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Exerciser stereotypes: Perceptions and influences on exercise related cognitions

by

Sean Michael Stolp

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Examining Committee

Dr. Tanya Berry, Faculty of Physical Education and Recreation

Dr. Wendy Rodgers, Faculty of Physical Education and Recreation

Dr. Gordon Walker, Faculty of Physical Education and Recreation

Dr. Taka Masuda, Psychology

Abstract

The current study identified eight distinct exercise stereotypes (athletes, runners, older adults, jocks, weightlifters, judgmental girls, overweight individuals, people who do yoga) through a pilot study. An adapted version of the prototype willingness model was then used to determine whether differences exist between exercisers' and non-exercisers' ratings of the eight various exerciser stereotypes. No significant differences were found, which further supports the positive exerciser stereotype. The adapted version of the PWM had large proportions of explained variance. MANOVA analyses showed that overweight individuals and weightlifters differed significantly in their opinions of other exercisers. Overweight individuals had negative ratings towards jocks, athletes and judgmental girls and weightlifters showed negative ratings of yoga participants. Both of these exercisers may benefit from a fitness center absent of these respective exercisers.

Table of Contents

List of Appendices

List of Tables

List of Figures

Nomenclature

BI	Behavioural Intentions
BW	Behavioural Willingness
GLTEQ	Godin Leisure Time Exercise Questionnaire
HBM	Health Belief Model
PMT	Protection Motivation Theory
PWM	Prototype Willingness Model
SCM	Social Cognition Model
SCT	Social Cognitive Theory
SE	Self-Efficacy
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behaviour

Chapter 1 - Introduction

Currently in Canada low levels of physical activity are putting a great strain on population health. As of 2002 it was estimated that 53.5% of the Canadian population was inactive and 14.7% were obese (Katzmarzyk & Janssen, 2004). Obesity has been linked to a number of serious health threats and the health benefits of participating in physical activity have been well documented in reducing these threats. Physical activity can aid in the prevention of cardiovascular disease, cancer, diabetes, hypertension and osteoporosis, as well as lowering population levels of obesity (Erikssen, Liestol, Bjornholt, Thaulow, Sandvik & Erikssen, 1998; Erikssen, 2001; Warburton, Nicol & Bredin, 2006). One way in which levels of physical activity can be increased is through the use of an exercise facility.

1.1: The Exercise Facility

One UK audit found that 14% of the British population belonged to a fitness center (Citizens Audit, 2006). This is of note considering that the UK population, much like the Canadian population, reports low levels of physical activity (Katzmarzyk & Jansen, 2004; Allender, Foster, Scarborough & Rayner, 2007). This implies that a substantial proportion of those who are physically active are members of a fitness center. While there has been some research conducted on individuals that attend a fitness center, mostly body builders, this research largely overlooks the average exerciser (Crossley, 2006). The lack of research within fitness centers presents an important area for future study,

considering that a large number of the people who do exercise are members of a fitness center.

The fitness center creates a unique environment, one in which a variety of people attend and interact with each other, while still focusing on diverse goals. Research suggests that in any social situation the people around us have an effect on our behaviour (Gilovich, Keltner & Nisbett, 2006; Chartrand & Bargh, 1996). Therefore, an exercise facility should be no different, yet we are still unaware of the possible effects that people may have on each other within this setting. This means that there are a considerable number of active individuals attending fitness centers and the many social interactions that occur within in these facilities have yet to be examined. The social interactions that occur amongst these exercisers deserves further attention as they may have the ability to influence one's stereotype formation and attitudes towards other types of stereotypical exercisers and can possibly affect an individual's cognitions to exercise.

