



The University of
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Karting for Armed Forces Veterans: What are the Benefits?

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Note from the sponsor

Nigel Smith, the owner of City West Commercials, funded this study for reasons beyond his love of motorsport.

Having had friends injured in Motorsport and watched their recovery he has a non-clinical , optimists view of the value of hope and inclusion to overcome personal trauma.

Through his own motorsport experience he is aware of the ability of the motorsport environment to provide an intense sensory exposure despite the participants remaining relatively inanimate. The belief that that this is heightened through a responsibility to the team and the need for courage and commitment meant that the parallels of the work done by Kartforce to soldiering are obvious.

Whilst this is, and perhaps always has been, understood at an innate level, the application of Professor Nigel Hunt's clinical analysis to such a control group and activity will allow, it is hoped, more confidence in trusting what Kartforce and Dave Player have known all along.

Nigel Smith

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ABSTRACT

Many armed forces veterans suffer from both physical and mental health issues that are often not evident when someone leaves the armed forces, sometimes appearing until many years later. For those who have been badly injured, the situation can be more difficult. Not only are injured troops dealing with the mental scars of their experiences, they have to try and come to terms with their injuries, some of which are very serious, and may mean that the person will never fully recover physically. Some of the injured spend months or years being treated, and then somehow need to adjust to civilian life.

This study explored the stories of a group of 15 injured veterans who have taken up karting. The kart racers were interviewed for this study using a life interview approach. The interviews were conducted in this way in order to gain a fuller understanding of their experiences, and how karting and other activities fit into their lives.

In order to compare the experiences and motivations of these men, five professional and amateur non-veteran racing drivers were also interviewed. This enabled the varying motivations of the veterans and the racers to be compared.

A thematic analysis of the veterans' transcripts led to themes focusing on being a soldier, their injuries, and then on aspects of karting. Proposed similarities between battle and racing is contentious, with some arguing for a close link, and others arguing for them being very different. The veterans' were very positive about their karting experiences. The findings and the implications are discussed.

BACKGROUND AND RATIONALE

Narrative is at the heart of everything we do. While many people argue that language is at the heart of what it is to be human, it is our ability to use language to tell stories, and to listen to stories, that shows our humanity. We use stories across many situations, both formally and informally. We tell stories about our achievements, our successes and failures, and -crucially for the current context - we make sense of our difficulties and tragedies through storytelling (eg Crossley, 2000; Hunt, 2010).

Veterans may have to face many difficulties as a result of their war experiences. There are many different types of war trauma such as the terror of battle itself, the loss of a friend or comrade, the constant fear of attack and ambush, or being wounded or maimed. Soldiers who face traumatic situations can find them difficult to deal with, difficult to make sense of, and it is often through narrative that they do begin to make sense of their experiences.

The problems faced by veterans do not necessarily appear immediately. Evidence shows that many people return home from war, enter civilian life, and live normally for years, sometimes decades (Hunt & Robbins, 2001). It may only be long after the war that problems start to appear, and it is often difficult to identify those problems before they become too serious. For others, those who are wounded or maimed, there may be a period of many months or years of recovery. For many, there is never a full recovery. This can be difficult for people who have always prided themselves on being physically fit and active.

Traumatic Stress and beyond

We have studied the effects of traumatic situations for over a century (Hunt, 2010). Until fairly recently, that was largely in the context of war. During this time we have developed a reasonably good understanding of what happens to people, and the problems they face afterwards.

The concept of post-traumatic stress disorder (PTSD) was introduced into DSM in 1980 based on years of research with Vietnam veterans (APA, 1980). The construct has been developed further over the years, based on research with people who have faced a wide variety of traumatic experiences (APA, 2012). Psychological treatment for trauma and associated disorders has also advanced. Two treatments are accepted by the National Health Service, Trauma-Focused Cognitive Behaviour Therapy (TF-CBT) and Eye Movement Desensitisation and Reprocessing (EMDR; Bisson et al, 2007). While these can be very successful for traumatised people they are also problematic. There are large dropout rates for treatment, as many people find them difficult to undertake, because they rely on addressing traumatic memories, and the emotions and feelings associated with them (Schottenbauer et al, 2008).

Psychological therapy is just one set of ways in which veterans and other traumatised people can be helped. The problem with PTSD is that it does not fully describe the kinds of issues faced by veterans once they have left the services, particularly if they are carrying the physical consequences in terms of injury as well as mental scars. People who are traumatised may face not only PTSD but comorbid disorders such as depression, anxiety or substance abuse. They may express anger, feel shame or guilt, and they may have difficulties

fitting in with the civilian way of life. These reactions are complex; they are concerned not only with traumatic stress, not only with the response of the person as an individual, but are concerned with changes to the social world and the environment. An injured veteran may not be psychologically traumatised, but it may still be difficult to fit in with the civilian world. This may be because of personal physical limitations (eg due to amputation), experiencing difficulties getting or keeping a job, problems relating to family or friends, or simply not understanding how to behave as a civilian (eg without the discipline and security provided by the armed forces).

This multitude of issues can lead to many problems, not only trauma-related; and the problems themselves may not appear immediately, but only months or years after leaving the forces. There is a significant issue of veterans having what we might call sub-clinical problems, before any diagnosis, which should be dealt with before they can become more significant issues.

This complexity is why the intended research is based around narrative. The principle argument here is that we all have autobiographies, life stories that we hold, that we change and adjust as time goes on, that we tell to people in different ways depending on the person and the context (eg the life story a person will describe to a spouse is probably very different to the life story a person tells a friend in the pub).

Most of us generally have positive life stories, we tend to think relatively positively of ourselves, other people and the world in general, but traumatic events can lead to a significant reappraisal of this. All of a sudden the world is not such an acceptable place, we might think negatively of ourselves, blame

ourselves unfairly for someone's death or injury, blame others unfairly, be unable to face the world. The life story is disrupted, the narrative ceases to be coherent.

For veterans, there may be the trauma of war experience, of being wounded, etc, or it may be the significant event of leaving the armed forces. Any of these can disrupt the life story. A person might be left 'stuck' or fixated at a particular point in life, where an event has significantly challenged what life means to the person, and it is very difficult to move on, to continue one's life course in a meaningful way. These problems can be dealt with in a number of ways, most of which can be classified as narrative. A person might receive therapy, they might talk to friends or family, they might write down their experiences, or they might find other significant activities to undertake. All of these are about rebuilding the life story, providing meaning to life, making sense of the bad things that have happened and moving on in life.

One of the reasons putting in place alternative activities might be successful for veterans is that veterans tend to be people who are highly motivated by physical activity that may involve high levels of adrenaline, and by achievement. Therapy does not provide a substitute for these needs.

OBJECTIVES AND PURPOSE

Key objectives:

1. What role, if any, does karting play in improving the quality of veterans' lives? Does it impact on self-esteem and the meaning of life?
2. Does karting help resolve issues relating to traumatic stress and related disorders? If so, how and why?

METHODS

Design

This is a narrative study, whereby veterans are interviewed using a life story technique, to explore their key motivations for racing. Non-veteran racing drivers are also interviewed to explore their motivations, and to compare their experiences with the veterans.

Participants

Participants were recruited via Kartforce. All veterans either have or have had involvement with the organisation. Contact with racing drivers also took place via Kartforce. Fifteen veterans (of Iraq or Afghanistan) were interviewed, along with five professional racing drivers. All veterans have experienced severe injuries. All either regularly go karting or have tried it out. Veterans were not selected on the basis of whether or not they believe karting has or has not improved their lives.

Interview schedule

The interview schedule is based loosely on McAdams (1995) life story interview, but is specifically focused to the experiences of the participants, particularly the impact of being injured/wounded and perceptions of racing. It covers motivation for joining the forces, experiences while in the forces (eg general experiences and thoughts, critical events), being wounded and subsequent care and recovery, post-services experience, karting, and thoughts for the future. The control racing drivers are asked for a similar life story relating to experiences and motivations at various stages of life.

Procedure

Ethical clearance was obtained from the University of Nottingham Medical School. Kartforce contacted possible participants for their permission to take part in the study. Participants were given full information regarding the study, including the purposes and the interview protocol.

It was explained to potential participant that entry into the study was entirely voluntary. It was also explained that they were free to withdraw at any time. Informed consent will be collected from each participant before they undergo the interview.

The interviews took place at the University of Nottingham, Kartforce facilities, or via the telephone. All interviews were digitally recorded. They lasted from 30 to 90 minutes. Participants were not paid to take part in the study.

Interview recordings

The interview recordings were passed to the transcriber for transcribing. The transcriber then returned the transcription to the researcher, not keeping copies.

RESULTS

The thematic analysis produced 54 nodes and five themes. The first two themes are: being a soldier and being injured; and so reflect the life participants had to the point where they were injured or wounded. The next themes relate to the ways in which they have dealt with their injuries: coping and support, benefits of karting, and limitations of karting. Much of the information relating to these latter themes focus on various aspects of karting, as that was the focus of the interview.

