



Citation for published version:

Gillison, F, Osborn, M, Skevington, S & Standage, M 2009, 'Exploring the experience of introjected regulation for exercise across gender in adolescence', *Psychology of Sport and Exercise*, vol. 10, no. 3, pp. 309-319.
<https://doi.org/10.1016/j.psychsport.2008.10.004>

DOI:

[10.1016/j.psychsport.2008.10.004](https://doi.org/10.1016/j.psychsport.2008.10.004)

Publication date:

2009

[Link to publication](#)

©Elsevier. Gillison, F., et al., Exploring the experience of introjected regulation for exercise across gender in adolescence, *Psychology of Sport & Exercise* (2008), doi:10.1016/j.psychsport.2008.10.004

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Running Head: Introjected Regulation towards Exercise

Exploring the experience of introjected regulation for exercise across gender in adolescence.

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Originally submitted: 28th March 2008

Resubmitted: 14th August 2008

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Abstract

Objectives: The present study explored the experience of introjected regulation (i.e. a controlling motivational regulation in which people act due to internal pressures that are regulated by contingent self-esteem; Ryan & Deci, 2000) in relation to sport and exercise in mid-adolescence.

Methods: Adolescents reporting strong introjected regulation of sport and/or exercise relative to their peers were identified using quantitative questionnaires, and invited for interview. Semi-structured interviews were recorded with ten boys and eight girls (mean age 14 years), transcribed verbatim, and analysed using an interpretive phenomenological approach.

Results: Introjected regulation accompanied high levels of self-determined motivation, and was associated with high levels of physical activity in the present sample. Two major themes emerged: (i) gender differences in the basis for introjected regulation; and (ii) differences in the reasons and goals underpinning self-determined versus introjected regulations for exercise. In boys, introjected regulation was largely related to social factors, such as avoiding social disapproval and attaining ego enhancement. Girls rarely exercised with their friends, and introjected regulation more commonly reflected the partial internalization of a health and fitness rationale. In many cases, self-determined and introjected regulations were underpinned by different goals or reasons, supporting the importance of assessing an individual's multiple motives towards activities.

Conclusions: Introjected regulation for exercise was associated with higher than expected levels of participation in sport and exercise, regardless of whether it was founded on contingent self-worth, or the partial internalization of adaptive reasons for exercise. The implications of social control on future exercise participation are discussed.

Keywords: exercise, sport, motivation, self-determination theory, adolescent, gender, qualitative research

Declining physical activity levels in Western societies are an increasing problem for public health. Inactivity is implicated in the development of numerous life-threatening or debilitating diseases, such as cancer, cardiovascular disease and diabetes, and an increased risk in obesity (Department of Health [DoH], 2004). As exercise levels tend to decrease over the lifespan, low levels of exercise in childhood and adolescence are of particular concern. For example, in the UK, it is estimated that while 75% of boys and 52% of girls at age 11 are sufficiently active for health, by young adulthood these proportions drop to only 58% and 35% respectively (Biddle, Gorely, Marshall, Murdey & Cameron, 2004; DoH, 2004).

Motivation underpins purposeful behaviour and has been shown to be useful in understanding behaviour change, and in differentiating between adaptive and maladaptive outcomes in physical activity settings (see Hagger & Chatzisarantis, 2007). Self-determination theory (SDT; Deci & Ryan, 1985, 1991) is a framework of motivation that proposes motivation to be multidimensional, and reside along a continuum of self-determination ranging from amotivation (i.e., when a person lacks the motivation to act) through extrinsic motivation (i.e., when a person acts to attain separable outcomes), to intrinsic motivation (i.e., when a person acts for the interest inherent within a particular activity). Four distinct types of extrinsic regulation are defined which vary in the degree to which they are self-determined. From the least to the most self-determined these are; external regulation (i.e., acting to avoid punishment or gain rewards), introjected regulation (i.e., acting to avoid feeling guilty, or to obtain contingent self-worth), identified regulation (i.e., acting as one feels it is personally important) and integrated regulation (i.e., behaviours that contribute to defining who one is) (see Ryan & Deci, 2000 for a review). Within SDT, greater self-determined motivation is hypothesized to positively predict adaptive outcomes such as increased behavioural engagement and enhanced psychological well-being (Ryan & Deci, 2000). Research in the context of exercise has supported this premise by showing autonomous motivation towards exercise to positively predict an array of adaptive outcomes including physical self-esteem (e.g., Wilson & Rodgers, 2002), more positive attitudes

towards exercise (e.g., Wilson, Rodgers, Blanchard, & Gessell, 2003) and objectively-assessed behavioural engagement (e.g., Standage, Sebire, & Loney, 2008)

Beyond childhood, it is argued that the majority of our behaviours are extrinsically motivated, as few activities are undertaken purely for pleasure (Mullan & Markland, 1997). However, extrinsic motivation may still result in positive outcomes if they are located towards the self-determined extreme of the motivational continuum, as motivation becomes more self-endorsed and the external factors driving behaviour are taken on board as personally valued and meaningful (Deci, Eghrari, Patrick & Leone, 1994). The basis for movement along the continuum stems from the proposal that people have an innate tendency to integrate themselves within their environment, such that behaviour that is initiated through external regulation (e.g., abiding by societal rules to avoid punishment or gain rewards) can become more autonomous if these rules can be adopted as having personal meaning, and to reflect one's identity (e.g., in adopting societal values as a personal moral code). This dynamic process by which individuals may move through the continuum of motivation to become more self-determined in their actions is termed *internalization*, and is of particular interest to the study of behaviour change (Deci et al., 1994; Ryan & Deci, 2000).

The study of motivation for sport and exercise is pertinent to adolescence, as while this population are generally more active than adults, motivation and behaviour may be less closely aligned; as a result of mandatory physical education lessons and/or parental control few adolescents are permitted to become completely sedentary regardless of their own preferences. Thus, exercise is likely to be driven by external regulation to some extent. The resultant implication for long-term participation is that once such external controls are removed, adolescents are unlikely to maintain their existing exercise levels into adulthood unless the motivation to do so has been at least partially internalised (Deci & Ryan 1985, 1991). Accordingly, gaining a better understanding of the factors that help adolescents to embark on the process of internalization to become more self-determined in their motivation towards exercise could provide valuable information for the development of public health interventions.

