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Offshore workers and health behaviour change: an exploration using the Theoretical Domains Framework

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ABSTRACT

Background: *Previous research has identified the importance of promoting behaviour change within the offshore workforce. This qualitative study sought to: identify self-care behaviours perceived to require behaviour change within the offshore workforce, and explore perceived potential behavioural determinants.*
Materials and methods: *This study included the perspectives of both offshore workers (OWs, n = 16) and healthcare practitioners (HCPs, n = 12) from the global workforce. Telephone interviews were conducted, recorded electronically and transcribed. Transcripts were analysed independently by two researchers using a Framework Approach and the Theoretical Domains Framework (TDF) to support coding.*
Results: *Healthy eating and alcohol intake were behaviours perceived by OWs and HCPs to require change within the offshore workforce. Knowledge (e.g. availability of nutritional knowledge), intentions (e.g. role of motivation), memory, attention and decision process (e.g. effect of boredom), environmental context and resources (e.g. influence of environmental stressors), social influences (e.g. influence of others), emotion (e.g. influence of emotional state) and behavioural regulation (e.g. influence of willpower). TDF domains were reported by both OWs and HCPs in relation to OWs' healthy eating and physical activity behaviours.*
Conclusions: *The determinants identified as mechanisms of behaviour may be targeted in future interventions which aim to promote engagement in self-care within the offshore workforce.*

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Key words: health, behaviour, health promotion, occupational health

INTRODUCTION

The Oil and Gas Industry is a key employer globally comprising a large number of personnel who are committed to travelling offshore and working in remote and hazardous environments [1]. Offshore workers (OWs) operating in the United Kingdom Continental Shelf are required to undergo a preliminary health assessment prior to commencing employment and every 2 years thereafter to sustain certification [2]. Installations and vessels tend to be located in remote geographical locations thereby impeding access to onshore medical services. Consequently, emergencies, minor ailments and injuries are treated on-board in a 'sick bay' by a qualified healthcare professional (HCP), often termed 'offshore medic' [3–5].

In the United Kingdom, offshore HCPs typically possess training in medical or nursing specialties and may be qualified nurses, paramedics or medical doctors [5]. In addition, they are required to undertake training approved by the Health and Safety Executive [4]. The certified offshore HCP may be supported by an onshore physician in terms of guiding treatment and response [3–5]. As outlined by Health and Safety Executive, whilst HCPs' role offshore is primarily focused on responding to acute medical scenarios, their general responsibilities also include *"...to give simple advice on the provision of a healthy living and working environment offshore"* [4, 6, 7].

Previous research has identified the importance of health promotion and promoting behaviour change within the offshore workforce [6, 8]. Our recent narrative review synthesising the literature on health and wellbeing within the offshore workforce identified a number of individual

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Table 1. Behaviours identified by participants as requiring behaviour change

Behaviour	Offshore workers		Healthcare professionals	
	Identified as requiring behaviour change	Discussed by any interviewee	Identified as requiring behaviour change	Discussed by any interviewee
Healthy eating	5	12	3	9
Physical activity	3	10	2	4
Smoking	2	4	1	5
Sleep management	2	3	0	0
Alcohol	2	3	3	7
Work-life balance	1	1	0	0
Stress management	1	1	0	0
Improving mental health	0	0	1	1

topics which represented the unique issues facing the workforce, including: musculoskeletal pain; shift work disorder, and increased body mass index. The review highlighted the need for further exploratory research within the offshore workforce particularly around aspects of self-care [Gibson Smith K et al., J Institute Remote Health Care 2015; 6(2): 10]. In response, we conducted a cross-sectional survey to determine engagement with self-care within the offshore workforce of which the outcomes highlighted key areas of health and wellbeing which may require addressing. Hence, the study concluded that OWs may benefit from the implementation of a self-care intervention to promote behaviour change [Gibson Smith K et al., J Institute Remote Health Care 2015; 6(2): 10]. The Medical Research Council (MRC) strongly advocates the use of behaviour change theory to support intervention design and delivery. The use of theory may also be a critical component in sustaining behaviour change over the longer term [9]. However, the selection of relevant behaviour change theories may not be straightforward due to the number that are available to researchers [10].

