An exploration into the development of motivation to exercise in a group of male UK regular gym users.

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ABSTRACT

A key concern when developing health promotion programmes is how to facilitate adherence to regular exercise. This study explored the values, beliefs and experiences, both past and present that motivated adult participation in regular recreational exercise. Twenty eight male gym users who met the American College of Sports Medicine (ACSM) recommendations on Quantity and Quality of Exercise completed the Intrinsic Motivation Inventory (IMI) and the Perceived Competence Scale. Five participants who scored highly on both scales took part in semi-structured interviews to explore the factors that led to their regular exercise behaviour. Interview data were subjected to thematic analysis. The development of motivation to exercise regularly was associated with social environmental factors during childhood that provided encouragement and a variety of opportunities to engage in exercise. This progressed to a stage when the focus was on exercise competence achieved by encouragement, guidance and positive affirmation from teachers, coaches and peers. The final stage shows how the participants' adherence to exercise has become a vital element in the creation of their sense of their identities and their physical and psychological health. The findings of this study suggest that motivation to exercise regularly is developed along a continuum from childhood to adulthood and although the meaning derived from these experiences was different for each participant, a common thread emerged of the importance of choice, support and social–environmental opportunities in creating each participant's exercise role identity.

Keywords: physical activity, regular gym-users, adherence, developmental model

Introduction

A key concern when developing health education programmes is how to facilitate adherence to regular exercise (Jones, Harris, Waller, & Coggins, 2005). Research has shown that adherence is low among individuals who commence exercise with attrition rates greater than 50% within the first six months (Cox, 2007; Perri et al., 2002). In addition, it has been reported that levels of physical activity tend to decline with age (Sallis, 2000). A key element that contributes to adherence is motivation and Deci and Ryan's (2000) Self-determination theory aims to provide a theoretical framework to create further insights into this concept. Specifically it proposes that a person's behavioural regulation towards an activity may be described as one of three categories: amotivated, extrinsically motivated or intrinsically motivated. These overall classifications of motivation differ in the extent to which they are self-determined (autonomous) because they represent different degrees of internalisation of external values and goals. Although most exercise participation might be activated by both intrinsic and extrinsic motivation, research suggests that intrinsic motivation is more important for adherence (Frederick, Ryan, 1995; Wankel, 1993).

A sub-theory of the self-determined approach is the Basic Needs Theory and Deci and Ryan (2000) suggest that the origins of self-determined motivation stem from an individual's innate propensity to satisfy his/her need for autonomy, competence and relatedness. However the interplay between them and how this possibly changes over time and in different contexts needs further exploration with regards to different populations. For example, a number of studies have reported that perceived competence in competitive athletes is an important factor that positively correlates with intrinsic motivation (Conroy, Douglas, Coatsworth, & Fifer 2005; Ntoumanis, 2001). On the other hand, in recreational level exercisers, the effect of perceived competence on

intrinsic motivation seems to be moderated by autonomy (Markland 1999). It therefore appears that having a choice about taking part in recreational activity and hence being more autonomous may result in greater enjoyment, a factor linked to intrinsic motivation, regardless of level of perceived competence in this population. However, as exercise tasks become more complex and require greater effort to master, recreational exercisers conjecturally require motivation to persevere in order to become competent in performing the tasks (Losier & Vallerand, 2001). In summary it does raise a question concerning a possible difference between recreational exercisers and competitive athletes with regards to intrinsic motivation suggesting a variation in this theory when it comes to recreational exercisers.

Perceptions of competence are often linked with goal achievement in an exercise context but individuals may differ in the goals they wish to achieve and this may go some way to explaining Markland's (1999) findings. Duda's (1989) Achievement Goal Theory elucidates the difference between task-orientated individuals whose primary aim is self-improvement and ego-orientated individuals who competitively focus on establishing superiority over others. It is suggested that being task-orientated will facilitate intrinsic motivation through a positive effect on locus of control whereas having an ego-orientation is more likely to be perceived as controlling and result in decreased intrinsic motivation (Duda, Chi, Newton,Walling, & Catley, 1995). Hagger and Chatzisarantis (2008) state that future research in a recreational non-competitive exercise domain should be directed towards establishing links between achieving goals and the degree of internalisation of exercise behaviours.