Recently, an in-depth understanding of introjected regulation has been singled out as holding much promise for researchers and practitioners aiming to encourage more autonomous functioning in adolescents in relation to exercise (Standage, Gillison, & Treasure, 2007; Vansteenkiste, Soenens, & Vandereycken, 2005). Introjected regulation is considered to be a relatively controlling form of motivation in which behaviour is regulated by internal sanctions and/or pressures that are directed towards attaining reward (e.g., ego-enhancement and pride) or avoiding punishment (e.g., guilt and shame) (Ryan & Deci, 2000). In observational research, introjected regulation has been associated with short-term but not with long-term behavioural persistence (e.g., Pelletier, Fortier, Vallerand, & Briere, 2001). However, introjected regulation also represents the first step in the adaptive process of the internalization of behaviour, and thus may play a pivotal role in how adolescents first come to adopt activities introduced to them by others, such as health behaviours (Deci et al., 1994; Vansteenkiste et al., 2005). Indeed, it is argued that without external influences driving the early stages of behaviour change, an individual may not gather sufficient experience to become competent and familiar with the new activity, an essential precursor to internalization. Past research has quantified introjected regulation in adolescent samples through questionnaire studies (e.g., Pelletier et al., 2001; Sheldon & Bettencourt, 2002; Standage, Duda & Ntoumanis, 2006). However, no qualitative studies could be identified that explored this specific regulation in-depth with school-aged adolescents.

To obtain insight into adolescents' experience of introjected regulation towards sport and exercise, the present study set out to analyse interview data using Interpretative Phenomenological Analysis (IPA). IPA is a method of analysis that can be used to investigate the process that individuals use to make sense of their world (Smith & Osborn, 2003). As such, it is particularly well suited to the study of motivation as advanced by SDT, which is based on individuals' subjective perceptions of their environment and their reactions to it rather than its objective attributes (Ryan & Deci, 2002). The IPA method typically involves a small number of cases, as it is not so much concerned with generalisations but with investigating the meaning that particular events or situations hold for different people. A

phenomenological approach has been used to good effect in other areas of psychology to obtain in-depth descriptions of adolescent experience (e.g., Kinavey, 2006; Peterson, Sword, Charles & DiCenso, 2007). Our aim was to explore the broad research question; “*what reasons and goals for undertaking sports and exercise underpin introjected regulation in adolescents?*”

Method

Participants

Participants were Year 9 students recruited from two large coeducational secondary schools in South West England (M age = 14.24; SD = .30). Both schools served towns in rural areas, and had low numbers (<2%) of students from ethnic minorities. School A served students with slightly below average socio-economic status (SES) indicated by a high entitlement to free school meals, and School B served students with slightly above average SES. Ethical approval was granted from the local Research Ethics Committee. Written consent for questionnaire completion was provided by Head Teachers of each school acting in loco parentis, and by both parents and students for those students attending interviews.

Measures

To identify students exhibiting high levels of introjected regulation for interview, all students in the year group were asked to complete a brief questionnaire assessing their motivation towards exercise (BREQ-2; Markland & Tobin, 2004). The BREQ-2 consists of 19-items relating to the five types of regulation identified by SDT (i.e., amotivation, external regulation, introjected regulation, identified regulation, and intrinsic motivation). Responses were recorded on a five point Likert-type scale anchored from 0 (*not true for me*) to 4 (*very true for me*). Adequate factorial validity and reliability has been previously reported for the BREQ-2 in a sample of 404 UK school children (M age = 13.25 years; $range$ = 11-15 years; Gillison & Standage, 2005). To obtain a sample of students reporting high introjected regulation relative to the cohort average, and a sufficient pool of participants to account for

those declining to be interviewed, students reporting the highest 15% of scores for introjected regulation were invited for interview (47 students).

Procedure

The study was presented to all students in the year group, emphasising that the research was optional, and that their responses would remain confidential. All participating students then completed the BREQ-2 questionnaire during a registration period, taking approximately five minutes. The criteria of participant selection from the initial sample were not communicated to the school in order to retain confidentiality. The final interview sample was determined by practical issues such as prompt receipt of parental consent, and presence in school on the day of the interviews. Interviews were conducted in a quiet room at the student's school by the first author. Participants were reminded at the outset of the interview that they did not have to take part and could withdraw at any time without negative repercussions. Written consent and permission to record the interview was then obtained.

Development of Interview Schedule

The purpose of the interview was to extract participants' accounts of why they take part in sport and exercise, and in particular why their motivation is often introjected (i.e., undertaken to avoid feelings of guilt, shame, anxiety, or to gain feelings of self-worth and/or ego enhancement). Interviews were semi-structured, beginning with open questions relating to the adolescent's usual reasons for activity, leaving more specific theory-based questions to the end of the interview to avoid biasing participants towards these factors at an earlier stage (Gillham, 2000) (see Appendix for Interview Schedule). Participants were first asked what sport or exercise they took part in during a 'normal week'. Although it is acknowledged that self-reported physical activity commonly overestimates activity levels (Shephard, 2003), this was considered sufficient as a rough guide from which to approximate usual activity levels for the purposes of the present study. Participants were then asked to describe their usual goals and intentions for exercise; whether these varied for different types of exercise or in particular settings, and if they had changed since they started at secondary school. Finally, to open a discussion explicitly relating to the basis for introjected regulation, participants

were referred back to the questionnaire and asked directly what lay behind their answers (e.g., why they would *feel guilty* if they skipped an exercise session, why do they consider exercise something that they *should* do, etc).

Data Analysis

Interviews were recorded using a digital voice recorder, and transcribed verbatim. Transcripts were downloaded into Atlas.ti (version 7.0, Scientific Software), which facilitates the systematic process of identifying and coding meaning units within the text to assist in the exploration of themes and relationships within and across transcripts. The use of computer-assisted data analysis packages save time, and facilitates a more systematic approach to analysis, and comparisons between researchers (Tesch, 1989). IPA makes explicit the interpretative nature of analysis, and as such, does not usually require investigator triangulation to further validate its findings. However, because in the present study IPA was used to explore theoretical constructs rather than an entirely participant driven agenda, investigator triangulation (i.e., drawing on more than one investigator's interpretation of the data) was incorporated to promote dependability and trustworthiness of the interpretations in relation to introjected regulation (Golafshani, 2003).