The Theoretical Domains Framework (TDF) was developed in an effort to overcome the aforementioned issues and to synthesise behaviour change theory into one framework [11]. The TDF outlines 14 individual domains (Table 1), which comprise a number of behavioural constructs that can be traced back to one of the 33 health psychology theories included in the synthesis [11, 12]. TDF domains may then be matched to relevant behaviour change techniques (BCTs) considered to be active ingredients of an intervention, and which may be used to promote engagement in the target behaviour [13, 14].

Whilst the perspective of OWs themselves is clearly pertinent when considering behaviour change within the population, a dual perspective that includes HCPs is imperative due to their critical role in managing the health of the offshore workforce. Further, it has previously been advised that HCPs should be consulted, and involved, in the development of health promotion programmes delivered offshore, particularly since their involvement could ensure that the requirements of the workforce are adequately evaluated [6]. Thus, this unique qualitative study sought the dual perspectives of OWs and HCPs respectively to explore the: (i) self-care behaviours which they perceived important to change, and (ii) associated behavioural determinants.

MATERIALS AND METHODS

RESEARCH DESIGN

Qualitative semi-structured one-to-one telephone interviews were conducted with OWs and HCPs with experience of working in the global oil and gas industry.

SAMPLING AND RECRUITMENT

The sample of OWs were recruited from a local operational training facility, which specialises in training offshore personnel. They were identified from OWs who completed a survey (n = 352) from an earlier stage of the research [Gibson Smith K et al., J Institute Remote Health Care 2015; 6(2): 10], the inclusion criteria for which was: prior experience of working in an offshore environment, and the requirement to travel and stay overnight accordingly. Those OWs (n = 134) who submitted their contact details to receive further information about the qualitative study were subsequently sent a consent form and information sheet either by email or postal mail, depending on their preference as a means of ensuring eligibility for participation.

The sample of HCPs were recruited by an independent academic body, who sent an email (n = 651) on behalf of the research team to members of their voluntary register of global HCPs working in remote locations. The recruitment email was sent to all members regardless of their specialty;

hence members who did not have expertise in offshore health may have also received the email. It was not possible to purposefully select members based on their expertise since this information was not recorded on the membership database; however, the inclusion criteria (prior experience of delivering healthcare to the offshore workforce or assessing the health of OWs) were outlined in the recruitment email. The email also contained a link to a recruitment questionnaire containing a participant information sheet and consent form.

All of those from both samples who returned a consent form (OWs [n = 37]; HCPs [n = 31]) were selected at random for the interview using SPSS 21. Potential participants were contacted via email thereafter to arrange a suitable interview date and time.

DATA GENERATION

The interviews were conducted by K.G.S. between March and November 2015. The TDF (14-domain) was used to develop semi-structured interview schedules and guide the nature of the questioning. The interview schedules endeavoured to identify a single health behaviour that OWs themselves and HCPs perceived as being important for OWs to change. Determinants of the single health behaviour identified were explored thereafter using questions which had been structured in accordance with the TDF. Whilst the remainder of the interview centred on the single behaviour identified, other behaviours were also discussed within the interview. Both interview schedules were reviewed by an expert panel comprising HCPs and academics with relevant experience in health, self-care and psychology, and subsequently piloted with an OW and HCP to test credibility and comprehensibility. As limited changes were made to the interview schedules after the pilot interviews, they were included in the final data set. All interviews were conducted via telephone and digitally recorded. Duration of the interviews ranged from 25 to 75 minutes. All interview content was transcribed using a pragmatic approach which permits researchers to omit key linguistic features where appropriate, including pauses and breaks, whilst still retaining depth with regard to verbatim data [15].