'Participants' here refers to the injured veterans. The professional racing drivers are only examined when discussing the similarities between racing and combat towards the end of the results section.

The analysis is split into two parts. The first part considers the first two themes, as information here enables an understanding of the type of people who join the armed forces, what such a role entails, and also examines the injuries and the serious impact of those injuries, both physical and mental, and the difficulties of dealing with the world post-injury. The second part of the analysis focuses on the ways in which participants have coped and are coping with their problems, which is where the importance of karting for this group is prominent. The sections on coping and support and the benefits of karting are separate. The first explores the effectiveness of coping and support independently of karting. The latter focuses specifically on karting, though the two are in many ways closely linked.

One important caveat is that the participants are all people who see karting in a positive way. Even those participants who have not continued karting see it positively, though for some it is not their favoured activity. There is no claim that

these participants are representative of the injured veteran community, but they have all, in some way, benefited from the experience of karting.

Being a soldier

The veterans discussed the reasons why they became soldiers. The key reasons were that they had always wanted to be in the forces, that the forces offered a lifestyle that they wanted, that the forces were a way out of a difficult life and that the forces offered discipline (through training) and a future (through a trade).

Army training induces discipline and routine. It involves learning how to do things the 'right' way. It involves developing comradeship and recognising the importance of the team. These factors help differentiate the military mentality from the civilian mentality, which has implications not only for life in the armed forces, but also afterwards, when trying to integrate into civilian life.

It's just you've got that 24/7... you're doing that wrong. You shave... that's not how you shave - this is how you shave. So it's this continuous bang bang bang until you get it right and if you don't get it right you just get fucked even more and then the full class gets it. if you fuck up everybody else feels it... so then the next time you'll not fuck up..... It's the discipline and obviously you're in a routine ... it's not a nine to five job... you could be night shift no sleep at all, no sleep for a week at a time. It's just obviously reprogramming your brain from a civvie to a soldier sort of thing. (CN)

It was either join the army or end up a drug addict (CN)

Several commented that the reason they joined up was that the alternative was a life of crime, drugs, or indiscipline, which itself may indicate the armed forces attract people who may not already be disciplined, but who are the type who will accept discipline.

The participants discussed what it was like to be a soldier, in terms of personality and type of people they are. There was an emphasis on both the intrinsic type of person attracted to the military, and the way in which the military turns a person into something different.

I'm really good at getting things quite logically done and delegate. I think that it is what army brings... any why my company employed me. As soon as they got my CV they knew I was ex-army and they wanted me there and then. (NH)

I think the discipline. You're always going to be on time, you're always going to be presentable, you're always going to be like good communication skills, always confident and stuff like that. So I think the army is good that way, building confidence. (GN)

Being injured

Participants discussed the experience of injury in some detail, from the time of the incident leading to the injury, through the first moments, minutes and hours, through treatment and rehabilitation which lasted months and sometimes years. Many of the participants still have problems, whether with physical pain, the effects of injury or amputation, or the effects of PTSD and other psychological problems. Some report that they are recovering from aspects of their problems. The participants received a wide variety of injuries, in many different circumstances. Some were injured by enemy action and others were injured in

accidents. All participants have long term and continuing problems relating to their injuries. Many, but not all, have had one or more limbs amputated. For example:

I lost my leg on a routine foot patrol. First lad went over a wall and hit a trip wire. The bomb blew up between us. I had injuries all over my body, both arms, legs, torso. I was in a coma for two weeks. (BH)

In 2009 we drove over an IED, I lost my left leg, fractured my back, fractured my skull, and shattered my right foot and had a bleed to the brain. (EM)

head to toe kind of fragmentation wounds on my back and on my right hand side requiring skin grafts etc to heal them up and countless, hundreds of stitches to stitch them up. Got a piece of frag in there which broke several bones in my hands, I'm missing a piece of my bone in my arm and a big piece of frag into my arm there and severed a nerve so I've kind of lost strength and power in my right hand... there was a bit concern that I'd actually lose a lot of function. (FF)

I was involved in an ambush in Afghanistan in 2006. The wagon that I was in a Spartan got blown up by an IED which, obviously blew the wagon up killing 4 guys at the time. Fortunately I was still alive but then I got shot by rocket grenade which, then engulfed me in flames then blowing the engine up. I then managed to get out of the wagon and put myself out and run into cover but, I got shot in the leg twice as well. (ND)

It was pretty simple just on a morning meeting for a patrol in Afghanistan and literally the front man looking for IEDs and I was just unlucky enough to stand on one really, not much else happened.... The left one got blown of straight away, the right one was just bone... it was just like skeleton, that sort of thing, tied it up and sorted it out from there yeah. Yeah I had little

shrapnel wounds to my face obviously, the arms and the lot really... my face was quite bad when I first woke up which was a bit of a shock (NC)

In 2012 I got attacked from behind in a nightclub toilet and fractured my skull and fighting for my life, after an acute subdural haemorrhage so yeah the doctors, well the surgeons told my family and the RAF 'we don't think he is going to survive' but I did so. Apparently I died about 4 or 5 times but, managed to come back around. (MG)

The PTSD is a result of the incident. Thinking about it later I realised I could have died. It almost tore my left arm off. We were in a remote place and after the accident the driver was weeping, he couldn't stop. Whenever I went to hospital they were so concerned with the arm they weren't concerned with feelings. I remember them talking to me in the trauma room, but it was confused because of the ketamine. Throughout I thought I was going to die - everything went black. (HL)

These examples show why veterans have serious problems with both physical and mental health.

While many amputees had no choice about the loss of their limbs, some had to make a person decision about amputation.

I had problems with the leg so after 18 months I made the decision to have it amputated. (BH)

BH said this decision was the right one; it improved his life and he has no regrets. On the other hand, TL was also faced with the decision regarding amputation, and for him this was more difficult:

the bone got an infection ... and that's when they said basically the leg is dying, it's dead, and it's coming off. The choice is we do it sooner rather

than later. So the choice I was given basically was antibiotics to reduce all the infection so they could go in and operate or antibiotics to reduce the infection and have a flailing leg for a few years but, it was coming off. So I made the decision to just have it done in the shortest period of time.... I expected the amputation so I did have some time to prepare for it. In hindsight and thinking about it at the moment I don't think I gave it the due thought that I think I should have done more... but, I don't know what I could have done....maybe I should of done more whilst I still had it, because I don't enjoy having photos taken because even though I've come to accept it to a point, I still don't like having photos so I should of got some photos, bits and pieces before I leaped. Using logic I don't think it would of changed anything but, emotionally I think I could of looked back and that possibly would of helped the adverse effect of looking back and seeing what I used to be and what I am now and as I say have an adverse effect on my mood and on my life in general so yeah. It's just every now and again same thoughts you think... what if I'd done that differently what if what if what if... (TL)

TL describes not only the difficulty of making the decision about amputation, but also the problems he faced afterwards, particularly relating to body image. This is at least partly resolved as he is able to move around in shorts, showing the artificial leg.

Injuries have other consequences.

I can't go to the toilet properly I have to use Catheters and that's the only part of the accident that I'm gutted about.... there was abdominal damage and they said it knackered my bladder. So they said I've just got to use a Catheter for the rest of my life. (EM)

Simple DIY tasks I can't really do so yeah that does frustrate me specially when I have to wait for my wife to come home to screw a light bulb in or something like that (FF)

Just coming to terms with the realisation that there is things I can't do anymore and just getting to grips with that and finding a way to move forward. (ND)

Sometimes the problems relate to other people's behaviour towards the participant:

I think a lot of people think you're a lot more delicate I haven't got any legs and I'm always a bit I can't touch him or do anything.... some people annoy you as they get down on their hands and knees and you think fucking hell I'm still human I prefer someone stands there and talks to you (NC)

Or to body image issues:

It took me like two months to look in a mirror. The OTs made me look in a mirror to let me go out of hospital and that was the hardest thing I've ever gone through (ND)

Body image is something that I don't like it makes me feel quite low so nine times out of ten I will try to have the motivation to do something about that because that is something I can control (TL)

Some have problems with self-confidence:

My self-confidence had been whittled down. This loss of self-confidence made it difficult to go through rehab - I was physically less capable than I had been (HL)

There is the need to adapt to the changes:

I've become a lot more ambidextrous (FF)

I can move, open and close the hand and do different functions with the hand but, I can't move the whole arm because I've lost so much. It's like muscle signals so it's hard to like... I can move the elbow manually if I unlock it and stuff like that but, I can only electrically move the hand. (GN)

Inevitably, participants experience problems and setbacks:

I have had a few temporary setbacks since - mainly when I get infections in the stump and I have to lay up for a few days. (BH)

Well I can't [get around] very well at the moment because the socket I had was rubbing my groin so I pick my new socket up on the 8th of this month. (EM)

Participants varied regarding their need to leave the armed forces. Some recognised that it was inevitable after serious injury:

It's a hard thing getting told that I was going to get discharged from the army but, you just got to take it on the chin don't you?(GN)

But it can still be difficult:

I had the medical board and the medical board had told me we're recommending you for discharge but, then the letter actually comes through in black and white (FF)

I've still had a career being injured I think this is why I'm really bitter with the army because it was a case of I was never good enough to go on a course and do the courses to get promotion but, I was good enough to go on tour and do my job. You know what I mean it's a bit. (NH)

PTSD is or was a problem for many of the participants. They described their symptoms:

I suffer from dark mood, find that I'm not as mobile and able to get around places easily that I want to or used to, I struggle opening up, I struggle with forming relationships and bonds. (TL)

CN described his symptoms and experiences in some detail:

They had told me I had PTSD but, obviously the army didn't want... they weren't interested sort of thing.... I'd met my second wife and I was taking overdoses, I was fighting all the time and I tried to hold her hostage in the house. Not let anyone come in because I was getting flashbacks .