The analysis of transcripts followed a well precedented structure for the IPA approach (Smith & Osborn, 2003): The transcripts were reviewed several times by two researchers (the interviewer and a second coder), until both became familiar with the accounts. Key phrases or content were first independently coded into preliminary low level themes. The two researchers then conferred on their interpretations of the principal emergent themes, and instances in which there was a divergence of opinion were discussed. The aim of this process was not to arrive at a unanimous interpretation of the interviews, but to (i) ensure the basis for each interpretation was fully scrutinised with respect to whether it was backed up by meaningful units from within the interview text (i.e., a phrase, sentence or paragraph could be identified to represent each concept or theme), and (ii) open a discussion of alternative interpretations. Thus, in line with the IPA approach, two alternative codes or interpretations were allowed to co-exist if both researchers agreed that

each was supported by the evidence (Smith & Osborn, 2003). Any interpretations considered to be poorly supported by either investigator were not included in the results. No theoretical constraints were placed on the coding at any of the data extraction stages (i.e., the SDT framework and/or terminology was not imposed). The researchers then worked cooperatively to consolidate the accepted group of initial codes and interpretations into well defined themes (Patton, 2002).

Following coding, the interviewer constructed profiles for each participant. These drew on the key meaning units extracted for each individual, and contextual data relating to the experience of the interviews themselves (e.g., the participant's attitude, level of engagement, and cooperativeness) to assist in clarifying relationships between themes for each individual. Participant profiles were then checked by the second coder for consistency with the evidence presented in the interview transcripts. The participant profiles were used as a check to ensure that the final themes and the proposed relationships between them were a representative account both within and across participants. While no attempt was made to conduct formal comparisons between naturally occurring groups of participants, group by group descriptions are presented (e.g., by gender) to highlight common characteristics that are shared or that distinguish between sub-groups.

Consistent with previous applied work (Deci et al., 1994; Vansteenkiste et al., 2005), evidence for introjected regulation was considered to be present when participants used words such as *should* or *ought to*; when they discussed feelings of guilt; desire for ego-enhancement or contingent self-worth (e.g., motivated by pride); or when they implied that they were acting to avoid negative affect but for reasons that they did not entirely understand (i.e., occurring when individuals "swallow ideas whole" without integrating them with their existing beliefs and values; Deci & Ryan, 1991).

Results

Participants' reasons for taking part in sport and exercise included enjoyment, health and fitness, weight control, improving appearance, and socialising. It was notable that although the present sample had been selected for reporting high levels of introjected regulation

relative to their peers, for the majority of participants this was not their most predominant form of motivation. All participants reported concurrent high levels of intrinsic motivation for sport and exercise, invariably reporting that enjoyment was either the primary reason, or one of two primary reasons for doing so. Similarly, a significant proportion of respondents frequently made comments suggesting acting out of identified regulation for exercise, that is, acting due to the perceived importance of exercise. Thus, the experiences of introjected regulation are presented in the context of coexisting self-determined regulation for sport and exercise.

Two main themes emerged from the interviews relating to the basis for participants' experience of introjected regulation. The first related to *gender differences* in the basis for introjected regulation, with boys more commonly reporting exercising due to social pressure or to attain ego enhancement, and girls more likely to report guilt as a motivating factor. A second theme (termed *motivational profile*) related to the integration of different forms of motivational regulation in supporting exercise. Engagement in exercise appeared to be maintained both by positive factors that prompted participants to seek out opportunities for exercise, and negative factors that promoted maintenance by deterring quitting.

Theme 1: Gender Differences

A marked difference emerged to the basis of their reported introjected regulation between genders. For boys, the majority of the reasons given for introjected regulation related to attaining social approval, for example feeling obliged to exercise to fit in with friends, or for ego enhancement, for example perceiving exercise settings as a forum to attain peer status or gain a sense of pride. This appeared to result from the strong peer culture for boys to exercise together, and of sport participation to form the basis of boys' social lives.

Participant 1 (P1[M]), a highly active male, presented an example of this:

P1[M] . . .like I go over my friend's, like most nights my best mate, and he lives quite far away so I go to his all the time. And we're never stuck indoors. Like, the only time we're stuck indoors is if we're, just probably going to sleep or something.

Interviewer: Does what your friends think about sport affect how much you do?

P1[M] If like my friend's doing something and I don't want to do it, I'd like play with them. I always say "are you going to do that" and if they say "yeah", I'll do it the same with them. Sometimes,...it's just with the footy I think, or something like that, if my friends aren't playing it'll be like; "No". Or someone I don't like or something like that, I won't do it.

This participant's engagement in sport and exercise was clearly a large part of his social life, but furthermore his comments suggested that social factors, namely wanting to mirror what his existing friends did, could dictate when and where he exercised. He went onto expand on the potentially controlling impact that the views of others may have had on his involvement in exercise in describing the basis for his questionnaire responses:

P1[M] Yeah, 'cause I used to, like, I didn't used to eat properly or nothing. And, I dunno, just, where I used to live I wasn't really like what I am now – I wasn't energetic. I didn't like doing sports, and I always made excuses to stay indoors and all that. I was the sort of person to stay indoors if you know what I mean.

Interviewer: What do you think changed?

P1[M] I thought, some people say "Ah, you can't do it" but I just proved them wrong if you know what I mean. Well, some people say, "you're not a very fast runner" because you're big and all that, but I just say; "yeah, so?" I don't care what other people think, I know what I'm good at.

Participant 1's comments suggest that his impetus to become more active was a combination of personal dissatisfaction and perceived social disapproval. Although he argued that he was not concerned with what other people think, his penultimate comment suggested the opposite, and that a trigger for him to become active may have stemmed from a desire to "prove them wrong". As such, Participant 1's comments suggested that his introjected regulation related to his wish to maintain the approval of his peers by continuing to take part in sport and exercise alongside them, deriving a sense of pride at having become a more active person (i.e., ego enhancement, Deci & Ryan, 2000).