1.2: Stereotypes

Stereotypes are often viewed as one of the most essential psychological processes, as they have the power to determine the course of social interactions (Hamilton & Sherman, 1994; see appendix 1). Definitions of what a stereotype is have changed greatly over time (Rettew, Billman & Davis, 1993) but are commonly defined as the beliefs about the characteristics, attributes and behaviours of a member of an out-group (Hilton & von Hippel, 1996). An out-group member can be categorized as any individual belonging to a group of which

you do not consider yourself to be a part. Any group that you consider yourself to be a part of would then be called an in-group; individuals rate those groups that they belong to more positively than those groups that they do not belong to (Hamilton & Sherman, 1994). These stereotypical beliefs, which are typically based on very little information, allow us to differentiate between various out-groups, providing individuals with a unique set of attributes that define various out-groups and their members (Ford & Stangor, 1992). The idea that a group of persons can represent a meaningful social identity is central to stereotyping. If an individual were perceived to not belong to any social unit then there would be no basis for forming a stereotypical representation about this individual. This process of forming stereotypes is what enables us to separate our own in-group from out-groups and other various out-groups from each other (Hamilton & Sherman, 1994).

1.3: The Positive Exerciser Stereotype

The fitness center environment and the physical activity domain are full of stereotypes (Harrison, 2001). There has been considerable research examining exercise based stereotypes and it has been found that people who are described as physically active and fit are rated more positively than those who are described as not being regular exercisers and being unfit (Hodgins, 1992; see appendix 2). These findings were replicated among both males and females across not only physical attributes, but also personality attributes (Martin, Sinden & Fleming, 2000). These authors found exercisers to have greater self-control and were rated to be harder workers than non-exercisers and control groups. Furthermore,

exercisers were perceived as being braver, kinder, friendlier, happier, neater, more independent, more intelligent, more sociable and to have more friends. Martin Ginis and Leary (2001) expanded on this study and found that even overweight women received the same positive stereotypes when described as an exerciser. Research has also shown that even those individuals who participate in unstructured forms of physical activity receive the same positive stereotype, in both North American and Swedish populations (Martin Ginis et. al., 2003; Lindwall & Martin Ginis 2006).

A recent study focusing on the shared positive exerciser stereotype categorized non-exercisers into two groups: those who intended to exercise and those non-exercisers with no intentions to exercise (Rodgers, Hall, Wilson & Berry, 2009). It was hypothesized that non-exerciser non-intenders would not share the positive exerciser stereotype as strongly as non-exerciser intenders because of non-exerciser non-intenders not sharing the possible in-group biases of non-exerciser intenders. The researchers found that the positive exerciser stereotype extended across both non-exerciser intenders and non-exerciser non-intenders and that the lack of difference between the two groups could not be accounted for by age, children at home, or employment status, which are commonly cited barriers to exercise. These findings add to the depth and strength of the positive exerciser stereotype, yet still classify all exercisers into one group.

The majority of exerciser stereotype research focuses on the differences between non-exercisers and exercisers and has yet to fully explore the area of exerciser sub-types. This area of research is important when we consider the

many different possible sub-types of exercisers interacting with each other in a shared environment and the possible effects that these individuals can have on each other. Even the mere presence of others in the environment can increase arousal levels of an individual (Monteil & Huguet, 1999; Zajonc, 1968) causing either a decrease or increase in performance of a specific skill. In response to any threatening social situation, an individual is more likely to activate stereotypes in order to feel better about themselves through downward social comparison of the threatening individual (Crocker & Luhtanen, 1990), reinforcing the stereotyping process.

The assumption that all exercisers can be classified into one group is problematic, as it is possible that an exerciser could be categorized within one of many different exerciser subtypes. The difference in an individual's attitudes towards a runner and a weightlifter, for example, could be quite substantial. Furthermore, it is quite probable that the defining of out-group members occurs within the exercise environment, in order to separate certain groups from each other. This would imply that if all exercisers do not share the same fitness goals, then exercisers could also be stereotyping to separate themselves from other exercisers. Further non-exercisers could also be perceiving exercisers as belonging to different exerciser sub-type groups.

1.4: Social Cognition Models

There is a gap in the research that could be filled by examining if different exerciser stereotypes exist and by investigating whether or not the positive

exerciser stereotype applies to all exerciser stereotypes. The current study looks to expand on the research previously conducted on exerciser stereotypes. This will be accomplished by examining what different exerciser stereotypes exist, if the positive exerciser stereotype applies to all types of exercisers, and if these exerciser stereotypes can have any effects on others exercise related cognitions.