While he wasn't violent towards his wife, he was to others who upset him:

I went home to get my car that was my perfect opportunity and went smashed fuck out of him.... I was getting done for attempted murder on my wife's cousin. I punched him three times

One participant has had treatment for PTSD and has good insight into his condition and the effects it has on him.

It's like road rage (CN)

He has had the problems for years, and still has difficulties on some days:

It all depends on the frame of mind I'm in (CN)

CN claims that it is the behaviour of others that can set him off. This may relate to armed forces training, where one is taught the difference between (forces)

correct behaviour and (forces) incorrect behaviour. Again, it is linked to discipline and what is correct:

It's like somebody walks past you and bump into you in the supermarket then they don't say sorry or excuse me I make it plain to them do you not know what fucking manners is? (CN)

He describes what happens to him:

It's like a little button a little switch there and just goes ping and I'm set off that's what it feels like (CN)

The problem still lies in what happened years ago in Iraq:

Every day I like subconsciously I'm thinking about it... it runs through my brain the ambush - all the time it's like going continuously but, obviously as the years have went on it's like I know how to deal with it it's not at the front it's at the back but, at times when if somebody bumps into me it's like it comes to the front again and that's what triggers me off and that's how I've got the aggression sort of thing. It's just like having a film playing it's there and playing continuously and it's going through my brain all the time but, it's wearing out if you know what I mean and then if somebody or anything happens like trivial or I'm getting fight or flight mode it just comes straight back to the front....as the years have gone on I've learned to deal with it but, there are some days that I could be fine and some days I could be I just cannot be arsed there are days I get up and I just want to sleep all day. I stay in my pyjamas because I cannot be arsed (CN)

This is a clear description of the problems faced by people with PTSD and the people around them. Another participant with PTSD, who was injured while driving, describes the triggers for his problems:

The main issues for the PTSD was going back to hospital, going back to the scene, being around quad bikes, the smell of petrol was a trigger. (HL)

His biggest problem is hyperarousal and, as we shall see later, these have an impact on karting.

Another example of someone who has experienced PTSD, but is managing it effectively, is NE:

The lowest point for me I would say would have been just at the tail end of 2009 after my first tour after being involved with the IED strike where I was sorted of cracked big time under the stress, which was obviously diagnosed as PTSD.

NE has had treatment for his problems, and these have helped him manage the symptoms:

I started to develop all the right tools required to sort of manage what I was going through at the time PTSD in particular was quite bad with dreams... particularly the IED strike. And obviously some of the losses we took out on that tour hit me quite hard. Some of them I actually wasn't as close to, some of them I was close to but, each one still affects me in its own individual way and it was just recognising the way it was affecting me and managing it but, I didn't really have that knowledge of what to do at the time and that's probably why I seen the only way out was to just cut my losses and bugger off basically.

NE claims that he learned a simple tool from one of his therapists:

when it came down to it all she done was extracted it out of me and got me to speak and it was a simple technique but, that worked for me and that was my first sort of tool I developed. (NE)

There is ample evidence that learning to speak about traumatic events is a good way of learning to manage symptoms. This seems to work, and NE does recognise when there might be a problem:

Sometimes I bubble but, I know what to look out for and I know that's just the PTSD coming out it's not nothing to be going running to my CPN or nothing to be concerned about it's just emotions coming through. (NE)

Another participant describes the difficult PTSD symptoms that he is learning to manage.

[I have] seen a lot of things I thought I could handle, I didn't just messed up started turning angry when I got back. Seen a lot of dead bodies and all the crap. I suppose that's what you're going to see when you're war fighting and so on but, my head couldn't handle it. Now I think it could handle it but, at the time I was a young man.... at night... I could handle it during the day but, when I got in my bed I couldn't sleep, but it was flashbacks of the RPG hitting are tank and the rest of it, waking up seeing dead bodies and all that crap. Sometimes it would change to your mates that you were seeing, it was messed up, and it was just a ring mixing together. (RD)

He has been through a variety of treatment, both psychological and medication:

I used to be on a lot of medication, I had to stop taking them because it was making me worse believe it or not. So I can handle it during the day now, but it's at night I still can't handle it. (RD)

Part of his problem is anger at the orders he received relating to not firing back at the enemy when they were being fired on:

I'm still raging why to this day why when we're getting fired at I'm getting told don't fire back. It's like are we here to be cannon fodder and target practise that kind of thing.... it still annoys me and always will until I die. (RD)

One common response from most people with PTSD is that they recognise the problems are going to be with them forever. Treatment for PTSD is about the management of symptoms rather than the removal of symptoms. He describes his change in behaviour resulting from the PTSD:

I was a real happy go lucky guy, big smile all the time. To come back and be grumpy and angry it's not me but, the tablets made it ten times worse... well don't get me wrong they helped for so long but, every time I asked to come off them they increased them and it wasn't any good.... Someone would start asking questions and I'd say leave it. They'd keep on nipping and I'll explode, I'd never get violent but, I would explode and I'd lose the job and it's just been getting a few days here and there to get back into work again and things are starting to improve.

Once I was angry and wouldn't go into a crowd area, I wouldn't have come to a meeting like this. I couldn't handle a face to face with folk. I had a

total loss of all confidence, didn't want to speak to anyone even my mates still moan at me. (RD)

RD describes the simple event that led to him starting to recover from his PTSD:

A kick up the arse. A SSAFA guy he helped me a lot and he said a few words I cannot bring to mind but, the way he spoke was because he was an ex squaddie himself and an older guy ... but, it was like a boot up the arse and I realised myself they are getting sick of me I've got to get my finger out of here and it worked ... I was in this zone where I was... getting mollycoddling and the few words that he said gave me the boot up the arse that I needed. (RD)

He still has symptoms, but he has learned to make sense of them:

I still get angry, I still get nightmares, I get flashbacks when I'm sleeping like when I hear a loud bang it could be an RPG going off a round it's just stupid sounds at work whereas see the pick axe hitting the stone sometimes it sounds like pepper potting shots and it's learning to remember what sounds are and what they used to be....the symptoms are still there but, I've learnt to control them a lot. (RD)

NE makes good general points about PTSD and the problems the country is facing:

I think every single soldier's got PTSD in some form, in fact there is no one that doesn't go on tour unless they are a little bit pathological... no one goes on tour and comes back and don't think about it again. So to me that is traumatic stress and its post and so for me everyone has got dramas,

everyone has got something to think about.... I'll tell you what in ten years' time this country is going to have a big problem.

The evidence from charities such as Combat Stress show that this is the case. There is usually a delay between someone returning from war and leaving the armed forces to needing help. This delay can be many years.

This section has illustrated some of the significant problems people have with PTSD and related problems, and it is clear these problems affect not only the participant, but also their families and friends.

Coping and support

A bit gutted but, it's happened and you just get on with it, man up. (NC)

Many participants reported largely effective coping. 'Get on with it', and 'man up' were common phrases used. There was a high level of resilience in this group, as we would expect - these are the ones who are involved with or who have been involved with Kartforce - they have taken on an active means of dealing with their problems. Comradeship is important. This was developed in the forces, and is missed when participants leave the forces. The wife and family are seen as positive supports, but they do not provide the help that is provided by comrades. Civilians never offer the same social support - they are not seen as understanding the military mentality.