A second male participant (P2[M]) provided further support for the suggestion that introjected regulation for sport and exercise may result from social control. Unlike Participant 1, Participant 2 was an accomplished sportsman, having played rugby for his county side in addition to competing in football and athletics teams. He reported that his primary reason for taking part was as he liked “feeling fit”, and to spend time with his friends. However, Participant 2 also reported that it was often social pressure, rather than his own preference, that ultimately determined which activities he took part in. For example, he reported joining a football team in order to help friends out;

P2[M] “..like I wasn’t too fond of football, but they needed another player, so I joined the team, and it’s good now, cause um, I’ve made more mates. Well, I’ve made mates that I wasn’t particularly fond of before”.

Similarly, when asked why he reported feeling guilty if he missed out on exercise sessions, he related this to social pressure:

P2[M] Well yeah, the season coming up, ... I was gonna like concentrate more on, like say 100 metres or something like that cause I been doing a lot of that as well. Cause with rugby, the thing I don’t like about it is, it’s sort of at the weekend when you do it, you kind of get injured during the week. Kind of stiff legs and knocks and stuff. So I’m only just about like recovered for the next game, so I can’t do anything during the week. So I wasn’t going to join until Christmas this year, but my mate said that if I didn’t then the team would fold, as we haven’t got enough players as it is..... So I’m starting this season, but I don’t know if I’m gonna next year.

From this discussion it seems that Participant 2 enjoys sport and exercise, but joined both a football, and rugby team due to pressure from peers rather than personal choice. He did not appear to perceive these external influences negatively however, but was aware that his peers considered him to be a talented athlete (he reported that he had once been accused by peers of taking steroids as he was so much bigger and faster than his year group), and recounted his coercion onto these teams by his peers with apparent pride. Thus, similar to

Participant 1, the reason for his high degree of introjected regulation appeared to stem from the ego-enhancement he perceived from his peers' responses to him as an athlete.

It was not only peers who reinforced an active lifestyle for boys. Participant 3's response to the question asking him about the basis for his introjected regulation appeared at first to be relatively undefined, perhaps related to his fitness and weight loss goals:

P3[M] I don't like missing it, because I like to keep up with it. And I just feel fat and lazy if I don't go. But yes, I probably would feel bad if I didn't go....I probably would feel guilty a little bit, I'm not sure why, but I think I would.

However, on further discussion it seemed likely that his experience of introjected regulation for regular exercise also related to seeking his father's approval (i.e., for contingent self-worth):

P3[M] Well, my Dad is quite...he says to me like "You want to keep active, because you don't want to become really fat and that." He's just looking out for me really, but it was my decision to like, do something about it... He's not sort of egged me into doing it. But it's just, I would feel that I'd be letting him down a little bit if I didn't keep up with it.

As such, it is suggested that Participant 3 may have perceived his father to have been providing similar contingent approval that sustained his engagement in regular exercise to that reported by Participants 1 and 2 in relation to their peers. What is important here, in differentiating this as introjected rather than external regulation, is that Participant 3 appears to be acting in response to an internal representation and management of his father's contingent evaluation of his behaviour, rather than through contingencies exerted by his father directly (cf. Deci & Ryan, 1985).

Not all boys reported that social control formed the basis for their introjected regulation, but all reported the social environment to be one that promoted participation in sport and exercise, and in which not taking part would restrict their opportunity to spend time with friends. In contrast, even those girls with friends who were regularly active reported that they rarely exercised together, and that it figured very little in their daily social lives. For

example, Participant 4 (P4[F]) took part in a number of after-school sport clubs and reported performing toning exercises she found in magazines at home. However, she did not mention spending time with friends in either the reasons (i) why she took part, or (ii) in her reasons for reporting introjected regulation for exercise:

P4[F] (i) I do it because I know it's important, and 'cause I think it's good to maintain a healthy body really, and um I enjoy it, so it's not really anything for me to cry over. Yeah, I think it's good.

P4[F] (ii) Um, I think maybe [I'd be letting] myself down if I stopped exercising because I know what I'm doing, and what I should be doing. Um, I think I'd feel I'd really feel like I'd want to get out there and do something, 'cause I know I should be doing it. It's not something that you should be doing every day, but I know that I should be doing it most of the time.

Despite not reporting social reasons for taking part in sport and exercise, Participant 4 indicated that she did prefer to do so with friends, just as the boys interviewed did. However, it appeared that for girls there was no culture of exercising together. Instead, Participant 3's source of motivation seemed to relate to the health benefits that exercise infers, and the basis for her introjected regulation appeared to stem from the partial internalization of external controls to exercise for health. Specifically, the pervasiveness of introjected regulation towards exercise is highlighted by the participant's frequent references to what she felt she "should" be doing. For example;

P4[F] Sometimes when I feel lazy I can't be bothered to do any exercise, but I know at school I should do it, and that I've got my time there, so I should do it then.

A second female Participant (P5[F]) also showed evidence of having purposefully adopted a form of exercise outside a social setting (running) for health reasons;

P5[F] The [exercise] at school [I do] because we have to, but after school I just want to be healthy.

This appeared to be a decision that the participant had taken in the face of considerable perceived barriers to participation, stemming from low perceived competence for

conventional sports, and experiencing embarrassment when exercising alongside peers at school;

P5[F] Um, at school it's OK, because everyone's doing itBut it's quite embarrassing when there are really good people at school, really sporty girls, and so you can't do anything. So in some like, ball games, you can't throw the ball, and you can't keep up with the run. It's quite [embarrassing].

In line with her principal reasons for engaging in sport and exercise, Participant 5 attributed the basis for her introjected regulation to the sense of guilt felt when failing to adhere to the healthy lifestyle that she is trying to maintain.

P5[F] I feel bad [if I miss out on exercise] because I wanted to try and increase the distance [of running], so I want to try and get really healthy. I try and eat healthily, and I try and keep up my energy all the time. I want to try and keep everything consistent.