DATA ANALYSIS

Data pertaining to behavioural determinants (of both the single health behaviour and any additional behaviours discussed) were analysed by two coders (FQ and KGS) using the Framework Approach [16]. The TDF was used to guide the deductive analysis of determinants of behaviour whereby interview content was coded in accordance with TDF domains. Coders met to discuss the application of codes and resolve any incongruities. Codes, and corresponding TDF domains, were then charted to represent key themes and sub-themes. Themes may be duplicated across TDF domains since the coders assigned elements to multiple domains (e.g. where a theme was represented by goals and intentions). The saturation principle was applied in relation to the behavioural content of the interviews (e.g. the single behaviour which OWs felt important to change or which HCPs felt was important for OWs to change). In practice, saturation was perceived to have occurred when no new behaviours were discussed by interviewees and no new themes emerged from the data in relation to the behaviour perceive to require change [17].

ETHICAL APPROVAL

Ethical approval was granted by the Robert Gordon University School of Pharmacy and Life Sciences Ethical Review Committee. Petrofac Training Services approved access to the recruitment site for OWs. The Institute of Remote Healthcare granted permission to recruit from their member database. Written/electronic consent was obtained from participants.

RESULTS

Data saturation, in terms of the behaviour identified by interviewees as important to change, was achieved after interviewing 16 OWs. Interviewees were aged 28–57 years and predominantly male (n = 15). Eating healthily (n = 5) and increasing physical activity (n = 3) were the principal behaviours perceived by the interviewees as requiring behaviour change. Other behaviours identified were inclusive of: alcohol use; smoking; sleep management; stress management, and work-life balance (Table 1). For the purpose of this paper, however, the focus is on the two principal behaviours perceived to require change by both OWs and HCPs (i.e., eating healthily and increasing physical activity).

While the principal focus of the interviews centred on the specific behaviour that the interviewee wished to change, the majority of interviewees described a number of additional self-care behaviours (Table 1). Consequently, extracts referencing additional behaviours were also included in the analysis of behavioural determinants. For example, if a participant identified they wished to change their diet but also made reference to determinants of physical activity in their interview, the data relating to physical activity were also included in the analysis.

Key themes, representing behavioural determinants along with exemplar quotes, are presented in accordance with each of the TDF domains relating to individual healthy eating and physical activity behaviours (Table 2). It should be noted that TDF domains may only be relevant to one of the behaviours. For example, knowledge and reinforcement pertained only to healthy eating whereas goals pertained only to physical activity.

Table 2. Behaviours identified by participants as requiring behaviour change, corresponding Theoretical Domains Framework (TDF) domains and exemplar quotes