Some veterans directly compared themselves with other injured veterans, usually with the view that their own injuries were not as serious:

I always think there is people worse off and it's up to you to change.... if you

look at the rest of the team potentially I've got one of the softer injuries....there is always other people worse off than you because if I had a shit day I can go see X or Y and I think I've got nothing to dwell on. (MG)
I don't see myself as an injured guy. I don't classify myself as injured, not compared to the other guys, the double amputees and others. I am more active. I compare myself with uninjured people. (BH)

Another important factor is comradeship, whether that is about sharing friendships and humour or the support received from other veterans

I was told by some people that you'll never make friends like you will make in the forces (NC)

Sometimes you'll think about it hard and sometimes you'll just have a sort of short thinking about it but, the difference is or the biggest factor then is you've got other guys around about you. so you're talking about what's going on, what's just happened and you're bringing each other up you know what I mean. Supporting each other because at the end of the day it's about family. (ND)

Even though I've lost a leg I wouldn't change it I thoroughly enjoyed everything about the comradeship, the friends, and the adrenaline you get when doing everyday work. (NC)

Not only do comrades provide support, family do as well, though in different ways:

they're supportive they just forget about it, they never talk about it (GN)

I wasn't a nice person to them so suppose that's what family are for emotional punch bags aren't they. (MG)

If it wasn't for my friends and family I wouldn't be here and that's a fact (RD)

While service marriages do break down, wives in the more successful marriages are seen as providing a lot of support, even when they have to face problems.

It's probably harder for me to say to my missus if you don't want to be with me... but, she said if you change as a person then obviously that's not the bloke I fell in love with. So that sort of gave me a kick up the arse really and that was that (ND)

She's the only person I would listen to (CN)

I have a supportive wife, I am very lucky (HL)

Wives provide practical help:

She had to move in and cook for me, help me change my dressings when I first came home, help me look after myself (FF)

She really is very good I mean she snaps now and again obviously because I do put a lot of pressure on her with this nine times out of ten I do most things but, she does if I'm sore she will carry things. (TL)

The participants reported that they do not receive support from their civilian friends because they don't understand the military:

I can't speak to my normal mates and say this happened because they don't understand (CN)

You can't really talk about the army to your civilian mates as they don't really know what you're talking about (GN)

Participants were sometimes positive about doctors and therapists, but sometimes there were problems, particularly if they thought the doctor did not,

or did not want to, understand. CN was particularly negative, in relation to his PTSD:

what's the point in opening up telling this guy how I'm feeling and what's happening in my day to day life.... He's not got the time for me to sit down and explain to him so what's the point in explaining it to him.... I went to see a new psychiatrist and basically I tell him to fuck off. I says you've not got a dam clue you've never dealt with anybody that's got PTSD.

Benefits of karting

Even though I've lost a leg I wouldn't change it I thoroughly enjoyed everything about the comradeship, the friends, and the adrenaline you get when doing everyday work. (MB)

A year ago I would be in my pyjamas watching telly, now I get up and get motivated (BM)

Dave's a natural guide (NE)

The participants were very positive about all or most aspects of karting. This is expected as they have all had involvement with Kartforce at some level, and even those who are not currently karting, were still positive about both the organisation and karting itself as a means of getting on with life after critical injury. This functioned at several levels. Some participants discussed the similarities between karting and armed forces experience, the link between eg combat patrol and racing (careful preparation, adrenaline, constant vigilance and decision-making, no emotion until afterwards, dealing with mistakes and problems in a logical and fast way), though others did not think there were any similarities. Going karting is seen as having other advantages, including teamwork, comradeship, routine, something to look forward to, something to

reflect on, and the provision of a level playing field when racing. The Kartforce organisation was looked on positively in the sense that it provided more than just the karting experience. It provides a family environment, support, help with jobs or children. There is also, for some, the added advantage of moving forward in a career in motorsport, whether that is as a professional driver or in another area such as being a mechanic.

The attitude towards Dave, who runs Kartforce, was very positive.

Dave and the team can't do enough for you to help you. (MG)

He doesn't get enough credit for the things he does (NC)

I think it's first class I really do enjoy it.. I can't thank Dave enough. (RD)

NE was particularly positive in his praise, highlighting the range of things, not just about karting, but with other aspects of life.

Dave is great at looking at avenues of ways to help individuals, some people need more help than others. Dave gives me good guidance. I ring him, I speak to him through Facebook on messaging and texting, always asking for advice and he's never steered me wrong to be honest but, if he sees an opportunity where an opportunity could arise from opportunity he'll follow it and chase it up

With regarding to karting itself, one of the main benefits described by participants was the adrenaline buzz:

If you get that adrenaline you just want to go back out you want to go and jump in go kart (CN)

And just overtaking people, bumping into people, taking people out. I came off at Le Mans when we done that race and I was like shaking with so much adrenaline it was awesome and the atmosphere. (ND)

For one participant, the comparison with the key PTSD symptom, hyperarousal, was important, showing that the same physical feeling can be interpreted in different ways, both positive and negative. :

The biggest thing about PTSD was hyperarousal. The hospital brought on the PTSD symptoms. The hyperarousal is similar to when racing, getting excited, but it is positive, not negative. (HL)

Many of the participants discussed the need for a challenge in their lives. They needed a challenge when they were in the armed forces, and they still need a challenge, they still need to be pushed to their limits, and karting provides that:

It is a challenge. I like to test myself at these events (HL)

In the army you're always pushed, pushed, pushed so when you're in that car and you're just got a voice basically in your head going push, push, push. So everybody's pushing you and that's why you're determined. (GN)

You get a lot more determined... everybody's determined to do something even if you don't overtake them or don't get passed them you're still determined to get right up his rear of the car so. (FM)

That competitive element is important

I will always aim to come near the top in any race. I can still do everything. (BH)

I am massively competitive from even the basic board game up to a sport I am massively competitive and I don't like to lose even if it's playing my 11 year old son, I don't like to lose. (MG)

It is also about discipline:

I think ... we're all disciplined, so we're not doing anything stupid that will affect the team on the leader board or whatever. So we're disciplined that way. I think military does do a lot. (GN)

And routine:

I've got a calendar I know what's going to happen. Right I've got a race this week then I'm racing at Haddington, or I'm racing at Extreme Karting it's just calendar it's routine sort of thing. Then obviously it helps in a big way (BM)

Karting provides participants with confidence:

Kartforce... they build your confidence. When I first had the accident I didn't want to go out in a t-shirt and stuff like that, but Kartforce like just makes you deal with things or helps you deal with it and just takes your mind of it so you don't really care. And you just forget yourself and crack on with it. (FM)

One big benefit of karting for the participants is that it creates an equality of competition between the injured veterans and people without injuries. There is no need for any handicap system. The karts are adapted for people with missing limbs and other injuries, so the participants can race fairly with others.

Actually we're pretty good to be honest I think people gives us a lot of respect but, we go out there and battle it's good to know that. You're on a level playing field with everyone else I think as well. (NH)

As discussed earlier, comradeship is important to these participants, and Kartforce provides a high level of this. This is both through friendly banter and working together as a team and trying to win.

it gets you back to working with people and bonding with people again (DL)

It's just like a big team that all get on You can go and talk to each other and just have a laugh about what they've done and whatever. Once you're on the track all you're thinking about is the guy in front and overtaking him but, again you're thinking oh I need to get better lap times to overtake this team on the leader board and stuff like that. So it always comes back to working as a team. (GN)

We sit there and banter like sometimes we end up having a few beers. I think we chat to each other about the issues we get but, it's good because they don't always like talking to doctors and that (NH)

It's been part of a team again and the camaraderie... you're part of a team again, you want to win and you're winning with a team you're not winning things yourself. (RD)

Karting has further, wider benefits, away from the racing itself:

My wife noticed the changes in me. I had something to focus on, I was training physically, it was a change from sitting in a corner and being in pain, so there were benefitsIt helped to concentrate on a race, it made a difference to mood and personality.... It has had a positive impact on my

family. I have two children, 6months and 2 years. The older one knows about the issues with hospitals. My wife says I am not now a horrible irritable person due to Kartforce. (HL)

First and foremost it keeps you busy. So I'm constantly busy and I'm constantly thinking about racing even when I'm having a downer or a relapse into PTSD. For example when I was in India I just reverted back to the racing looked over my footage, looked over other peoples footage, took notes, tried to learn and focused on that and it's given me a lot of drive and focus on something else rather than on PTSD ... It's been a good tool for managing my PTSD. (NE)

Comparison between karting and being in the armed forces

There is no comparison between karting and combat. (BH)

There are a lot of attributes that are similar to racing drivers and soldiers (NE)

Across most psychology there are fundamental disagreements between people, and this is no exception. This is a controversial area, and the participants were split about the similarities (or not) between racing and combat, with some seeing similarities and others denying any similarity. When comparing the *psychological* elements of racing for successful veterans' and professional racing drivers' there are several similarities between combat and racing.