Participant 5 reported having made a conscious decision to adopt more exercise for health and fitness benefits (i.e., extrinsic reasons), for which she was not reliant on others to be able to take part. Yet, in a similar way to Participant 4, she also indicated that even though she had friends who were regular exercisers, she did not feel that exercising together was an option:

P5[F] Um, well one of my best friends is very sporty, and she does it all the time. A few of my friends that we hang out with are keen swimmers, and I don't swim at all. So, when we're together we don't..... I feel sometimes a little bit left out, because I can't be as good, or do how much they do.

A further participant (P6[F]) illustrated that in some cases, sport and exercise may be so far removed from girls' social lives that they are not aware of what their school friends are doing. Participant 6 was very active, swimming at a local club four times a week. However, she had not gone along with her existing friends (as was the norm for boys joining sports clubs), but instead took part with other girls who had independently opted to take up the same activity. When asked whether her friends were active, she responded;

P6[F] Yeah, they [my friends] do all the PE and that at school, but I don't know what they do out of school.

Her comment suggested that sport and exercise activities were not something that she and her friends talked about.

In summary, it was characteristic of the girls in the sample (though not exclusive to them), to attribute the basis of their reported introjected regulation for exercise to the failure to attain health and fitness outcomes (i.e., via a sense of guilt). If they were engaged in regular sport and exercise, this tended to be either alone, or with separate, sport-specific peers rather than their existing friends. This contrasts with the boys, for whom sport and exercise formed the basis of their social lives. The majority of boys reported that their introjected regulation stemmed from the ego-enhancement obtained from peer admiration or approval, and the desire to avoid peer disapproval (i.e., regulation of one's contingent self-esteem).

Theme 2: Motivational profile

The second theme to emerge from the interviews reflects the multi-dimensional nature of motivation within the sample. This theme demonstrates the difference in reasons participants had for choosing to engage in sport and exercise with those reasons they gave for not quitting. For half of the study sample, there was a clear difference between these factors. An example of this was provided by Participant 7 (P7[F]), a keen female horse rider who enjoyed several types of sport and exercise, but also reported considerable deterrents to her participation related to anxiety over her physical appearance. Her reasons for (i) why she took part in sport and exercise, and (ii) why she'd feel bad if she did not (i.e., the basis for her introjected regulation) were:

P7[F] (i) I do horse riding because, like, I enjoy it, 'cause like that's what I've always wanted to do. And I do dance to keep up the muscles in my legs for horse riding.

(ii) Well I'd just think [if I stopped] I'd gain loads of weight. (*pause*) Because like basically, weight is the main issue for exercise. (*pause*) It's the main reason I do it.

From these comments, Participant 7's motivation to seek out exercise in the form of her chosen sport appeared to be intrinsic (i.e., for enjoyment), supported by a training activity (i.e., dance) regulated by identified regulation (i.e., personal importance and meaning). However, these two specific activities would also contribute to her overall concern to take sufficient exercise to obtain the separable outcome of weight control, which formed the basis of her introjected regulation (i.e., contingent self-worth related to her physical appearance). Despite Participant 7's evident intrinsic motivation for her chosen sport, comments relating to social physique anxiety and the fear of weight gain appeared far more often within the interview, for example she preferred exercise environments;

P7[F] when there are no boys around..... out of school when there's no one watching.

These statements suggested that the basis for her introjected regulation for exercise was a very salient concern.

It is of note that, like many of the boys, Participant attributed control over how much she exercised to her peer group rather than herself.

I: Does what your friends think affect how much exercise you do?

P7[F] Yeah, like in school it does. But like out of school they're not there, so I'm just in complete control of it. But in school, if they don't do it then I don't wanna do it."

In contrast to the boys in Theme 1 who reported engaging in sport and exercise to gain peer approval, Participant 7 implies that she perceives pressure from her social environment to *abstain* from exercise in order to gain peer approval (i.e., down-regulating her behaviour to enhance self-worth).

Participant 8 (P8[M]), a highly active male club rugby player also provided an example of a disparity between (i) reasons for seeking exercise, and (ii) the reasons deterring him from quitting;

P8[M] (i) I do exercise because I think it's fun and enjoyable. Um, I like it to keep fit and stuff like that. Um, I do it because it is something interesting that I enjoy doing as well.

P8[M] (ii) Um, if I haven't been to rugby training for several weeks I feel bad because I haven't caught up on exercise.... I feel like I haven't had my like, dose of exercise for the week or day, or whatever. And I don't know, it's just I feel like if I don't exercise all the time I'll let them [the team] down, or I [won't] maintain that fitness.

Just as for Participant 7, the positive reasons given by Participant 8 for taking part appeared to be intrinsic (fitness and enjoyment), whereas the reasons deterring quitting appeared to be extrinsic (letting the team down, not getting the exercise he "should"). Participant 8 demonstrated some understanding of his own multiple motives for participation, acknowledging that his own motivation for sport may differ from that which he attributes to his friends:

P8[M] My friends do quite a lot of sport but, um, I don't think they're as enthusiastic about 'exercise'. They'll play football and stuff like that, but they're not really enthusiastic about the exercise side of sport. I don't think.

Understanding the different motivation behind specific activities undertaken for fun (e.g. a particular preferred sport) compared with those undertaken expressly for the sake of getting "exercise" was articulated by more than these two participants. For example Participant 3 (P3[M]) provided a fairly sophisticated account of how he thought the different forms of regulation he and others had for exercise were related:

P3[M] Um, I would usually play football because, I just like playing football, but I go to the gym regularly because I don't like being overweight. So I wanna keep fit and build up some stamina. That's usually why I would do it...I think lots of people just enjoy it, and enjoy it a lot, but I do like to do it to lose weight as well, after school and going to the gym and that, and to like bulk up a little bit, so it's a bit of both of those really... But it's generally people enjoy it, and they don't *mind* the fact that they're like going to become, to keep healthy. I don't think keeping healthy is the main reason they start doing it. They like doing PE, but it's [health] one of the reasons they might enjoy it.

