed and commented on drafts of the manuscript. The fourth author (BWB), an experienced academic, assisted with the conceptualization of the study, provided guidance relating to the ethical process, the theoretical framework, and the methodology. BWB reviewed and commented on drafts of the manuscript.

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