One way to accomplish this is to use a social cognition model (SCM). SCMs make use of variables that are relevant to behaviour change and applicable to the fitness center environment. There are several SCMs each with value, however no single theory can account for all the factors that might influence behaviour change (Glanz, Rimer & Lewis, 1997). For instance, the theory of planned behaviour (TPB) is widely used in the prediction of exercise behaviour, yet meta-analysis shows the theory accounts for 29% of the explained variance in behavioural intentions (Armitage & Conner, 2001). Social cognitive theory (SCT) is another popular model in the literature and meta-analysis conducted on the relationship between self-efficacy and health practices have found similar proportions of explained variances (Holden, 1991; Yarcheski, Mahon, Yarcheski, Cannella, 2004). Since both of these popular models cannot account for all health behaviour, it may be best to incorporate factors from several models.

There are multiple factors that must be accounted for when attempting to predict health behaviours. The prototype willingness model (PWM) makes specific use of social images, or stereotypes, within its constructs making it one of the more suitable social cognition models to address the research questions of:

1. Does the positive exerciser stereotype apply to all different types of exercisers? Specifically, is stereotype perception rated positively towards all different types of exercisers?

2. **Can certain exerciser stereotypes influence an individual's attitudes, self-efficacy, behavioural willingness and behavioural intentions to exercise in a fitness center environment?**

1.5: The prototype willingness model

The PWM (see fig. 1) was developed in an attempt to try to predict the risky behaviours of adolescents that are not entirely preceded by rational forethought. The PWM has three assumptions: 1) adolescent's health risk behaviours are volitional but are often done without prior intention or rational thought; 2) health risk behaviours are social events for adolescents; 3) because of the social nature of these behaviours there are social images that are associated with those individuals who act out these behaviours (Gibbons, Gerrard, Blanton & Russell, 1998). The PWM is a dual approach model with a reasoned action path and a social reaction path.

1.5.1: The reasoned action path

The reasoned action path of the PWM follows most SCMs and predicts behaviour through individual's behavioural intentions, which is preceded by a systematic and deliberate thinking process (see figure 1). The reasoned action path has adopted it's three constructs, attitudes, subjective norms and behavioural

intentions from the theory of reasoned action (TRA; Gerrard, Gibbons, Houilihan, Stock & Pomery, 2008).

1.5.1.1: Attitudes

Attitudes are an individual's overall positive or negative evaluation of the behaviour in question. Attitudes are the evaluations of the attributes or outcomes of a certain behavioural performance (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). In the fitness center context an individual can form attitudes towards the behaviours performed by other exercisers who conform to a stereotype, which in turn can have an influence on one's behavioural intentions to perform the behaviour.

1.5.1.2: Subjective Norms

Subjective norms represent the perceived social pressures one feels from important others to perform the behaviour in question. The concern for social approval then motivates behavioural action through social rewards or punishments (Hale, Householder & Greene, 2003; Sheppard, Hartwick, & Warsaw, 1988). Individuals important to the participant can have their own positive or negative attitudes towards the behaviours performed by exerciser stereotypes and participants can use this information when deciding if they should or should not exercise with a certain exerciser stereotype.

1.5.1.3: Behavioural intentions

Behavioural intentions in the PWM are influenced by an individual's attitudes and subjective norms. Behavioural intentions are believed to capture the motivational factors that influence an individual's decisions to perform a specific behaviour (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Hale et. al., 2003; Sheppard et. al., 1988). Assessing behavioural intentions will provide information on how likely an individual is to exercise with one of the exerciser stereotypes.

1.5.2: The social reaction path

The PWM differs from other SCMs in that it states that some behaviours are not preceded by a systematic and deliberate thinking process, and instead are more the result of a social situation that facilitates the behaviour in question (Gerrard et. al., 2008). Because of this the PWM has included a social reaction path to the model. The social reaction path is comprised of prototype-perception and behavioural willingness.