However, the suggestion that different regulations support different types of activity did not wholly explain the differences between factors underpinning active engagement versus drop-out. That is, even within individual participants it was not as simple as intrinsic motivation maintaining engagement in sport and play, and introjected regulation maintaining training and fitness activities. Fitness activities were also commonly supported by more self-determined regulation, i.e., identified regulation, indicating that they had been internalised to become personally important and valued by adolescents. For example, identified regulation (perceived personal importance) supported by health and fitness reasons for exercise could be seen in the comments made by Participants 4, 5 and 6, presented in relation to Theme 1;

P4[F] I do it because I know it's important, and 'cause I think it's good to maintain a healthy body really.

P5[F] the [exercise] at school [I do] because we have to, but after school I just want to be healthy.

Conversely, Participant 2 provided an example of an individual whose participation in sport, which by most adolescents was undertaken just for fun, was at least partially regulated by introjected regulation to avoid perceived peer disapproval:

P2[M] So I wasn't going to join [the rugby team] until Christmas this year, but my mate said that if I didn't then the team would fold, as we haven't got enough players as it is.....
So I'm starting this season, but I don't know if I'm gonna next year.

In summary, Theme 2 explored the basis of multiple motives for participation in sport and exercise. Through using questions phrased in different ways (one positive, one negative), different reasons for taking part in sport and exercise were elicited which could not simply be explained by the nature of the activity (i.e., sport versus fitness training). Instead, adolescents' multiple motivational regulations reflected the way in which different factors operated together to keep them engaged in sport and exercise.

Discussion

Participants presented a range of reasons and goals underpinning their motivation for sport and exercise. However, within this, two main themes emerged; (i) gender differences in the

basis for introjected regulation based on differences in the social environments of boys compared with girls, and (ii) the coexistence of positive motivating factors that encouraged participation alongside negative motivating factors that discouraged quitting. Both genders reported enjoying sport and exercise, and within this sample all but one participant were sufficiently active to meet government guidelines (DoH, 2004). As such, they represent a particularly active subgroup of the adolescent population that they were drawn from, of whom it is estimated that only 58% and 35% of boys and girls respectively are sufficiently active for health (DoH, 2004). This finding in itself may be indicative of the utility of introjected regulation as part of a wider motivational profile in young people, a possibility that will be explored in greater detail following the discussion of the main findings.

The first theme explored how sport and exercise played very different roles in the lives of adolescent boys than of girls. For boys, it formed a large part of their social life, and came to be accepted as something that they would be prepared to do in order to spend time with their friends. The majority of boys interviewed agreed that they would exercise less if their friends were not active. When boys did join clubs out of school, this tended also to be with their existing friends. As such, the present findings are consistent with quantitative research reporting on the positive role of social support (e.g., Gentle, Caves, Armstrong, Balding & Kirby, 1994; Cardon, Philippaerts, Lefevre, Matton, Wijndaele, Balduck, et al., 2005) and peer relationships (Smith, 2003) in maintaining exercise levels. However, the present research extends this literature by indicating that the decision to take part in sport and/or exercise to maintain social bonds may also be perceived to be controlling. In many cases the impetus to act appeared to be governed by feelings of obligation and seeking approval. Reported introjected regulation commonly related to self-generated perceptions of having obligations towards peers to stay involved in group sporting activities, and was indicative of the boys' reliance on their involvement in these activities to obtain peer approval, and to enhance their sense of self-worth. Thus, although enjoying sport and exercise overall, on specific occasions when they may have otherwise chosen not to take

part, boys' decisions to do so were internally regulated by the anticipated value of social and personal outcomes (e.g., peer acceptance).

Introjected regulation is often considered to be a valuable form of motivation in cases where it marks the first step in the process of the internalization of external regulation into personally meaningful and important goals (Deci et al., 1994). However, introjected regulation as a result of ego-enhancement or contingent self-worth as reported by many boys in this sample is not expected to have such positive outcomes. As such motivation remains reliant on external environmental support it is unlikely to progress towards further internalization. If introjected regulation is not internalized individuals continue to perceive the environment to be controlling rather than supportive of personal autonomy, which has been shown to ultimately compromise existing self-determined forms of motivation towards the activity in most cases (Ryan & Deci, 2000). As such, the positive short-term behavioural support of introjected regulation is not expected to translate to long-term participation. Even if self-determined motivation is not compromised, the short-term positive effect of introjected regulation on participation would be expected to be unstable, as participation would cease as soon as the externally contingent factors are removed. Thus, in the example provided by the present population, boys' participation would be predicted to cease when the culture changes to remove these external controls, as is the case of leaving school.

In relation to boys, Theme 1 therefore serves to direct our attention onto the importance of the quality of motivation underpinning exercise participation levels, in addition to assessing physical activity levels themselves. As boys are more active than girls during their school years, they have typically received less research attention (Caspersen, Pereira & Curran, 2000). This is despite indications that a significant decrease in activity is also observed in boys by young adulthood, but may occur a few years later than in girls (Boreham & Riddoch, 2001). The present findings suggest that future work is justified in exploring the extent of controlling forms of motivation for exercise, stemming from boys' social exercise environment across the wider school population, and whether sustained introjected regulation can compromise the more self-determined forms of motivation over the

long term. This information would be instructive in understanding why exercise levels decline in boys in later teenage years, and may suggest approaches to plan ways to attempt to maintain boys' involvement in late-adolescence and beyond. Such research would be particularly relevant to efforts to maintain boys' participation in exercise on leaving school with the dispersal of their existing peer group.

Unlike the boys, girls in the present sample rarely exercised informally with their existing friends, and sport and exercise were notably separate from their social lives. This finding reflects those of many studies aiming to investigate or promote physical activity specifically in girls, which consistently report a perceived lack of peer social support for exercise (e.g., Neumark-Sztainer, Story, Hannan, Tharp & Rex, 2003; Saunders, Motl, Dowda, Dishman & Pate, 2004). Yet, this was despite the girls in this sample at least, enjoying exercise, and enjoying it more when with their friends.