TDF domain	Theme	Quote
Knowledge	Nutritional knowledge and healthy eating	"...you know if you were cooking a bit of fish at home you would know exactly what you've done with it, you are never completely sure what they [chefs offshore] have added with it, so you could have quite a lot of sugar in a dish that you wouldn't expect" Interviewee 6 [OW]
Skills	NA	NA
Beliefs about capabilities	Confidence and physical activity	'...probably wouldn't be able to stick with it' Interviewee 9 [OW]
Optimism	NA	NA
Beliefs about consequences	Outcomes associated with healthy eating and physical activity	'...I feel better if I am eating healthy stuff, I know that I feel better' Interviewee 14 [OW]
Reinforcement	Positive reward and healthy eating	'...then you think oh I will just have a treat, a can of a coke, and then you end up drinking it, you know, three or four cans a day' Interviewee 2 [OW]
Intentions	Stability of intentions, healthy eating and physical activity	"...if they wanted to [eat healthily] and they had the impetus to do it they could do it, but it does come from themselves I think" Interviewee 18 [HCP]
Memory, attention and decision processes	Ownership, decision making and healthy eating	'...it is down to the individual to want to pay attention to it and address the diet" Interviewee 22 [HCP]
	Willpower and healthy eating	'...sometimes you are even just, you go for the first thing you see' Interviewee 2 [OW]
	Inattention, healthy eating and physical activity	'I am much less likely to eat healthily if I am tired' Interviewee 14 [OW]
	Eating unhealthily is an automatic process for offshore workers	"...then you're just there watching your video, you know, on your own, and anybody knows, themselves, sometimes you open a pack of biscuits, the next thing you look down and they're gone, you don't even know that you're eating them all. I think that that's a problem" Interviewee 29 [HCP]
Goals	Goal setting and physical activity	'...to try and like em set goals , then once you have achieved those, keep revaluating, pushing, looking farther ahead em' Interviewee 2 [OW]
Environmental context and resources	Offshore environmental stressors and healthy eating	"...certainly the cold, you know in the middle of winter you know maybe people want to get something high fat, high calorific, that is probably more the times when they would be eating all the kind of rubbish" Interviewee 20 [HCP]
	Food provisions offshore and healthy eating	'...you just get it all the time, it is always in your face, it is like you can't avoid it, it is temptation, it is there all the time 24/7, well 24/7 during the meal times' Interviewee 8 [OW]
	Environment, resources and physical activity	'...I guess perhaps some better facilities' Interviewee 9 [OW]
Social influences	Influence of others on healthy eating and physical activity	'...I think em I did have a colleague who was quite good at helping me, em like go to the gym and get healthier when I was sort of at my biggest em so I would say if you have got a group of people, perhaps around you that might support you then they will maybe go to the gym with you em and sort of encourage you' Interviewee 2 [OW]
Emotion	Emotional states and healthy eating	'...it is like, boredom too, a lot of boredom offshore that makes you eat, that you know, I am bored of this, I have been waiting two or three days for a permit, you are bored, you know, so it is very difficult to go no I am not going to have a rhubarb crumble today' Interviewee 8 [OW]
Behavioural regulation	Habits, healthy eating and physical activity	'...yeah it is too easy just to get in the habit of eating whatever, rather' Interviewee 15 [OW]
	Willpower and healthy eating	'...but then again it is up to, it is up to the individual to try and do their best not to get you know, sucked in to going back to like you know, fizzy drinks, you know regularly throughout the day and taking a bit more responsibility so I think that up to me as well' Interviewee 2 [OW]
	Action planning and healthy eating	'...um well I tend to take my own snacks with me, or try to, so that that will sort of help me to not go and eat cakes when they are on offer if I have got some nuts or a protein shake or something like that, that I can go and have instead, so if I get hungry I am not just grabbing the nearest thing' Interviewee 14 [OW]
	Self-monitoring and physical activity	'...and it [pedometer] sets you a target and em even if you get to 7,000 [steps] you think well if I walk another mile and a half I will get to 10,000' Interviewee 9 [OW]

OW — offshore worker; HCP — healthcare professional; NA — not applicable

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Nutritional knowledge and healthy eating

Interviewees highlighted the lack of information on the nutritional content of prepared food offshore. Relatedly, it was also suggested that having knowledge of what foods were healthy, and which were unhealthy, was associated with eating healthily.

BELIEFS ABOUT CAPABILITIES

Confidence and physical activity

Self-efficacy, with regard to ability to execute a behaviour, was believed to influence engagement in physical activity. For example, OWs may not be confident in their ability to engage in physical activity, and thus were less likely to enact positive behaviours.

BELIEFS ABOUT CONSEQUENCES

Outcomes associated with healthy eating and physical activity

The importance of being cognisant of the positive outcomes associated with eating healthily and engaging in physical activity on subsequent behaviour was stressed. Conversely, the influence of associated negative outcomes on behaviour was also highlighted. For example, if unhealthy eating was associated with poor sleep quality or incidence of disease, it may increase the likelihood of eating healthily. It was also noted that being aware of this relationship when making decisions on food choices left OWs feeling more encouraged to eat healthily.