1.5.2.1: Prototype-Perception

Prototypes are very similar to perceived stereotypes. A prototype-perception represents attributes associated with the behaviour performed by the prototype as well as a consequence produced by that behaviour. Therefore prototype-perception consists of more than a description of the physical appearance of the individual (Gibbons et. al., 1995; Gerrard et. al., 2008). Prototypes are an image held by an individual of the typical person who belongs

to a group or partakes in certain behaviours (Barton, Chassin, Presson, &
Sherman, 1982; Gibbons & Gerrard, 1995). In comparison, a stereotype is
associated with attitudes and judgments towards a group of people and less
concerned with behavioural outcomes compared to prototypes. Therefore,
prototypes provide us with a systematic classification of individuals that have
certain characteristics or traits in common with each other. Prototype images do
not have to be attractive or favourable in any sense, instead it is the individual's
perceived favourability of the image that determines willingness towards the risk
behaviour (Thorton, Gibbons & Gerrard, 2002). The more favourable the
prototype perception, the more willing an individual is to participate in the
behaviour or the more interested they are in the associated behaviour (Gibbons et.
al., 1995). The more favourable a person rates an individual in the fitness center
context, the more willing they would be to exercise in the same environment as
that individual.

1.5.2.2: Behavioural willingness

Although part of the social reaction path, behavioural willingness is also
influenced by the reasoned action path, consisting of attitudes and subjective
norms. However, the strongest predictor of behavioural willingness is prototype
perception (Gerrard et. al., 2008). The PWM was developed to address risky
behaviour and once in a risky behaviour situation, it is generally an individual's
willingness towards the behaviour that determines their behaviour (Gerrard et. al.,
2008). For example, SCMs such as the TRA have been successful at predicting

intentions to use contraceptives but tend to have trouble when predicting actual sexual and contraceptive behaviour due to the emotional nature of this behaviour. Therefore, the use of behavioural willingness creates a hypothetical scenario that asks how a participant might feel about a certain situation. By answering a question addressing a participants' willingness to perform a behaviour, participants are not committing themselves or admitting interest in a certain behaviour; rather participants are reporting a perception of the consequences associated with the behaviour (Gibbons, Gerrard, & McCoy, 1995). On the other hand behavioural intentions are a measure of what participants *plan* to do (do you intend to drink on Friday?). Behavioural willingness, in contrast, asks given a certain social situation what an individual *would* do (given the opportunity, are you willing to drink on Friday?). Since both behavioural willingness and behavioural intentions are predictors of actual behaviour, they are correlated with each other; yet each predicts behaviour independently of each other (Gibbons, et. al., 1995). Because of the very social nature of the fitness center setting assessment of behavioural willingness to exercise with certain exerciser stereotypes may provide more accurate information than behavioural intentions.

1.5.3: Past behaviour

The PWM incorporates past behaviour as another construct within the model which influences both the reasoned action and social reaction paths. Past behaviour has been included within the PWM, as past behaviour can have an influence on individual's attitudes, subjective norms, prototype perceptions,

behavioural intentions and behavioural willingness (Gerrard et. al., 2008; Bentler & Speckart, 1981; Gerrard, Gibbons, Benthin & Hessling, 1996; Bagozzi, 1981). It has also been argued that behaviour can be largely determined by one's previous actions as opposed to the rational thoughts addressed in SCMs (Conner & Sparks, 2005). This is because past behaviour has been shown to be the best predictor of behaviour in a number of studies (Conner & Sparks, 2005). In studies completed by Conner and Armitage (1998) it was found that on average past behaviour increased the proportion of explained variance in behavioural intentions by 7.2 percent.

1.5.4: Additional constructs

In an attempt to increase the proportion of explained variance by the PWM, descriptive norms, perceived behavioural control and self-efficacy have also been added to the model.

1.5.5: Descriptive norms

Descriptive norms are an individual's perceptions of significant others' own behaviour towards the domain in question (Rivis & Sheeran, 2003). Individuals use the information obtained from close others when making decisions concerning how they themselves should act and to determine what the appropriate or acceptable actions are in relation to the behaviour in question. The inclusion of descriptive norms in one study found that descriptive norms added five percent to the explained variance of the original TPB variables (Rivis &

Sheeran, 2003). Subjective norms is an injunctive social norm because it is concerned with an individual's perceived social pressure. This social pressure then motivates individuals to perform the behaviour through a desire to gain approval from significant others (Rivis & Sheeran, 2003). On the other hand, descriptive norms refer to significant others' own attitudes and behaviours towards the domain in questions (Rivis & Sheeran, 2003). This information is then taken into consideration when the individual is thinking about performing the behaviour. For example, if all of my friends participate in the behaviour, then it must be a reasonable thing for me to do as well (Rivis & Sheeran, 2003).