With karting it is very clear what you have to do, go-karting puts you back in a similar environment to operations. There is the helmet and the uniform, the overalls are a sort of uniform. There is a shift of focus, forgetting everything else. It is similar for climbing, running or cycling. The rest of the world is zoomed out.... there is an intensity of being in the kart. We went to

training at Wigan. It is similar to the army, there is the training for the event, then the race to see if the training has worked. (HL)

When you're out in battle you're rushing into it, you can't turn away and run away when you get shot. It's the same when you're out on track if someone tries to bump into you... you can't get angry and start bumping into them you've got to stick to your track and I don't know if that makes sense to what you're saying there but, you get a buzz you've got to react to it. Same as when you're out in battle you've got to react to it. So it's similar but, out in battle you've got guns you've still got to charge to it but, when you're out on track if someone bumps into you... you can't take your foot of the brake you've still got to full throttle it and get you're apex for that corner. So and then you dwell on it when you come in. Could I have done that different, could I have done better... (RD)

NE provides a detailed account of the psychological and practical aspects of racing:

Before a race you need to have that mentality to plan properly what you want to do. If you're in a battlefield, for example you're doing an air assault, you're planning exactly what you are going to do when you get off the chopper, you're going to plan how you're going to get your guys ready and move off your routes that you're taking and you're planning in detail what you want to do..... Before a race I'll visualise and plan in detail where I want to go and what my plan of action is for the start of the lines I'm going to take, where I'm going to brake and where I'm going to turn in, where I'm going to put the power on and that's similar for racing and being a soldier.... It's having the discipline to not come in the corner with your hair on fire all guns blazing and knowing that that's going to have an adverse effect later on in the lap.... And that comes to a direct correlation with a soldier and a racing driver. Racing drivers and soldiers have to

take all the information displayed in front of them and make a split second decision very quickly and very accurately and you'll get it wrong, you'll get it right and it's the same for both practices. For example in the battlefield you're coming under fire, you're taking all that information represented in front of you where the enemy is, the type of fire taken etc and then you have to take into consideration what assets you've got and then you make a decision very quickly and probably its more critical to get right as a soldier which probably helps with the racing but, obviously you need to make a right decision or folk get hurt or in a worst case scenario get killed. So you're talking in all that information and you're making the decisions and 99.9% of the time they need to be the right decision.

It's the same with the car so you've planned meticulously and someone ends up in front of you and they're taken away the line that you intended to use and you've got to take that information and make the decision if you're going to go one way or another and get around them or you're going to stay behind them for now and plan for attack later. So you're constantly planning... the situation is constantly evolving. Constantly planning and reassessing throughout the entire lap which I feel is the exact same as ... in the battlefield no different. It's no different in the way you plan it but, obviously the things you're planning are different.

This account was the most detailed provided by a participant regarding the similarities between karting and the battlefield. Though others did describe similar experiences.

We now move on to the views of the professional racing drivers (In this section, the comments of the professional racing drivers are used, but no direct quotations are provided, as several did not want to be identifiable).

When professional racing drivers were asked about the psychology of driving a race, they put it in a similar way to several of the battle descriptions by the soldiers. The psychology involves obtaining and keeping the appropriate mindset before, during and (to some extent) after the race. The professional drivers talked about the preparation stage being very important, to plan for the race, to avoid too much emotion. At the start of the race the professional drivers said they could switch into a calm driving mode, clearing their minds of any problems, and getting ready for the race starting, whereas for some veterans it was an emotional time:

The emotions are all over the place it wouldn't be a straight line it would be up and down. (RD)

The critical point was whether or not the driver got off to a good start. If so, then that would be good. If not, then immediate replanning has to take place to determine where the other drivers are and how they can get past them. Throughout the race it is critical not to allow emotions to become dominant. Even when the driver made a mistake, or another driver made an error that negatively affected the participant's driving, then it was important not to have negative emotions, which were always seen as adversely affecting the race. This was unlike some veterans:

If the person in front of you made a mistake and they shoot up and you think what are you doing, you fucking idiot (NC)

I suppose you're not getting mad like mental... I think it's like fucking hell you idiot and you go and chase him. I think it like pushes you harder to go faster and it's not like a mental I'm going to go and kick someone's head in when I get off the track and stuff. (NC)

The professional drivers discussed the constant planning and re-planning that took place throughout a race; whether that relating to retaining a particular place, overtaking someone, avoiding hazards, or going in for a pit stop. There was a constant high cognitive load. After the race finished, drivers differed in the way they described their emotions. They were split between remaining relatively unemotional, even when they did well, and powerful emotions relating to how well they thought they did in the race, but all would debrief and analyse what they did well or otherwise. This was the same for the veterans:

After every race I'll sit there thinking how I could be better, I always challenge myself. (NH)

The high level of focus experienced by professional drivers, was also present in the veterans, and was perhaps not just about racing, but about being able to ignore any symptoms for a while:

I'm just focused on winning as well do you know what I mean there is nothing round about me I'm just focused on what's in front of me. (CN)

The good thing about racing that it takes your mind off everything so you're focusing on... (GN)

I'm trying to get it all emotion rid of when I'm on the track to be honest (NH)

While most of what the professionals said showed a high concordance, particularly relating to the control of emotions, there were some differences.

With regard to any sense of comradeship, some drivers did have friends among the racing fraternity, while others had no friends and tended not to mix with them. This is a major difference between the veterans and the professionals, with most veterans arguing for the importance of comradeship when racing. There is a difference between the karting races, which can be endurance and involve several drivers, and F1, where there is a single driver, but it is not likely that this explains the difference.

Another difference between the professional drivers was that some focused on beating other people and others focused on improving track times. One in particular was only really concerned about track times, as he was a test driver before becoming an F1 driver, and hadn't changed his approach.

One veteran did describe focusing on both these factors:

Once you're on the track all you're thinking about is the guy in front and overtaking him but, again you're thinking oh I need to get better lap times to overtake this team on the leader board and stuff like that. So it always comes back to working as a team. (GN)

One interesting finding, which will be developed further elsewhere, is when the behaviour of the veteran drivers is compared with that of the professional drivers. The more successful veterans were able to control their emotions in a similar way to the professional drivers, whereas some veterans described getting angry or upset at either their own or other racers' errors. This emotion negatively affects performance, and veterans are generally aware of this.

I just lose my head I don't think. (NH)

Of course, the veteran drivers are amateurs, and several of them are beginners, so they make mistakes:

I need to keep myself calm and that I think I keep trying to teach myself right take it easy around the corners because I know every race I have everything goes right but, I always fuck up once or twice. So I'm just trying to coach myself into being better really do you know what I mean. I always find faults that I can be better with. (NH)

One key difference for veterans is that karting helps them forget about their problems:

Karting helps me because I forget about everything I've nothing else to worry about and it has helped me it's just the fact of little things trigger off you know that are sort of coming out. (ND)

Problems with karting

What you and the team have done has given me a new focus and whilst it might have 'springboarded' me in slightly the wrong direction it was the 'springboard' I needed. I am proud of being involved in the team. (HL - email to Kartforce)

Some participants tried karting and found that it wasn't for them. No one dismissed it in a negative way, but it was not suitable for them. This was sometimes because of difficulties getting to races because of family commitments, because of a preference for other sports, or sometimes because of the driving experience itself. This was particularly so for one individual, who had PTSD as a result of a vehicle accident, and so had difficulties with some of the driving experiences.

The karting they do is endurance and there is a lot of vibration and stuff like that so I can't do hugely long sessions. I can sort of after twenty minutes half an hour I'd find myself just aching, just driving with one hand (FF)

It's keeping a balance where I can come karting and sometimes I can do this and sometimes I can do that. I love the karting but, I can't keep letting everyone down. (RD)

One person left karting because of a combination of physical injury and their PTSD.

Two incidents. One on a track in London. People were invited to come along and race. One of those people, slammed very heavily into the back of my kart, slammed it into the barrier. I cracked two ribs and had to have four weeks off work.... The second incident, someone crashed into me at 50mph. I'd got all the safety equipment so was ok. I then heard in the pits people saying they were planning to 'take people out'. I decided I couldn't risk it, I have family, two kids, a business to help run.

I decided it was too high a risk ... it was a bit too much. (HL)

Perhaps the most interesting comment regarding karting was from TL:

One of my problems is I hate driving¹

A further problem for several participants is that driving itself can be difficult at least in part because of their injuries.

It's really hard. So I done my first 24hr race a couple of weeks ago down at Milton Keynes and we're doing 1 1/2hrs on and 1 1/2hrs stints each so that was real hard, that was... my whole was just swollen it was mayhem. (GN)

¹ One highly successful professional racing driver did admit that he didn't like cars

when I race in the karts because we use hand control I think subconsciously my legs tense up so when I jump out of the car I have to walk it off for half an hour (NH)

DISCUSSION

The analysis produced a number of themes. These included 'being a soldier', 'being injured', 'coping and support', 'benefits of karting', and 'limitations of karting'. There was also a comparison between racing and combat. The themes varied in importance in relation to the research questions, which focused on the ways in which karting helps resolve the physical and psychological problems experienced by injured soldiers. The first three themes set the scene for examining the benefits of karting, which are discussed below. There were few recognised limitations of karting, but that would be expected given the sample of participants were kart users and so not representative of the veteran population. The participants were all very positive about the benefits of karting and about the organisation Kartforce.