REINFORCEMENT

Positive reward and healthy eating

The use of food as a reward or incentive was highlighted. It was reported that eating unhealthily was often used by interviewees to reward themselves whilst they were offshore.

INTENTIONS

Stability of intentions, healthy eating and physical activity

The influence of having stable, relatively unchangeable, intentions to eat healthily increased the likelihood of enacting the behaviour whilst having unstable intentions had a negative effect on subsequent endeavours. In addition, it was highlighted that delaying making dietary changes had a negative effect on behaviour and that behaviour change required a strong resolve to eat healthily.

The influence of environment on intentions and subsequent engagement in physical activity was highlighted. For example, having ability to exercise outdoors may increase motivation to exercise and subsequent likelihood of engaging in physical exercise. In addition, being motivated was perceived as facilitating those efforts whilst a lack of motivation impeded that engagement. The effect of planning on increasing intention, and the likelihood of engaging in physical activity, was stressed. Scheduling time to attend an exercise class lead to a greater probability that the behaviour was executed.

GOALS

Goal setting and physical activity

Goal and target setting increased engagement in physical activity with interviewees suggesting that setting goals and targets to increase their physical activity or improve on specific areas (e.g. to achieve 10,000 steps a day) facilitated performance of the behaviour.

MEMORY, ATTENTION AND DECISION PROCESSES

Ownership, decision making and healthy eating

The influence of making concerted efforts to eat healthily and engage in physical activity on subsequent positive behaviours, whilst also assuming personal ownership of the decision, was highlighted.

Willpower and healthy eating

The positive effect of willpower on eating healthily was noted whereby the greater the level of willpower the greater the extent of engagement with positive behaviours.

Inattention, healthy eating and physical activity

It was highlighted that both boredom and tiredness reduced individual's ability to make decisions and often resulted in an increased likelihood of eating unhealthily. Similarly, tiredness had a negative impact on willingness to engage in physical activity.

Eating unhealthily is an automatic process for offshore workers

One interviewee reported that unhealthy eating behaviours were automatic and often beyond conscious awareness.

ENVIRONMENTAL CONTEXT AND RESOURCES

Offshore environmental stressors and healthy eating

Environmental stressors offshore, such as extreme temperatures, increased the likelihood of eating unhealthily amongst interviewees.

Food provisions offshore and healthy eating

The availability of healthy/unhealthy food options offshore was described as a key influence on healthy eating behaviour. For example, the volume of unhealthy food available, poor quality of food, inability to cater for specialised diets and lack of nutritional information made it difficult

to eat healthily. The restrictive eating times offshore was also purported to negatively affect healthy eating. It was suggested that increasing the volume and availability of healthy foods offshore may positively impact behaviour.

Environment, resources and physical activity

Both home, and offshore environments, were perceived to negatively impact on engagement in physical activity. For example, weather conditions, season and exercise facilities offshore may all impede on willingness to engage. Interviewees suggested that increasing the number of opportunities for OWs to exercise and improving gym facilities offshore may better promote engagement. It was further recommended that space on offshore installations was better utilised and that investment in gym facilities was increased.

SOCIAL INFLUENCES

Influence of others on healthy eating and physical activity

The social nature of eating in both onshore, and offshore, environments was perceived to have a negative influence on behaviour. For example, it was reported that there may be pressure from others to eat unhealthily or deviate from diets. Similarly, the negative influence of others on engagement with physical activity was also highlighted. One OW interviewee noted that they found some gym members offshore intimidating and this had a negative effect on their willingness to exercise. The positive influence of others on exercise was also highlighted. Interviewees stressed the role of others in motivating them to exercise and cited partners, friends and colleagues as being instrumental.

EMOTION

Emotional states and healthy eating

Enjoyment, as a consequence of engagement in physical activity, was highlighted as a factor which positively influenced OWs. Negative emotional states were believed to adversely affect healthy eating and physical activity behaviours. For example, boredom experienced whilst offshore often led to unhealthy decisions and overeating.