The social-environmental factors within an exercise setting such as the levels of encouragement and perceived support from family, peers, teachers, coaches and 'significant others' have all been shown to influence motivation (Cox & Ullrich-French, 2010; Keegan,

Harwood, Spray, & Lavallee, 2009). These studies have mainly focussed on children's motivation in physical education and youth sport contexts and found that levels of encouragement and perceived support from "significant others" facilitates enjoyment and adherence to exercise because it allows a young person to demonstrate mastery or self-improvement (Standage, Duda, & Ntoumanis, 2003; Cox & Ullrich-French, 2010; Vlachopoulos, Kaperoni, & Moustaka, 2011). The impact of this on adult recreational exercisers has yet to be explored in detail and conjecturally early life socialisation and social environmental factors may contribute to an exercise role identity in an adult. Vlachopoulos, Kaperoni, and Moustaka (2011) investigated the association between the SDT and exercise role identity in 733 gym users across the lifespan and found that it was strongly associated with regulations that reflected a greater degree of internalisation of exercise behaviour.

Rodgers, Hall, Duncan, and Pearson (2010) gathered data from four longitudinal studies lasting six months and found that regular exercisers had stronger intrinsic motivation compared with novice exercisers. Although the study provided interesting information concerning the process of self-determined motivation among novice exercisers it had a number of limitations such as the timing of the questionnaires and the different modes of exercise which may have resulted in different perceptions of psychological needs among the participants (Deci & Ryan, 2000). Nevertheless, it did provide evidence that regular exercisers were intrinsically motivated. Many studies have examined how specific factors affect an individual's intrinsic motivation by using quantitative methods to test established psychological theories. However, an exercise setting is a complex environment and this paradigm may not always capture this complexity (Hassandra, Goudas, & Chroni, 2003). Qualitative research may thus help to shed some light on the kinds of values, beliefs and experiences that motivate or undermine adult participation in

regular exercise. Recently, a few qualitative studies examining the specific factors affecting an individual's motivation in a sport setting have been conducted (Zomerand, 2010; Keegan, Harwood, Spray, & Lavallee, 2009; Benogoechea & Strean, 2007). Although these studies provided valuable information on the motivation of young athletes they tended to focus on the role coaches, peers and parents play in influencing their motivation. A number of other studies explored the meaning of exercise to college students (Woodruff & Schallert, 2008; Omar-Fauzee et al., 2009; Kimball, 2007).

In summary it is irrefutable that exercise has many important health and well-being outcomes and adherence to some recreational physical activity is generally perceived as advisable. Adherence has been linked with motivation but the development of a desire to be task-orientated as opposed to ego-orientated and to exercise for enjoyment, personal satisfaction and interest without any obvious external rewards still requires further exploration in different populations. Inextricably linked to intrinsic motivation is autonomy, competence and relatedness but the degree of their contribution and their interrelatedness is still questionable in recreational exercisers.

There is thus a potential gap in our knowledge regarding the concepts associated with the development of adherence to exercise in regular gym-users and although the SDT theory is successful for predicting adherence it does not seem to consider the factors that contribute to people starting to exercise in the first place. This study embraced a two stage approach by using a combination of questionnaires and interviews to gain new insights into what motivates a population of adult males to exercise. Questionnaires by their very nature are time and situation specific and by utilising interviews it was anticipated that a more in-depth exploration would reveal how the participants' adherence to exercise was developed, that is, the length of time

they have exercised, how they began, the influence of significant people, their reasons for maintaining exercise and their exercise goals. Guerin, Bales, Sweet, and Fortier (2012) carried out a meta-analysis exploring the effect of gender on behavioural regulations towards exercise and the main finding was that males and females did not differ between their behaviour regulations.

The aim of this study is therefore to use a purposive sample of adult males who regularly attend a gym in their leisure time to elucidate information on the development of their motivation to exercise and to illuminate the reasons why they begin to exercise in the first place. The sampling strategy used a two stage approach by first of all using questionnaires to identity those participants with the highest score on the Intrinsic Motivation Inventory and the Perceived Competence Scale who were then invited to take part in interviews to explore their past and present experiences of taking part in exercise. The secondary aim was to test the relationship between their intrinsic motivation and perceived competence and to investigate any invariance revealed in this relationship.

Methods

Designs

A sequential explanatory two stage approach was implemented. The first stage used the Intrinsic Motivation Inventory (IMI; Ryan, 1982: Appendix A) to determine participants' level of participation and the Perceived Competence Scale (PCS; Nicolls, 1989: Appendix B) to determine participants' perceived competence for exercise.