One possible reason for the contrasting social environments of boys and girls may rest in a difference in the factors considered important for establishing peer acceptability and status. Peer acceptance and status are important as they contribute significantly to adolescents' efforts to construct a stable self-identity (e.g., Harter, 1998). Girls were rarely involved in sport and exercise outside school with their friends even when they identify their friends as sporty, suggesting that exercise is not widely perceived to be an important part of life for them. It has been reported that physical appearance is a primary factor for determining peer acceptance and popularity during adolescence (Craft, Pfeiffer & Pivarnik, 2003), and that this may be perceived to be at odds with taking part in sports and exercise for girls, particularly with the conventional female gender role (Crissey, 2006; Malcom, 2003). Therefore, while being competent at sport may be perceived positively, taking part itself may not make any contribution to positive peer judgements, and furthermore may even compromise girls' attempts to project a feminine and attractive image. Thus, it may be that introjected regulation for girls stems from the conflict between valuing the benefits of regular activity but not wishing to be seen by peers to be taking part (i.e., internalization is therefore not permitted to be facilitated beyond "partial internalization" which characterises introjected

regulation). In this scenario, being confident in one's gender role or considering gender role to be unimportant may be a prerequisite to the participation of adolescent girls in sports and exercise. For boys there appears to be no such conflict; sport is considered to be a masculine domain, and so to be seen to be active and succeeding in this arena is consistent with male goals for identity and peer acceptance (McCabe & Ricciardelli, 2003).

Girls' justification for their reported introjected regulation for sport and exercise was also notably different from that of most of the boys, and more commonly related to the threat of loss of fitness or guilt at failure to adhere to a healthy lifestyle. However, in many cases such instances of introjected regulation occurred closely alongside evidence of other more self-determined forms of motivation, which suggested that they may be in the process of internalization. For example, Participant 4 made the statement;

P4[F] Probably [I do more exercise now than I used to] because I think it's more important, and I used to think it was just for fun, but now I know it's just something that you should do, and it's good.

This statement contains an indicator of identified regulation ("it's important"), intrinsic regulation ("just for fun") and introjected regulation ("it's something you should do"). Such a response suggests that she is in, or has undergone a process of change, supplementing the intrinsic motivation that seemingly underlies exercise as play in childhood, with the adoption of exercise to meet extrinsic goals (e.g., health, socialising, weight control). As her motivation is internally rather than externally derived (i.e., self-determined), she would be expected to go on to continue her engagement in sport and exercise at points where the environment may change (e.g., change of friendship group, or leaving school), so long as their motivation was not compromised.

Internalization is a dynamic process, and as such, is best studied over periods of change rather than the snapshot provided by the present cross-sectional study. However, through their comments on previous levels of physical activity and associated motivation, participants provided responses indicative of the internalization of their currently introjected

reasons for exercise. Participant 5, also female, also indicated that she had made a conscious decision to change, taking inspiration from her father;

P5[F] Well, my Dad used to run a lot in the mornings, and that's when I was younger. But then recently I wanted to do more exercise and it's like an easy way to do it I suppose.

Although she rarely otherwise refers to why she feels she "should" be taking part in sport and exercise, her early comments suggest this is for health reasons. As such, her comment is indicative of the process of internalising a new reason for exercise (identifying health benefits) alongside her previous motivation (enjoyment).

Evidence of a process of change was not limited to girls however, some boys also identified points in their lives where they had made a conscious decision to take up regular exercise to obtain separable outcomes. For example, Participant 3 stated that he only recently started going to the gym;

P3[M] I decided I didn't really like the way I looked, so I decided to do something about it. This was a decision which appeared to stem from comments made to him by his father, and is consistent with the expectations from an SDT perspective that internalization will take place when presented with a meaningful rationale and by someone who is respected (Deci et al., 1994). Thus, although some boys' responses did reflect a process of internalization based on health reasons, it was far more prevalent in girls. One reason for this may be that without a supportive social environment sustaining their participation in sport and exercise for intrinsic reasons (e.g., having fun with friends), in order to stay active girls had to develop, and rely on other sources of motivation. As most adolescents are required either by teachers or parents to take part in some form of physical activity (e.g., PE), their motivation is likely to initially stem from external regulations. However, if, as SDT suggests, internalization is an adaptive process towards which human beings are oriented (Deci & Ryan, 2002), it would be likely that in adapting to this environment, some girls at least would successfully begin to internalize these initially external controls.

While departing from the tenets of SDT, past quantitative work has reported similar positive findings for introjected regulation in young women. For example, a positive and moderately strong relationship between basic need satisfaction and introjected regulation was found in a female sample of school PE students that was not significant in males (Standage, Duda & Ntoumanis, 2005). Female participants retained the positive affective and cognitive outcomes indicative of the satisfaction of basic psychological needs, despite reporting higher introjected regulation. In a further study in a college-aged sample of older adolescents, introjected regulation was positively associated with self-reported exercise behaviour in young women, but was a negative predictor of self-reported exercise in young men (Wilson, Rodgers, Fraser & Murray, 2004). The girls in the present sample reported being more active than would be expected within a general female population at this age (Caspersen et al., 2000). Thus, consistent with past research, the present findings suggest that introjected regulation may, at least in the short-term, be a facilitative form of regulation in female adolescents and young women. However, given the conflict between these findings and theoretical principles, future longitudinal research is warranted. In particular it would be useful to examine whether the internal sanctions that characterise introjected regulation have negative implications for long-term exercise participation (Standage et al., 2008), even when coupled with strong intrinsic levels of motivation.

The second theme to emerge related to the different responses that participants gave to questions that were positively (“why do you take part?”) or negatively framed (“why would you feel bad if you didn’t exercise?”). Participants commonly reported that their engagement in sport and exercise was motivated by positive reasons, such as enjoyment, fitness, and socialising. Factors that deterred them from missing exercise sessions represented negative threats, such as fear of weight gain (even for those not currently considering themselves to be overweight), and the desire to avoid letting others down. Related to the SDT framework of motivation (Deci & Ryan, 1985, 1991), reasons for actively engaging in sport and exercise were more likely to represent intrinsic (i.e., for the inherent pleasure of the activity) and identified motives (i.e., for personally valued outcomes, e.g., for fitness), which are both

considered to be autonomous forms of regulation. The reasons participants provided for not dropping out of exercise more closely reflected introjected regulation, indicating that continued participation can be due to self-controlled feelings that one should do so, or so as to avoid guilt or social disapproval. Thus, although the present sample were selected for displaying high levels of introjected regulation, more self-determined reasons for participation were also highly prevalent. Such findings are aligned with the premise within SDT that individuals typically have multiple and simultaneous motives for behaviour that collectively determine the overall quality of motivation (Ryan & Deci, 2007).