It is important to provide information about the participants' experiences before examining the benefits of karting. 'Being a soldier' examined the key psychological factors that make a good soldier, and how training instills discipline, focus, and comradeship; and that the armed forces experience may only be suitable for certain types of people; those who appreciate the discipline, those who enjoy excitement and the adrenaline buzz. 'Being injured' provided examples of the experiences of participants who had been severely injured, whether in combat or as a result of a serious accident. There was a significant threat of death for these participants, and the circumstances caused PTSD in

many of them. The injuries, the long months in hospital, and the inability to continue with their armed forces careers had significant further effects. Becoming disabled can mean that a person can no longer do the activities that provide the adrenaline rush they need. 'Coping and support' focused on how the participants managed (or failed to manage) adapting to their physical and psychological changes. Their experiences support the evidence that such changes can lead to mental health problems; not just PTSD, but also depression, anxiety, and drug and alcohol problems. Many of the participants in this study had significant mental health problems relating to their experiences, and they were at different stages of resolving their problems. It was clear that karting had contributed significantly to their recovery. Many reported karting-related benefits, and some reported that their families had noticed positive changes since they started karting. There was also a general positive attitude towards their situation. Comments such as 'man up' suggest these are often strong resilient people, who will find ways to overcome the effects of their injuries.

Participants reported karting provided a range of benefits, both relating to racing itself and activities outside of racing. Outside of racing itself, the two main benefits included first, getting back the comradeship of the armed forces, sharing experiences with likeminded people who have an armed forces sense of humour. Second, Kartforce itself, the organisation is reported to help out not only with karting, but more personal help where required.

With regard to the benefits of racing, participants described the adrenaline buzz, the focus, the competitiveness and the discipline, the exact qualities they described that armed forces experience provided; and that they had lost since

being injured. They also commented on how karting enabled them to compete on equal terms with able bodied racers.

These factors clearly helped participants deal with the physical consequences of their injuries. They experience through karting many of the behaviours and characteristics they enjoyed about being in the armed forces. They also helped deal with PTSD and other mental health problems, partly for the same reason, that they are now more fulfilled, and partly because doing these activities enables the person to focus on something more positive than the mental health issue, and there is less time to dwell on negative issues. Indeed, several participants actively use karting to deal with their problems, even when they were not racing. They reported how, if they experienced symptoms, then they would instead think about karting, whether it was debriefing themselves about past races, analysing mistakes, etc, or preparing for the next race, analysing tactics and strategy. This is a significant finding because it shows that at least some people can use karting to effectively deal with PTSD and other mental health problems.

The most contentious issue is whether karting is similar to combat, and here there were significant differences between the participants. Some thought it very similar, and also thought that this was why they got so much out of karting, others disagreed. This doesn't matter; people have different experiences and differ in their interpretations of these experiences; but it is still worth looking at the possible similarities, and consider this for future research.

It is here that the comparison with the professional racers is important. None of the professionals had experience of combat. Professional racers described the

psychology of racing, the focus and concentration, the adrenaline buzz, the constant heightened perception and cognition, thinking through potential problems throughout the race. They discussed the need to be functionally emotionless in order to concentrate on the race. The armed forces participants described combat in similar ways. Several described a combat patrol as being very much like racing, from planning through execution and debriefing. The psychological characteristics were very similar. This is a key issue, that while combat and racing are obviously very different activities, the psychological characteristics are very similar, and this may be why participants disagreed. On a combat patrol, intense emotion can adversely affect the performance of the patrol. In the same way, and as described by several participants, intense emotion can both lead to mistakes when racing, and can impact on performance after making a mistake.

The findings of this study provide insight into why the participants felt they benefited from karting. As noted earlier, these are people who have actively chosen to go karting, and so may be more likely to perceive the benefits. There are a number of implications for the study, particularly relating to possible further research, and to the possibility of providing karting and similar activities for more veterans.

Clearly, further research is needed to elucidate the main issues, including an examination of psychological variables before, during and after racing and combat. If karting does reduce psychological problems in veterans, then this should be supported. There are currently many thousands of veterans receiving psychological treatment for their war-related problems, and activities such as karting can alleviate the strain on the health service. Not only that, psychological

treatment is designed to reduce symptoms of PTSD and help people manage the symptoms, ie to make the person's life less negative; karting on the other hand may not only relieve the symptoms, but also provide a positive outcome, ie doing something that provides enjoyment and satisfaction. Many people who are severely injured lose their purpose in life. Karting can restore the purpose to their lives.

The underlying psychological mechanisms relating to why karting aids recovery and provides purpose are partially elucidated in this study. The psychological mechanisms that come into play during combat and karting have a number of similarities; and so it makes sense that if someone has gained life satisfaction through armed forces experience it is not surprising that karting will also provide satisfaction. The discipline, dedication, focus and emotional control, along with the adrenaline buzz, are critical to both, and both attract similar kinds of people.

Linked to this is the interesting comment made by one person who interpreted hyperarousal in both negative - as a PTSD symptom - and positive - karting. There are theoretical implications here. Hyperarousal is a key component of PTSD, the inability to regulate levels of physiological arousal due to the presence of traumatic memories. Physiological arousal does not in itself constitute a negative emotion, that is in the interpretation of the arousal (an idea which goes back to William James at the turn of the Twentieth Century). If a person with PTSD can, through karting, interpret physiological arousal in a positive way there may be implications for the course of PTSD.

This research suggests several possible pathways for future research; particularly but not solely concerning karting. It would be beneficial to try and unpick the

psychological variables that are important to showing that karting is beneficial for injured and mental unwell veterans. One such study would involve detailed individual assessment to determine which personality factors help predict success with karting. The current study showed that a need for excitement, an ability to control emotions, to focus, and the need of comrades is important. What other factors are relevant? The more we can show that karting is of itself beneficial to injured and/or traumatised veterans the more likely it is that it will be used by a greater number of people; which suggests a need to provide further funding for organisations such as Kartforce.

While determining who would benefit from karting is important, research should also determine who will not benefit from these activities. There were suggestions in the current study that factors such as having a traumatic injury due to a car accident may mitigate against the benefits of karting.

Research should also explore other means by which these populations can benefit. While many need the excitement of something like karting, others may prefer gentler pursuits (photography, fishing). There is a strong case for providing funding to explore these possibilities. It is insufficient to just provide psychological therapies, when alternatives can have a positive as well as mitigating the negative sides of injury and illness. Mental health is still to some extent stigmatised in veteran populations, so it is important to provide alternatives outside of the health service.

In conclusion, this detailed study of injured armed forces personnel, compared with professional racing drivers, has demonstrated that, even for people seriously injured and psychologically traumatised, there are significant benefits

of karting. These benefits relate to racing itself, to the organisation (Kartforce) providing the experience, to the comradeship of the people involved, and to providing the opportunities for people, even outside of racing, to alleviate their psychological symptoms through race planning and debriefing. While karting may not be for everyone (in the same way as psychological therapy is not for everyone), we should be examining in more detail the benefits that can accrue for people taking part. The duty of care we have in society towards our veterans is not just healthcare, but providing new and positive opportunities for their often shattered lives.

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Appendices

Participant information sheet - veterans

Participant information sheet - drivers

Consent form

Interview protocol - veterans

Interview protocol - drivers

Participant Information Sheet

Final version 1.0: 1 May 2014)

Title of Study: Developing narratives of kart drivers who are armed forces veterans - veterans' version

Study id: Kart01

Name of Researcher(s): Dr Nigel Hunt

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the purpose of the study?

The purpose of the study is to explore the effectiveness of racing as a means to help wounded veterans come to terms with their experiences. It uses a narrative approach, which means that it focuses on the meanings people have for explaining their experiences, thoughts and feelings. This builds on my previous research which has both considered the problems faced by veterans and the ways in which narratives help people make sense of their experiences. A number of professional racing drivers are also being interviewed for their perspectives on the motivations relating to racing, and how racing fits in with their lives.

It is not a clinical study, it does not involve therapy. We just want to gain a better understanding of why racing can help people.

Why have I been invited?

You are being invited to take part because you are a wounded armed forces veteran who takes part in karting. We are inviting approximately 15 participants like you to take part, and a smaller control group (5) of non-veteran racing drivers, so we can make a comparison.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time up to a week after you have been interviewed and without giving a reason. This would not affect your legal rights.

What will happen to me if I take part?

You will be contacted and a date and time arranged for an interview. This is a 'life story' interview, which is likely to take between 30-120 minutes, during which time you will be asked about your life experiences, from before you joined the armed forces, your experiences during your service, including when you were injured, what happened afterwards, why you took up karting, and your views about karting. You will be asked to discuss your thoughts and feelings, so this may make you emotional at times. The interview will be recorded. It will be transcribed and analysed along with the other interviews. You will be telephoned a few days after the interview to see if there is anything you would like to add or change.