The Intrinsic Motivation Inventory was scored by the participants from 1 to 7 (I meaning "not at all true", 4 "somewhat true" and 7 "very true"). The Perceived Competence Scale was scored by the participants in the same way. The higher the score in the six subscales of the Intrinsic

Motivation Inventory the higher the level of intrinsic motivation and similarly the higher the scores in the Perceived Competence Scale the higher the level of perceived competence.

The second stage embraced a qualitative paradigm to explore motivation in greater depth by interviewing those participants who had scored highly on the questionnaires. The aim of the interview was to explore why and how they began to exercise in the first place and the factors that contribute in their adherence to an exercise routine.

A two-stage approach combines the philosophies of both quantitative and qualitative approaches, that is, on the one hand an objective quantitative approach that provides numerical data and delivers statistical significance and a qualitative approach that encapsulates beliefs, values and feelings, that underpinned the participants' exercise behaviour. The philosophy of this two-stage approach is that both quantitative and qualitative research is important and useful and its goal is to draw from the strengths and minimise the weaknesses of both in a single research study.

Participants

A purposive sample of 28 male regular gym users (aged > 21 years) attending a leisure centre in London and who met the ACSM's recommendations on Quantity and Quality of Exercise (Haskell et al., 2007) through self-report were selected and invited to complete the Intrinsic Motivation Inventory (IMI; Ryan, 1982) and the Perceived Competence Scale (PCS; Nicholls, 1989). Following analysis of the questionnaires the participants who obtained the highest scores above the median score in both questionnaires were invited to attend follow-up interviews. Experts over the years have argued that the median should be used as the measure of central tendency in ordinal scales in which responses are rated (Jamieson, 2004). Five participants consented (see Table 1).

Measures

The Intrinsic Motivation Inventory (IMI) (Appendix A) assesses participants' interest/enjoyment, effort, felt pressure and tension, perceived choice and value/usefulness while performing a given activity, on five subscale scores. The value/usefulness subscale is included in the questionnaire to assess whether people perceive exercise to be of value and beneficial to the extent that it has become part of their lives. It has been found to be both valid (McAuley, Duncan, & Tammen, 1989) and reliable (McAuley, Wraith, & Duncan, 1991). The Perceived Competence Scale (PCS) developed by Nicholls (1989) is a short, 4-item questionnaire, to assess constructs from the SDT such as assessing participants' feelings of competence about, engaging in and adhering to regular physical activity (Appendix B). This scale has demonstrated validity and reliability in an exercise setting (Seifriz, Duda, & Chi,1992).

The audio-taped interviews were carried out by the researchers and lasted approximately 30-40 minutes (Appendix C). They consisted of open-ended and probing questions designed to explore the participant's account of their experiences both past and present that motivated their adult participation in regular recreational exercise in order to understand more fully the integral role played by SDT-based constructs (Hassandra, Goudas, & Chroni, 2003). Ethical approval from the Faculty Research Ethics Committee (FREC) was obtained prior to commencing this study.

Data Analysis

A spearman's correlation was conducted to investigate the relationship between perceived competence and intrinsic motivation. Significance was set at 0.05 alpha level.

A thematic analysis (Braun & Clarke, 2006) of the interview data was carried out which began with a process of familiarisation of the data and initial ideas and potential coding schemes noted.

Preliminary codes were then generated and organised into meaningful groups. The relationships between the codes that contributed to each potential theme were noted and explored and an initial theme map was produced. On-going analysis was used to refine the specifics of each theme and clear definitions and names for each theme were generated. Finally the essence of each theme and its underlying narrative was identified to generate further information about current intrinsic motivation in the participants. These themes contained a temporal dimension which made them useful for displaying a lifespan perspective and a sequencing of events in the participants' exercise participation. This resulted in a final theme map (see Figure 1). All drafts of the analytical process were shown to colleagues familiar with qualitative analysis to check the validity of the codes and themes.

Results

A total of 28 male regular gym users who all exercised at the same gym responded to the invitation to participate and complete the two questionnaires. The ages of the participants ranged from 22 to 63 (mean = 26.9 ± 8.9) years old. The sample consisted of 23 (82%) white Caucasian British males, three (11%) white European males and two (7%) south East Asian males.