BEHAVIOURAL REGULATION

Habits, healthy eating and physical activity

The importance of breaking habits was highlighted in relation to both healthy eating and physical activity. The relative ease of adopting poor eating and exercise habits was also emphasised. For example, one interviewee reported that it was easy to acquire poor eating habits and to not be mindful of what food was being consumed.

Willpower and healthy eating

The effect that lacking or having willpower had on eating healthily was stressed. Interviewees noted that they often lacked the willpower to eat healthily, which resulted in unhealthy food choices.

Action planning and healthy eating

Delaying making changes impacted negatively on eating behaviour whilst making contingencies, and action plans, promoted healthy eating. For some interviewees being prepared meant ensuring that they had the appropriate ingredients to eat healthily stocked at home and taking their own healthy food supplies with them when they went offshore. Establishing a routine was also important in order to withstand the transient nature of the offshore lifestyle.

Self-monitoring and physical activity

Self-monitoring strategies, which enable tracking of physical activity levels, were perceived to have a positive effect on engagement. For example, it was suggested that a pedometer providing feedback may motivate individuals to exercise so as to achieve their daily targets.

DISCUSSION

This qualitative study aimed to explore, in-depth, the perceived causes of self-care behaviours of OWs from a dual perspective. Healthy eating and increasing engagement in physical activity were identified by OWs and HCPs as key areas warranting concern. A number of potential determinants of OWs' healthy eating and physical activity behaviours were identified in relation to TDF domains. Both OWs and HCPs reported that OWs' healthy eating and physical activity behaviours were associated with: knowledge; intentions; memory; attention and decision process; environmental context and resources; social influences; and emotion and behavioural regulation domains.

INTERPRETATION

The findings from this study may be used to inform the development of an intervention and serve as a guide to potential behavioural determinants of OWs' healthy eating and physical activity behaviours. The theoretical framework adopted has enhanced understanding of potential behavioural determinants and ensured that the research was developed in accordance with MRC guidelines [9]. As such, the TDF behavioural determinants identified may be used to ascertain relevant intervention targets, in relation to the factors which were perceived to both positively and negatively influence engagement with healthy eating and physical activity behaviours, and matched to relevant BCTs using published taxonomies [13, 18].

For example, the taxonomies mapped provision of information (BCT) to the TDF knowledge domain [13, 18]. Similarly, the environmental context and resources domain may be linked to the behaviour change technique of cues/

prompts. Cues/prompts may include nutritional information since they serve to prompt healthy eating. The availability of nutritional information about food provided offshore was often reported lacking by OWs. Hence, they did not always have knowledge of what was in the food they were eating. Evidence from a systematic review on the impact of nutritional labelling of foods has demonstrated that presenting information on the nutritional composition of foods may have a positive impact in enabling individuals to make informed choices [19].

Stability of intentions was perceived to be a potential factor influencing OWs' healthy eating and physical activity behaviour. The BCT taxonomies suggest that establishing a behavioural contract, which would require individuals to express either their behavioural intentions in a written statement, or commitment, may support behaviour change [13, 18]. Whilst there is some evidence that implementing a contract may support behaviour change across physical activity [20], a review article discussing commitment contracts in relation to health behaviour change highlights that implementation should be carefully considered, particularly in terms of the acceptability of contracts to target populations e.g. what effect they may have on uptake [21].

Social influences was perceived to influence OWs' physical activity and healthy eating behaviours. For example, colleagues may have been supportive of exercise, particularly in terms of serving as a motivator, thereby increasing OWs' engagement with physical activity or, as reported, may feel pressure from others to not eat healthily. The social influences TDF domain may be linked to the social support BCT [13, 18], and existing evidence appears to support its use. For example, social support was a strong predictor of both physical activity and healthy eating behaviours in users of an eHealth intervention [22].