The interview will take place in a convenient place for you, preferably a private area (eg office or room in your home), where you will not be disturbed. The interviewer may take notes. Alternatively the interview can take place over the phone or via Skype.

The interview and subsequent transcription will only be seen by the interviewer, the transcriber and the main researcher. All information will be anonymised, and any analyses will not reveal your identity. If you say something you wish to withdraw just say so.

Expenses and inconvenience allowance

Participants will not be paid to participate in the study.

What are the possible disadvantages and risks of taking part?

You will be asked about your experiences as a member of the armed forces, when you were injured, and the consequences of the injury. This may cause temporary distress, as the focus is on the way you feel, the emotions you experienced, how you acted, and how these events impacted on your relationships. You will be given a copy of the interview schedule before you agree to take part, so you will be aware of the focus of the interview, though as with any interview, the actual questions will depend on your answers.

If there is a significant problem arising from the interview, you will be provided with guidance regarding where to obtain help.

What are the possible benefits of taking part?

The information we get from your participation in this study may help us understand why it is that activities such as karting can help veterans, particularly injured veterans, deal with some of the problems they experience. The greater our understanding of these problems, the more likely we are to be in a position to help others, not only in relation to karting, but also other other competitive motorsport activities.

What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. The researchers contact details are given at the end of this information sheet. If you remain unhappy and wish to complain formally, you should then contact the Ethics Committee Administrator, Mrs Louise Sabir, Division of Respiratory Medicine, D Floor, South Block, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. E-mail louise.sabir@nottingham.ac.uk.

Will my taking part in the study be kept confidential?

We will follow ethical and legal practice and all information about you will be handled in confidence. No one outside the project will be aware of any information that you provide; that includes people from KartForce.

If you join the study, some parts of the data collected for the study will be looked at by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.

All information which is collected about you during the course of the research will be kept **strictly confidential**, stored in a secure and locked office, and on a password protected database. Any information about you which leaves the institution will have your name and address removed (anonymised) and a unique code will be used so that you cannot be recognised from it.

Your personal data (address, telephone number) will be kept for 12 months after the end of the study so that we are able to contact you about the findings of the study *and possible follow-up studies* (unless you advise us that you do not wish to be contacted). All research data will be kept securely for 7 years. After this time your data will be disposed of securely. During this time all precautions will be taken by all those involved to maintain your confidentiality, only members of the research team will have access to your personal data.

What will happen if I don't want to carry on with the study?

Your participation is voluntary and you are free to withdraw at any time up to the point the data are analysed, without giving any reason. This is another reason why we code the data using a unique code. You are unable to withdraw after this as the analyses draw together the information provided by all participants, and it becomes impractical to extract individual data.

Withdrawal also applies during the interview itself. If you change your mind about participating once the interview has begun, you can stop it at any point and the data file will be destroyed.

What will happen to the results of the research study

Once the data collection is completed the resultant interview transcripts will be analysed, a report provided to KartForce, and a journal article prepared and submitted for publication in an appropriate refereed journal. You can obtain a copy of the KartForce report either from KartForce or by contacting the lead researcher. The report will be completed within two months of the completion of the interview stage.

Quotations used within the report will not be identifiable as you or any other individual. If you have used names these will be changed.

Who is organising and funding the research?

This research is being organised by the University of Nottingham and is being funded by Nigel Smith.

Who has reviewed the study?

All research in the University of Nottingham is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Medical School Research Ethics Committee.

Further information and contact details

Principal Investigator: Dr Nigel Hunt

Contact details: nigel.hunt@nottingham.ac.uk, 07872072048

Participant Information Sheet

Final version 1.0: 1 May 2014)

Title of Study: Developing narratives of kart drivers who are armed forces veterans - pro race drivers' version

Study id: Kart01

Name of Researcher(s): Dr Nigel Hunt

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the purpose of the study?

The purpose of the study is to explore the effectiveness of racing as a means to help wounded veterans come to terms with their experiences. It uses a narrative approach, which means that it focuses on the meanings people have for explaining their experiences, thoughts and feelings. This builds on my previous research which has both considered the problems faced by veterans and the ways in which narratives help people make sense of their experiences. The focus is on the benefits that might be obtained by armed forces veterans taking part in racing. You are being asked as a professional racing driver so we can compare your motivations and feelings surrounding racing compared with those of veterans.

A number of armed forces veterans who take part in karting are also being interviewed for their perspectives on the motivations relating to racing, and how racing fits in with their lives.

It is not a clinical study, it does not involve therapy. We just want to gain a better understanding of why racing can help people.

Why have I been invited?

You are being invited to take part because you are a professional racing driver. We are inviting approximately 5 participants like you to take part, and a larger group (15) of veteran kart racing drivers, so we can make a comparison.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time up to the point the data are analysed without giving a reason. This would not affect your legal rights.

What will happen to me if I take part?

You will be contacted and a date and time arranged for an interview. This is a 'life story' interview, which is likely to take between 30-60 minutes, during which time you will be asked about your motivations for taking up racing, your experiences, of racing, how it makes you feel, and the impact of retirement (if appropriate). You will be asked to discuss your thoughts and feelings. The interview will be recorded. It will be transcribed and analysed along with the

other interviews. You will be telephoned a few days after the interview to see if there is anything you would like to add or change.

The interview will take place in a convenient place for you, preferably a private area (eg office or room in your home), where you will not be disturbed. The interviewer may take notes. Alternatively the interview can take place over the phone or via Skype.

The interview and subsequent transcription will only be seen by the interviewer, the transcriber and the main researcher. All information will be anonymised, and any analyses will not reveal your identity. If you say something you wish to withdraw just say so.

Expenses and inconvenience allowance

Participants will not be paid to participate in the study.

What are the possible disadvantages and risks of taking part?

There are few significant disadvantages and risks of taking part. You can withdraw at any point, and you are free not to answer any questions you do not wish to answer. As the interview focuses on feelings and emotions in relation to events in your life, you may feel temporary distress.

What are the possible benefits of taking part?

The information we get from your participation in this study may help us understand why it is that activities such as karting can help veterans, particularly injured veterans, deal with some of the problems they experience. The greater our understanding of these problems, the more likely we are to be in a position

to help others, not only in relation to karting, but also other competitive motorsport activities.

What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. The researchers contact details are given at the end of this information sheet. If you remain unhappy and wish to complain formally, you should then contact the Ethics Committee Administrator, Mrs Louise Sabir, Division of Respiratory Medicine, D Floor, South Block, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH. E-mail louise.sabir@nottingham.ac.uk.

Will my taking part in the study be kept confidential?

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If you join the study, some parts of the data collected for the study will be looked at by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.

All information which is collected about you during the course of the research will be kept **strictly confidential**, stored in a secure and locked office, and on a password protected database. Any information about you which leaves the

institution will have your name and address removed (anonymised) and a unique code will be used so that you cannot be recognised from it.

Your personal data (address, telephone number) will be kept for 12 months after the end of the study so that we are able to contact you about the findings of the study *and possible follow-up studies* (unless you advise us that you do not wish to be contacted). All research data will be kept securely for 7 years. After this time your data will be disposed of securely. During this time all precautions will be taken by all those involved to maintain your confidentiality, only members of the research team will have access to your personal data.

What will happen if I don't want to carry on with the study?

Your participation is voluntary and you are free to withdraw at any time up to the point the data are analysed, without giving any reason. This is another reason why we code the data using a unique code. You are unable to withdraw after this as the analyses draw together the information provided by all participants, and it becomes impractical to extract individual data.

Withdrawal also applies during the interview itself. If you change your mind about participating once the interview has begun, you can stop it at any point and the data file will be destroyed.

What will happen to the results of the research study

Once the data collection is completed the resultant interview transcripts will be analysed, a report provided to KartForce, and a journal article prepared and submitted for publication in an appropriate refereed journal. You can obtain a copy of the KartForce report either from KartForce or by contacting the lead

researcher. The report will be completed within two months of the completion of the interview stage.

Quotations used within the report will not be identifiable as you or any other individual. If you have used names these will be changed.

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Who has reviewed the study?

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Further information and contact details

Principal Investigator: Dr Nigel Hunt

Contact details: nigel.hunt@nottingham.ac.uk, 07872072048

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CONSENT FORM

Final version 1.0: date

**Title of Study: Developing narratives of kart drivers who are armed
forces veterans**

REC ref: *(to be added after approval given)*

Name of Researcher: Dr Nigel Hunt

Name of Participant:

Please initial box

1. I confirm that I have read and understand the information sheet version
numberdated..... for the above study and
have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to
withdraw at any time, without giving any reason.

3. I understand that relevant sections of my data collected in the study may be looked at by the research group and regulatory authorities where it is relevant to my taking part in this study. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential.

4. I understand that the interview will be recorded and that anonymous direct quotes from the interview may be used in the study reports.