An inspection of the scores on the IMI questionnaire showed that the regular gym exercisers enjoy this activity and they find it fun and interesting and also beneficial and of value to them. They also possessed high levels of trust in their instructors and the gym staff. Taken together these scores indicate that the participants had high levels of intrinsic motivation to exercise. They also had high scores on confidence and capability to perform activities as demonstrated by the Perceived Competence Scale and believed they were capable of adhering and mastering new exercises on their own. However Spearman correlations revealed that there was no statistically significant association between intrinsic motivation and perceived competence rho (28) = 0.309,

$p > 0.05$.

As previously stated, following analysis of the questionnaires the participants who obtained the highest scores above the median score in both questionnaires were invited to take part in a follow-up interview and five agreed to do this (see Table 1).

Qualitative results

A developmental model (see Figure 1) emerged from the data and this was represented by three main themes: A lifespan trajectory incorporating childhood experiences and adolescence, social-environmental influences and lastly, adherence to exercise in adulthood. These had various sub-themes and these will be discussed.

Theme 1: Lifespan trajectory – Childhood experiences and adolescence

Endorsed playfulness and opportunities to exercise in childhood

All the interviewees stated that they had a diverse and playful introduction to sport which was both enjoyable and intrinsically motivating.

Gary described how he played informally with peers in his youth:

Ya, we were all pretty active we were all playing a lot of sport...football…it was just a case of anyone could play...like we would have a group of friends and we would go down the parks… (Gary L142P3).

Every one of the interviewees cited environmental factors such as proximity of parks, play areas, gyms and sporting clubs as playing an important role in their physical activity behaviour when they were growing up:

There were always options to do various things swimming, running, football and cycling you know…(Ciaran L234P5).

Having easy access to facilities (parks, school, clubs) plus having a choice of activities over a

life-time resulted in higher levels competence, relatedness and autonomy

Family and peers

All the interviewees reported that parents, siblings and peers played a key role in their interaction with environmental resources:

We would have a group of friends and go down the parks (Dave L142P4).

I would always play football with my Dad and basketball, but more...they (my parents) would always encourage me to take up sports (Dave L47P2).

It was just the banter having a laugh with friends really. It was being in an environment where you were with friends really (CiaranL90 P3).

Perceived positive parental influence and having fun with peers seemed to be associated with greater attraction and involvement in sport and physical activity.

When they moved into secondary school there was a transition from this playfulness to gaining mastery in various activities.

Adolescence and gaining exercise competence

As the interviewees grew from childhood to adolescence they progressed from this supported stage to a more purposeful stage when they gained mastery in fewer physical activities. Mike increased his commitment to sport and focused on the improvement of his skills. Training and competition became more important to him and his perceived competence was in reference to self-improvement:

I was heavily into sports and I was (then) playing rugby, basketball and martial arts, I was just training to improve performance (Mike L9P1).

In this phase the role of teachers and coaches became more salient as the influence of the interviewees' parents decreased in importance and this is consistent with findings in the literature

(Fraser-Thomas, Côté, & Deakin, 2005). School was important in facilitating the sporting development of a number of the participants. The importance of the role of the school coaches in providing competence support was clearly demonstrated when Gary stated:

Coaches and teachers…they were very encouraging definitely…ya, I was very good at running as a youngster and I was encouraged to run (Gary L46P2).

These findings concur with Gorozidis and Papaionnou (2011) who found that the effect of task-orientated PE teachers was to achieve an educational goal which is to develop each individual to their full potential. Higher levels of intrinsic motivation have been reported in an environment where an athlete or child perceives the coach or PE teacher to facilitate his or her autonomy (Conroy & Coatsworth, 2007; Pelletier, Fortier, Vallerand, & Briere, 2001).

Theme 2: The social-environmental influences

All participants cited environmental factors such as proximity of facilities, parks, spaces gym and sporting clubs as playing an important role in their physical activity when they were growing up:

Where I lived there was a communal gym we didn't have to pay as it was paid by the service charge (Gary L180P4).

All participants reported that parents, siblings and peers played a key role in their interaction with environmental resources:

We would have a group of friends and go down the parks (Dave L142P4).

It has been found that when a neighbourhood has quality, diversity and quantity of resources and when access for children is brokered by parents it resulted in a greater ability of the child to self-regulate later in life (Zimmerman, Phelps, & Lerner, 2007). Self-regulation was clearly demonstrated when Mike was quoted as saying:

I just enrolled myself in the gym as soon as I turned 16. It was 5 minutes away from my house. So it was relatively convenient (Mike L18P1).