Emotion was regarded as a potential behavioural determinant of physical activity and healthy eating in that OWs' engagement in the behaviour may be affected by emotional states either as a precursor to the behaviour or as an outcome of engagement. The taxonomies highlight that the TDF emotion domain may be linked to the emotional consequences BCT [13, 18]. The BCT stresses how providing information on the emotional consequences of performing the behaviour may increase engagement. The evidence from a longitudinal study on engagement in physical activity supports the role of emotional consequences in facilitating the behaviour [23].

In terms of memory, attention and decision processes and behavioural regulation, the positive effect of willpower was highlighted in relation to physical activity. Self-monitoring, according to BCT taxonomies, may be a key technique to integrate into an intervention where the aforementioned TDF domains are identified as potential determinants [13, 18]. A systematic review which aimed to evaluate the most effective BCTs used in physical activity and healthy eating interventions highlighted that studies which were inclusive of self-monitoring were more effective in achieving behaviour change [24].

Although the findings provide evidence in which to move forward with intervention development, further work is recommended to build on these novel qualitative findings. For example, in order to ensure the acceptability of an intervention to OWs it may be beneficial to conduct additional qualitative work. In accordance with MRC guidance, future work should also endeavour to test the feasibility of the intervention and conduct a pilot prior to evaluating the intervention to determine its effectiveness and adequate implementation, including appropriate monitoring and follow-up [9].

STRENGTHS AND WEAKNESSES

The study used a dual perspective and theoretical framework to provide an in-depth exploration of OWs' healthy eating and physical activity behaviours from their own perspective and was considered a strength of the research. Whilst recent research has used an Intervention Mapping approach within a sample of OWs [25], to our knowledge this is the first study to identify theoretical determinants of these behaviours within the workforce. Although the interviews were semi-structured and guided by the interview schedule, they were flexible in the sense that interviewees identified the behaviour which they perceived important to change. This ensured that the direction of interviews was influenced by the interviewee and, hence, the behavioural content of the interviews was truly representative of those areas that interviewees themselves perceived important to change.

Use of the TDF to guide data generation and analysis is perceived to be a key strength of the search. The TDF, due to the synthesis of a number of behaviour change theories, ensures that a broad range of behavioural constructs are considered and thereby optimises capture of potential behavioural determinants in research [11]. Whilst the theoretical approach is considered advantageous, it is not without critique and may be considered a weakness of the research. For example, researchers using the TDF have noted 'perceived overlapping' of domains [26]; an issue that was also experienced in this study and highlighted in the methods.

Research trustworthiness was integrated via a plethora of strategies to enhance the strength of the research. Measures were undertaken to promote credibility, transferability, dependability and confirmability. These strategies were: utilising methods with a favourable evidence-base

and deemed fit for purpose; the past interview experience of the interviewer; provision of detailed and accurate reporting and recording of research procedures, and being mindful of the effect that personal beliefs and values may have on interpretation of the data.

CONCLUSIONS

The evidence from this study suggests that OWs' healthy eating and physical activity behaviours may be influenced by a number of factors. The findings further suggest that OWs' behaviour, as perceived by offshore workers and HCPs, may be improved across healthy eating and physical activity behaviours. The theoretical domains identified in this study as potential determinants of behaviour may be embedded within the evidence-base in which to inform the development of future interventions.

DECLARATIONS

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was granted by the Robert Gordon University School of Pharmacy and Life Sciences Ethical Review Committee. Petrofac Training Services approved access to the recruitment site for offshore workers. The Institute of Remote Healthcare granted permission to recruit from their member database. Written/electronic consent was obtained from participants.

CONSENT TO PUBLISH

Not applicable.

AVAILABILITY OF DATA AND MATERIALS

The datasets generated and/or analysed during the current study are not publicly available due to reasons pertaining to confidentiality.

COMPETING INTERESTS

The authors declare that they have no competing interests.

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