5. I understand that information about me recorded during the study will be kept in a secure database. If the data is transferred it will be made anonymous. Data will be kept for 7 years after the study has ended.

6. I agree to take part in the above study.

Name of participant

Date

Signature

Name of Person taking consent

Date

Signature

2 copies: 1 for participant, 1 for the project notes.

KartForce Veterans' Interview Protocol

Introduction

This is an interview about the story of your life, with a focus on the reasons you joined the armed forces, your experiences in the armed forces, and subsequent events. I am interested not only in what happened but how events made you feel and how you coped with them. I am interested in hearing your story, as you remember it. The story is selective; it does not include everything that has ever happened to you. Instead, I will ask you to focus on a few key things in your life. There are no right or wrong answers. Instead, your task is simply to tell me about some of the most important things that have happened in your life and how you imagine your life developing in the future.

The purpose of this interview is not to figure out what is wrong with you or to do some kind of deep clinical analysis! Nor should you think of this interview as a "therapy session" of some kind. The interview is for research purposes only, and its main goal is simply to hear your story. Everything you say is voluntary, anonymous, and confidential.

Do you have any questions?

Outline of life in chapters

Imagine your life was a novel. Can you describe the main chapters of your life? What is contained in a chapter is up to you. It is your life story. Most people can describe their life in 2-7 chapters.

High and low points of life

Please describe very briefly the high and low points of your life. For each, please explain why (draw chart).

Details of these high and low points

Now I would like you to focus on these highs and lows and give me some details for each. I would like to know more about the context, what you thought (and how you think), what you felt (and how you feel), so that I can understand why these points are high or low.

Other key areas (if not already covered)

Armed Forces: Can you tell me more about your Armed Forces service.

Focusing on issues not already discussed, can you tell me more about your experiences in the Armed Forces? Talk about motivation.

Impact of injury: Tell me about the impact of your injury; not only the actual experience, but how you felt at the time, when you were recovering, and now. What impact does the injury have on your life now? How were you motivated to recover?

Help Received: What kind of help have you received regarding your injuries? What help did you receive in the armed forces, and what help afterwards? Are you still receiving any form of help? Details.

KartForce: Explain in detail what role KartForce has played for you. In what ways has it helped? How has it not helped?

Family, friends and comrades

What role have families, friends and comrades played in your recovery? Details.

The next chapter

Up to this point we have focused on the past and the present. I would now like to ask you about the future. Could you tell me about the next chapter in your life?

What do you hope to achieve? In larger terms, what are your dreams for the future generally? Do you have a life project?

Challenges and reflections

Life Challenge: Please identify and describe what you now consider to be the greatest single challenge you have faced in your life. How did the challenge or problem develop? How did you address or deal with this challenge or problem? What is the significance of this challenge or problem in your own life story?

Health: Please identify and describe a scene or period in your life, including the present time, wherein you or a close family member confronted a major *health* problem, challenge, or crisis. Please describe in detail what the health problem is or was and how it developed. Experience you had with the health-care system. How you coped with the problem and what impact this health crisis, problem, or challenge has had on you and your overall life story.

Loss: The loss of important people in your life, perhaps through death or separation. Looking back over your entire life, please identify and describe the greatest interpersonal loss you have experienced. This could be a loss you experienced at any time in your life, going back to childhood and up to the present day. Please describe this loss and the process of the loss. How have you

coped with the loss? What effect has this loss had on you and your life story?

Failure, Regret: Please identify and describe the greatest failure or regret you have experienced - work, family, friendships, or any other area. Describe the failure or regret and the way in which the failure or regret came to be. How have you coped with this failure or regret? What effect has this failure or regret had on you and your life story?

Personal Ideology

Now, I would like to ask a few questions about your fundamental beliefs and values and about questions of meaning and morality in your life. Please give some thought to each of these questions.

Religious/Ethical Values: Please describe your religious beliefs and values, if indeed these are important to you. Whether you are religious or not, please describe your overall ethical or moral approach to life.

Political/Social Values: How do you approach political or social issues? Do you have a particular political point of view? Are there particular social issues or causes about which you feel strongly? Please explain.

Change, Development of Religious and Political Views: how have your religious, moral, and/or political views and values have developed over time. Have they changed in any important ways? Please explain.

Single Value: What is the most important value in human living? Please explain.

Other: What else can you tell me that would help me understand your most fundamental beliefs and values about life and the world? What else can you tell me that would help me understand your overall philosophy of life?

Life Theme

Looking back over your entire life story with all its chapters, scenes, and challenges, and extending back into the past and ahead into the future, do you discern a central theme, message, or idea that runs throughout the story? What is the major theme in your life story? Please explain.

Reflection

Thank you for this interview. Do you have any thoughts and feelings about the interview? Has it affected you? Do you have any other comments about the interview process?

KartForce – Racing Drivers Interview Protocol

Introduction

This is an interview about the story of your life, with a focus on the reasons you became a racing driver, your experiences, and subsequent events. I am interested not only in what happened but how events made you feel and how you coped with difficulties. I am interested in hearing your story, as you remember it. The story is selective; it does not include everything that has ever happened to you. Instead, I will ask you to focus on a few key things in your life. There are no right or wrong answers. Instead, your task is simply to tell me about some of the most important things that have happened in your life and how you imagine your life developing in the future.

You should not think of this interview as a “therapy session” of some kind. The interview is for research purposes only, and its main goal is simply to hear your story. Everything you say is voluntary, anonymous, and confidential.

Do you have any questions?

Outline of life in chapters

Imagine your life was a novel. Can you describe the main chapters of your life? What is contained in a chapter is up to you. It is your life story. Most people can describe their life in 2-7 chapters.

High and low points of life

Please describe very briefly the high and low points of your life. For each, please explain why (draw chart).

Details of these high and low points

Now I would like you to focus on these highs and lows and give me some details for each. I would like to know more about the context, what you thought (and how you think), what you felt (and how you feel), so that I can understand why these points are high or low.

Other key areas (if not already covered)

Racing driver: Focusing on issues not already discussed, can you tell me more about your experiences as a driver? Talk about motivation.

Impact of injury (if relevant): Tell me about the impact of your injury; not only the actual experience, but how you felt at the time, when you were recovering, and now. What impact does the injury have on your life now? How were you motivated to recover?

Help received: What kind of help have you received regarding your injuries? Are you still receiving any form of help? Details. What role have your family and friends played?

KartForce: If applicable, explain in detail why you are involved in KartForce. In what ways is it important? Where could it go from here?

The next chapter

Up to this point we have focused on the past and the present. I would now like to ask you about the future. Could you tell me about the next chapter in your life?

What do you hope to achieve? In larger terms, what are your dreams for the future generally? Do you have a life project?

Challenges and reflections

Life Challenge: Please identify and describe what you now consider to be the greatest single challenge you have faced in your life. How did the challenge or problem develop? How did you address or deal with this challenge or problem? What is the significance of this challenge or problem in your own life story?

Health: Please identify and describe a scene or period in your life, including the present time, wherein you or a close family member confronted a major *health* problem, challenge, or crisis. Please describe in detail what the health problem is or was and how it developed. Experience you had with the health-care system. How you coped with the problem and what impact this health crisis, problem, or challenge has had on you and your overall life story.

Loss: The loss of important people in your life, perhaps through death or separation. Looking back over your entire life, please identify and describe the greatest interpersonal loss you have experienced. This could be a loss you experienced at any time in your life, going back to childhood and up to the present day. Please describe this loss and the process of the loss. How have you coped with the loss? What effect has this loss had on you and your life story?

Failure, Regret: Please identify and describe the greatest failure or regret you have experienced - work, family, friendships, or any other area. Describe the failure or regret and the way in which the failure or regret came to be. How have you coped with this failure or regret? What effect has this failure or regret had on

you and your life story?

Personal Ideology

Now, I would like to ask a few questions about your fundamental beliefs and values and about questions of meaning and morality in your life. Please give some thought to each of these questions.

Religious/Ethical Values: Please describe your religious beliefs and values, if indeed these are important to you. Whether you are religious or not, please describe your overall ethical or moral approach to life.

Political/Social Values: How do you approach political or social issues? Do you have a particular political point of view? Are there particular social issues or causes about which you feel strongly? Please explain.

Change, Development of Religious and Political Views: how have your religious, moral, and/or political views and values developed over time. Have they changed in any important ways? Please explain.

Single Value: What is the most important value in human living? Please explain.

Other: What else can you tell me that would help me understand your most fundamental beliefs and values about life and the world? What else can you tell me that would help me understand your overall philosophy of life?

Life Theme

Looking back over your entire life story with all its chapters, scenes, and challenges, and extending back into the past and ahead into the future, do you discern a central theme, message, or idea that runs throughout the story? What is the major theme in your life story? Please explain.

Reflection

Thank you for this interview. Do you have any thoughts and feelings about the interview? Has it affected you? Do you have any other comments about the interview process?