Given that the present sample were found to be more active than is expected at this age group, the present findings could indicate that introjected regulation has an advantage in supplementing more self-determined regulations (i.e., a buffering effect). For instance, if the basis for each form of motivational regulation is different, introjected regulation may serve to keep adolescents engaged in sport and exercise on occasions when they may have chosen not to continue if operating from self-determined motives alone. Referring to the example of the female horse rider (Participant 7) presented in Theme 2, it may be that her anxieties related to exercising in social settings would discourage her from taking part in alternative sports if her preferred activity for which she is intrinsically motivated (i.e., horse riding) was no longer available. In this case, could the strong introjected regulation she reported to stem from fear of weight gain provide sufficient impetus to prompt her to explore and persist at potential enjoyable alternatives?

Previous work investigating the relative importance of self-determined versus controlling forms of motivation has largely concluded that it is the absolute value of self-determined regulation that is important in determining outcomes, rather than their relative strength in relation to controlled regulations (Williams, Cox, Hedberg & Deci, 2000). However, interest is now increasing in assessing more complex models of the simultaneous multiple motives that individuals demonstrate towards any given behaviour (Ryan & Deci, 2007). Indeed, although intrinsic motivation is the most self-determined type of regulation, and as such, is strongly associated with behavioural persistence, it is suggested that it may

not be sufficient to sustain behaviour when competing with the practical demands of adult life (Mullan & Markland, 1997). The present findings contribute to this debate, suggesting that research be directed into exploring the potential for introjected regulation to boost, sustain, or buffer the effects of self-determined forms of motivation on behaviour in real world settings.

Limitations

A limitation of the present study is that only a short period of time was spent with the interviewees. While all participants had previously met the interviewer, and time was taken at the start of the interview to put students at their ease, the responses gained are likely to differ from those that might have been provided at further meetings, or by a more familiar interviewer. A second interview may have improved confidence in the study findings. A second limitation was the use of IPA to elicit information in order to interpret this according to a pre-established theory. While IPA is an interpretive approach that fits well to the extraction of themes in response to a particular line of enquiry, it is intended for use in extracting themes within the data, rather than as a definitive way of answering a more specific research question. As such, the scrutiny of the themes and interview scripts for evidence of introjected regulation and internalization should be interpreted with caution. The implications represent one interpretation of factors which may underpin introjected regulation for these individual participants, and should not be generalised to the group as a whole. As such they are intended to provide an impetus for stimulating further work, rather than to be conclusive in their own right.

Conclusions

Within the present sample, introjected regulation was found to be associated with highly adaptive levels of physical activity, and to co-exist with more self-determined (identified and intrinsic) motivation for sport and exercise without apparent negative effects. This finding is consistent with research that suggests that introjected regulation can be an adaptive form of motivation in the short term (although not in the long-term; Pelletier et al.,

2001), and a necessary stage of the process of the internalization of behavioural motivation (Deci et al., 1994). While there was evidence, particularly among girls, to suggest that the observed positive impact of introjected regulation may have reflected the onset of internalization, this was not the case for all participants. In many boys within the sample, introjected regulation appeared to contribute to sustaining activities associated with the attainment of social value, in a social climate in which taking part in sport may be a prerequisite to peer acceptance. Introjected regulation was commonly based on different reasons for exercise than were more self-determined regulations, and it is suggested that future work is carried out to investigate whether there are conditions when this may provide a benefit to behavioural maintenance, rather than inevitably compromise self-determined motivation over time.

The present findings suggest a number of practical applications. First, they confirm the importance of attending to gender differences in how exercise is promoted and incorporated into adolescent daily life. Much of the difference between the reasons for introjected regulation between gender groups was attributed to differences within the social exercise environment, with the social environment appearing to have almost an opposite effect for each. Social factors encouraged participation in boys, yet failed to support, and in some cases discouraged participation even within active females. Ignoring differences between gender groups, and the diverse barriers to exercise participation faced by each, would be likely to lead to interventions which may support only one gender in increasing or maintaining their exercise levels, while being of very little assistance, or potentially counter-productive for the other. Such effort could be partial, wasteful of resources and ethically questionable.

A second application of the present findings is in providing a better understanding of the process of internalization, the promotion of which is often the target of interventions designed to focus on long-term. Specifically, the present findings suggest a useful research direction in investigating the relative contributions to continuing exercise participation that are made by factors that motivate the uptake of exercise, compared with those that deter

drop-out. The results of such work could inform us of the utility in compiling motivational profiles of individuals as a means of identifying which adolescents may be at risk of dropping out of sports and exercise on leaving school (e.g., those relying on only intrinsic forms of motivation, or those relying on external sources of confirmation of ego-enhancement and self-worth) . Each of these areas of research could have valid contributions to make in indicating how theoretical constructs can be operationalised and more effectively targeted to promote the internalization of fitness oriented exercise behaviour.

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Appendix: Interview Schedule*

1. First of all, can you tell me what types of sport or exercise you take part in, in and out of school?
2. In your own words, could you tell me what you think is the reason or reasons you normally take part in exercise, and what makes you put in effort, or decide not to bother too much? If there are different reasons for different sorts of exercise, say why you put effort in during PE compared with outside PE, then please tell me about each one separately.
3. Are there some times or places that you are more keen to do exercise than others? If so, what is it that makes the difference?
4. Thinking back a few years to when you started at this school, can you tell me whether you did more or less exercise than you do now?
Do you think you enjoyed it more, or less, or the same as you do now?
5. What do your friends think of people who do a lot of exercise?
Does what they think effect how much exercise you take part in?
6. Looking back at the answers you gave on the questionnaire, do you agree that your answers would be more or less the same today?
7. If you do feel a bit bad about yourself when you don't do exercise, in what way do you feel bad in particular?
8. Is it ever the case that you feel you'd be letting people down, like friends or parents if you didn't carry on doing the sport and exercise you currently do?

* additional prompts were also used in response to participant comments to allow individual participants to expand on the areas most relevant to their sport and exercise participation.