Having easy access to facilities (parks, school, club) and support (teachers, coaches, family) over a life-time seems to have resulted in higher levels of self-efficacy in the interviewees.

Social support

Results revealed that "significant others" played four key roles in motivating participants to exercise regularly and this is similar to the concept of social support as defined by Wallston, Alagna, B. DeVellis, and R. DeVellis (1983). These included providing tangible support, informational support, task related-support and emotional support,

Ciaran describes an example of tangible support:

I did the London to Brighton for charity and they (family) always say well done you know and I have managed to get some sponsorship out of them (Ciaran L113P3).

Frank explains how his coach provided him with informational support when he was injured,

He used to say you have to keep moving and stretching and stuff like that (Frank L269P7).

The interviewees believed that being given a choice of activity was empowering in line with the concept of task-related support. According to Self-determination Theory (Ryan & Deci, 2000) their psychological need for autonomy was fulfilled and this resulted in higher levels of self-motivation to exercise. Gary describes how his father provided him with choice:

He does encourage me ya, but he recognises it is really my own choice (L55P2).

"Emotional support" was perceived to be provided by others when reassurance was needed following setbacks. Frank explains how his coach consoled and reassured him following a loss:

He (the coach) would ask me how I felt and or if I felt a little bit too tired or things like that (L315P8).

When taken together these findings seem to show a link between the social support of significant others and the development of the interviewees' regular exercise behaviour.

Theme 3: Adherence to exercise in adulthood.

Part of being a regular exerciser is that exercise becomes part of one's daily routine, in other words a habit. Habits are described as "actions that are triggered automatically in response to contextual cues that have been associated with their performance" (Gardner, Lally, &Wardle, 2012). The behaviour becomes automatic and its responsibility is delegated to the contextual cue trigger, whereby the presence of the cue initiates the behaviour rather than there being any intentionally performed action (Orbell & Verplanken, 2010).

Dave observed:

...it is a part of the routine. A habit...I would miss it if it was not here (L348P9).

It appears that the automaticity is broken when for whatever reason the behaviour does not happen and then its advantages are noted. It does appear that for Gary and the others their continued participation gives them more benefits than stopping and this is the key to what motivates them to continue to exercise.

Gary commented:

I feel like exercising in the gym is very beneficial for when I play basketball (L203P6).

Mike noted:

You need to be at certain level of performance and strength otherwise it would not be feasible to play for the particular teams I was playing for (L14P1)

You row 3 or 4 times per week then you are in the gym every other day. (Gary L163P4).

Enjoyment and competence motives have also been found to be positively associated with hours per week of participation (Frederick & Ryan, 1993). Gary declared:

I was in the university team…and it was a really good social scene as well (Gary L157P4).

An exercise identity

The role of exercise appeared central to the interviewees' identity. This relates to a person's self-image, self-esteem and uniqueness. Mike asserts:

It is a massive part of (who I am) my identity now (Mike L192P5).

They also valued the role exercise played in their personal development and this was demonstrated in the following quote from Frank:

I think sport disciplined me a hell of a lot…and I think it kept me off the street a lot...if it wasn't for sport...I would end up like some of the mates I used to know at school and not be in a good place (L444P12).

Interestingly although each participant was highly committed to their physically active lifestyle they were not one-dimensional. It may be that the confidence their involvement in physical activity gave them is transferable to other aspects of their lives. Gary stated:

It is the whole lifestyle and the gym is just one aspect of that (L296P8).

Ciaran remarked:

It's expanding into other social groups as well (L58P2).

Health

The participants appeared to place less value on rewards and body image relative to meaningful relationships, personal development and health.

Ciaran maintained:

It is mainly in the back of my mind to keep fit and healthy and being able to do something with other people should the time arise...(L62P2).

Gary also stated:

The social scene as well…it is the whole fun factor…health and also feeling better about yourself (L160P4).

These findings show the extent to which exercise has been incorporated into the interviewees' identity and concurs with Vlachopoulos, Kaperoni, and Moustaka (2011) who examined the association between the SDT and exercise role identity and found that intrinsic motivation emerged as a substantial correlate of the latter.

Task-orientation versus ego-orientation

Task-orientation is linked to one's belief that achievement requires personal high effort to achieve a sense of well-being, interest and satisfaction and an ego-orientation is associated with a more controlling type of behaviour regulation (Wang & Biddle, 2001). All the interviewees described the importance of task orientated goals:

There was a YMCA fitness challenge with 10 exercises one after another...I liked getting involved in that...it was pretty intense. I enjoy challenges (for myself) (Gary L225P6).

Mike explains:

I just guess it is about measurable performance, so being able to lift something heavier so it gives me some form of achievement (Mike L105P2).

The interviewees were not unduly critical of their own performances when they were striving for high standards as these entailed higher levels of perceived competence:

Oh it doesn't bother me (not achieving). For me, at the end of the day, the goal is more to vary the exercise to keep me motivated (Ciaran L112 P2).

Overall the interviewees reported experiencing a sense of their own ability and to seek challenging exercise tasks for self-improvement as opposed to defeating others.

Discussion

The first stage of this study investigated the intrinsic motivation and perceived competence of a group of male regular gym users who met the ACSM's recommendations on Quantity and Quality of Exercise (Haskell et al., 2007) through self-report. It was found that they all had high levels of intrinsic motivation to exercise and there was no statistically significant association between high intrinsic motivation and high perceived competence and vice versa. Therefore underlying factors such as feedback, perceived threat and perceived choice within the exercise environment, could be moderating the association between perceived competence and intrinsic motivation (Vallerand & Reid, 1984; Ntoumanis, 2001; Markland, 1999; Losier &Vallerand, 2001). Taken together this would suggest that perceptions of competence are not associated with motivation in this group and that arguably social-environmental influences could be instrumental in increasing the participants' motivation and feelings of autonomy within an exercise setting. The analysis of the second stage of the study gave some insights into understanding the motivation of adult males to exercise regularly. A pattern emerged depicting the dynamic nature of motivation to exercise over the interviewees' life-span that supports the emergence of a developmental model. Each participant described how their psychological needs for autonomy, competence and relatedness in relation to exercise behaviour were fulfilled throughout their lives. These findings shared commonalities with other exploratory studies that found that motivation and adherence to exercise was fostered by coaches, parents and peers (McCarthy, Jones, & Clark-Carter, 2008; Gould & Carson, 2008; Allen, 2003). The development of adherence was associated with factors that provided support and opportunity to engage in exercise during childhood and adolescence. This evolved to a period when exercise was embedded into the interviewees' lives and became part of their routine of daily life**.** The final phase is maintaining adherence to exercise, this is a fluid state but within the concepts of

psychological well-being, interest and satisfaction it is apparent that the benefits outweigh the costs.

The influences that led to the participants becoming motivated to become regular exercisers are first and foremost a childhood environment that endorses encouragement and support from their families to engage in many different sporting activities in the spirit of playfulness. This appears to have given the interviewees an experience of fun and enjoyment and positive feedback which in turn gave them a sense of competence and well-being. Most importantly these early learning experiences involved exploring a variety of physical activities and this not only developed perceptions of competence and relatedness but most significantly autonomy. Thus, the results from this study concurred with other studies which reported the importance of learning skills, improving performance and maintaining interest in exercise throughout childhood (Keegan, Harwood, Spray, & Lavallee, 2010; Bengoechea & Strean, 2007).

These early learning experiences were superseded by one of gaining competence when the immediate family members were supplemented by coaches, teachers and peers. These activities are designed to maximise enjoyment and are often regulated by rules adapted from standardised sport rules that are set up and monitored by an adult (Côte, Baker, & Abernethy, 2003). Thus, to some extent, the participants' exercise profiles emanated from their positive social relationships with peers and teachers or coaches inside or outside the school environment. Collectively, these findings relating to the early years highlight the importance of providing school or sport programmes to facilitate young people becoming regular exercisers. This may help to explain their adult exercise behaviour and various authors appear to agree (McCarthy, Jones, & Clark-Carter, 2008; Gould & Carson, 2008). During adolescence, social-environmental factors played a key role in the interviewees' physical activity behaviour, in particular they mentioned the

availability, variety and quantity of resources and cited four key roles played by others in motivating them to exercise and these were similar to aspects of social support as conceptualised by Wallston et al. (1983). These included providing tangible support, informational support, task related support and emotional support. McNeill, Kreuter, and Subramanian (2006) in their review of the relationship between the social environment and physical activity found that interpersonal relationships influence and establish positive social norms for physical activity and social network membership.

In adulthood, each interviewee invested a considerable deal of time and effort into enhancing their sport specific abilities which entailed, amongst other activities, going to the gym. Decisions to become active were associated with a dynamic process which involved a constant re-evaluation of one-self through interpretations of achievements and relationships with others. Although Richardson, Rogers, and McCarroll (1998) drew connections between the self and motivation, our findings make these connections more explicit as each individual had to negotiate different motivational contexts and social norms to make sense of their lives.

As the participants matured they became more self-aware and developed confidence in their own ability to adhere to exercise, the role of the gym emerged as a collateral to a specific sporting activity and thus consistent attendance may be dependent on this function. On the other hand, it provided an easy option to gaining the benefits of exercise without having to rely on others or be dependent on facilities that some sports require. Another important aspect at this stage was social affiliations within the exercise environment. Social interactions allowed an opportunity for the interviewees to build friendships with peers within an exercise setting and this concurs with Ullrich-French and Smith (2009) who reported that having close social affiliations with peers and family often results in a continuation of sporting activity. These

criteria collectively underpin the concept of "Habit forming". Gardner, Lally, and Wardle (2012) maintain that the creation of a habit requires motivation and conscious intention initially but the repetition of the action in a consistent context will eventually lead to it becoming dependent on external cues and this will reduce the conscious effort required to maintain the behaviour. Lally, Wardle, and Gardner (2011) underpinned the importance of incorporating motivation into this phenomenon because this would provide a reward (in this case, amongst others, building friendships in an exercise setting) that will complete the habit loop.

Self-concept and identity have being found to be associated with the ability to make choices based on intrinsic desires (Baxter-Magolda, 1999). The participants recognised their capability to make choices and internalise their actions and values as they began to identify with their perceived "exerciser" role. The benefits of this increased autonomy included increased confidence, effort, motivation and enjoyment. The current findings highlighted the dynamic process involved in developing an exercise identity and how this plays a positive part in the motivation of the "regular exerciser".

The interviewees appeared to place less value on rewards and body image relative to meaningful relationships, personal development and health. This resulted in greater enjoyment and a sense of purpose in life. One interesting finding is that a desire to exercise does not equate to an obsessive participation with it, quite the opposite because although each participant was highly committed to their physically active lifestyle they were not one-dimensional. It may be that the confidence their involvement in physical activity gives them is transferable to other aspects of their lives. This may link to the fact that the interviewees clearly articulated that their continued participation in physical activity was for personal challenges and achievements, that is, they were task-orientated as opposed to being ego-orientated and shows a possible link between

intrinsic motivation and Achievement Goal Theory (Duda, Chi, Newton, Walling, & Catley, 1995). Ciani, Sheldon, Hilpert, and Easter (2011) speculated from an educational perspective that an exploration into the antecedents of achievement goals could illuminate how these factors give rise to motivational orientations and in many ways the developmental process proposed by the study responds to this challenge.

Our model added to the literature base by providing an understanding of how perceived competence was influenced by the social context and opportunities available to the participants and furthermore our findings describe how an individual becomes empowered by taking ownership of his/her goals (Benogoechea & Strean, 2007; Mallet & Hanrahan, 2004). The participants set challenging goals for themselves and were not fazed by failure. It was the process of attempting to achieve their goals and the feedback they received in this process that was deemed to be important. This increased their sense of control over their own actions and resulted in greater confidence to self-regulate their behaviour. This would suggest that motivation is associated with the perceptions exercisers develop in relation to their ability to interact effectively with their environment. Each participant described similar experiences as they progressed through the stages outlined in our model over their life-span. However, the meaning derived from these experiences was different for each participant and was dependent on the quality of support they received and their perceived ability to interact with their social environment. Through recognising this dynamic process, fitness personnel, coaches and parents may become more effective in supporting individuals in learning to identify with exercise and become regularly active.

Limitations

Limitations of the study focused on three major areas. First, the participants were male and

mostly came from one gym which may limit transferability of its insights to other contexts. It was however a general gym and has similarities with other gyms of this nature. Guerin, Bales, Sweet, and Fortier (2012) have documented that males and females do not differ between their behaviour regulations. Second, it was only explored through the voices of five participants. Caution, must therefore, be exercised when considering how relevant the findings may be generalised. More importantly, Roper and Shapira (2000) mentioned that the aim of qualitative research is not for generalisability but for the readers to find resonance in the interpretations and to apply and evaluate the theoretical model in their own practice. Third, the researcher as a sports scientist had the advantage of an "insider's" privileged familiarity of the setting, which could have contaminated the findings although, counter to this, had an "outsider's" advantage of not knowing the participants and therefore more attuned to subtle differences in their accounts.

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Appendix A: The Post-Experimental Intrinsic Motivation Inventory

For each of the following statements, please indicate how true it is for you, using the following scale:

Interest/Enjoyment

I enjoyed doing this activity very much.
The activity was fun to do.
I thought this was a boring activity (R).
I would describe this activity as very interesting.

Effort Importance

I put a lot of effort into this.
I didn't try very hard to do well at this task (R).
I tried very hard on this activity.
It was important to me to do well at this task.

Pressure/Tension

I do not feel nervous at all while doing this activity (R).
I felt very tense while doing this activity.
I am very relaxed when doing this activity (R).
I felt very pressured into doing this activity.

Perceived choice

I believe I had some choice about doing this activity.
I felt like it was my own choice to do this task (R).
I felt like I had to this (R).
I did this activity because I wanted to.

Value/Usefulness

I believe this activity is of some value to me.
I would be willing to do this again because it has some value to me.
I believe doing this activity is beneficial to me.
I think it is an important activity.

Relatedness

I felt like I could trust this person (Instructor/staff).
I'd really prefer not to interact with this person in the future (R).
I don't feel like I could trust this person.

Scoring information for the IMI. To score this instrument, reverse score the items for which an (R) is shown after them. To do that, subtract the item response from 8, and use the resulting number as the item score. Then, calculate subscale scores by averaging across all of the items on that subscale. The subscale scores are then used in the analyses of relevant questions.

Appendix B: The Perceived Competence Scale

Perceived Competence for Exercise

Please respond to each of the following items in terms of how true it is for you with respect to dealing with your exercise routine.

1. I feel confident in my ability to exercise.
2. I am capable of exercising regularly.
3. I am able to do the routine on my own.
4. I feel able to meet the challenge of adhering to my programme.

Scoring Information. A person's score on the PCS is calculated simply by averaging his or her responses on the four items.

Appendix C: Semi-structured Interview framework (all questions will be supplemented by further probing questions dependent on the participants' responses)

1. How long have you been exercising in a gym environment?
2. Go back to when you commenced exercising. What were your reasons for starting in the first place?
3. Who got you involved?
4. What did they say to you about exercise and what it would be like to participate?
5. How has your family responded to you exercising?
6. Do they say anything to you that keeps you motivated?
7. What were your first experiences with instructors like? What did they say to motivate you?
8. What do you think are the reasons you remained exercising?
9. What motivates you to keep going when you feel discouraged, have a tough day, or when you get bored?
10. What helps you persist when you get tired or bored?
11. What type of goals do you select and how do you reward yourself when you reach them?

Table 1. Correlation Matrix of all the variables (subscales) on both surveys (IMI and PCS) used in study

Variables	Interest Enjoyment	Effort importance	Pressure tension	Perceived choice	Value Usefulness	Relatedness	Perceived Competence to exercise
Interest/Enjoyment	**1**	**0.535**	-0.294	-0.019	**0.438**	**0.517**	**0.534**
Effort/importance		**1**	-0.347	0.094	**0.498**	**0.402**	0.194
Pressure/tension			**1**	-0.285	-0.308	**-0.379**	**-0.537**
Perceived choice				**1**	0.150	-0.114	-0.147
Value/Usefulness					**1**	0.345	0.296
Relatedness						**1**	0.340
Perceived Competence to exercise							**1**

Values in bold are different from 0 with a significance level alpha=0.05

Table 2. Age marital status, ethnicity, education level, employment type and combined score on the two surveys of each participant interviewed

Interview No.	Age (years)	Marital status	Ethnicity	Education level	Employment type (PA level)	Combined score on surveys
1	22	Married	White British	7	Student/Sales (Moderate)	159
2	40	Single	White British	6	Engineer (Moderate)	188
3	33	Married	White British	7	IT (Light)	186
4	22	Single	White British	7	Student/retail (Light)	182
5	21	Single	Asian/British	5	Student (Moderate)	198

PA level (Physical activity level of job)

Figure 1. Final thematic map.