The use of descriptive norms in research within the fitness center context may provide better social influence information than subjective norms. Because exercise is rated so positively, when using subjective norms the social pressure to do any exercise at all may be quite positive, regardless of whom this exercise is performed with. The use of descriptive norms, by specifically asking if close individuals fit one of the exerciser descriptions, may be able to pick up the subtle social differences between exercising with one exerciser stereotype compared to another. For example if an individual has two friends who are runners and no friends who are weightlifters, we can say that social pressure to exercise with a runner would be higher than to exercise with a weightlifter.

1.5.6: Perceived behavioural control

PBC is concerned with an individual's perceived access to the resources and opportunities necessary to successfully perform a behaviour (Conner &

Sparks, 2005). PBC takes into account the factors that can either facilitate or inhibit behaviour. These factors can be both internal (personal skills, abilities, emotional arousal) and external (opportunities, available resources, physical barriers). It is generally thought that those individuals who believe that they have the necessary resources and opportunities available to them will have high PBC. High PBC will positively influence behavioural intentions. Within the fitness center context PBC is necessary to assess because some participants may believe that they have more control over exercising with certain exerciser stereotypes than others.

1.5.7: Self-efficacy

Perceived self-efficacy is concerned with an individual's beliefs in their ability to perform a behaviour in the face of barriers. Bandura (1997) proposed that self-efficacy is the most important prerequisite for behaviour change, because it can predict the amount of effort that an individual will put forth when faced with barriers. Self-efficacy can be enhanced through four different sources, personal mastery, vicarious experiences, verbal persuasion and emotional arousal. Personal mastery is previous performance of the behaviour. Vicarious experiences occur by observing other like people performing the behaviour. Verbal persuasion is being convinced by others that the individual can perform the behaviour. Emotional arousal can also have an influence on self-efficacy, for example an individual who is in an efficacious mind frame will act differently then when they are not in an efficacious frame of mind (Bandura, 1997). Within the fitness center

context it may be possible that exercising with some exercise stereotypes may enhance self-efficacy more than others. This can than influence an individuals' behavioural intentions to exercise with that exerciser stereotype.

1.6: The adapted PWM

This adapted PWM (see fig. 2) will aid in answering the research questions addressed above. Yet, before these questions addressing exerciser stereotypes can be examined, we must first determine whether or not various exerciser stereotypes exist. If exerciser stereotypes do exist, then in order to be classified as stereotypes they must be different from each other otherwise they should be classified as exerciser sub-types, which would share some qualities. In order to address this a pilot study was first conducted to assess if exerciser stereotypes do exist and if they are indeed separate from each other.
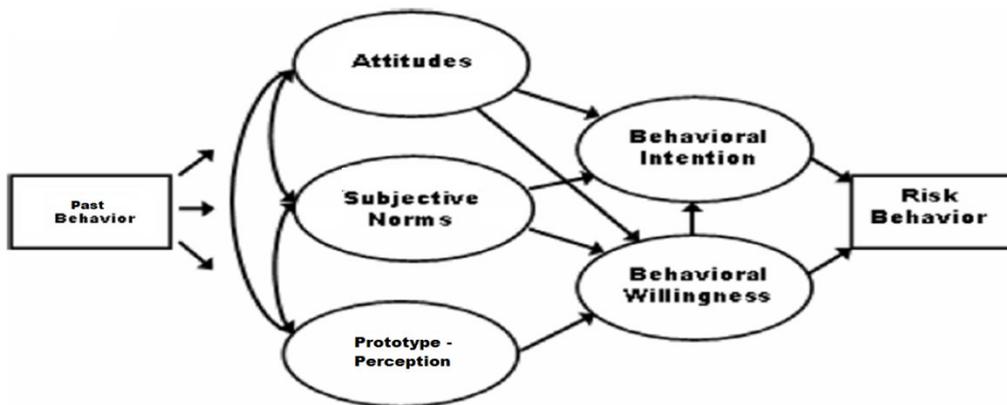
Fig. 1: The prototype willingness model
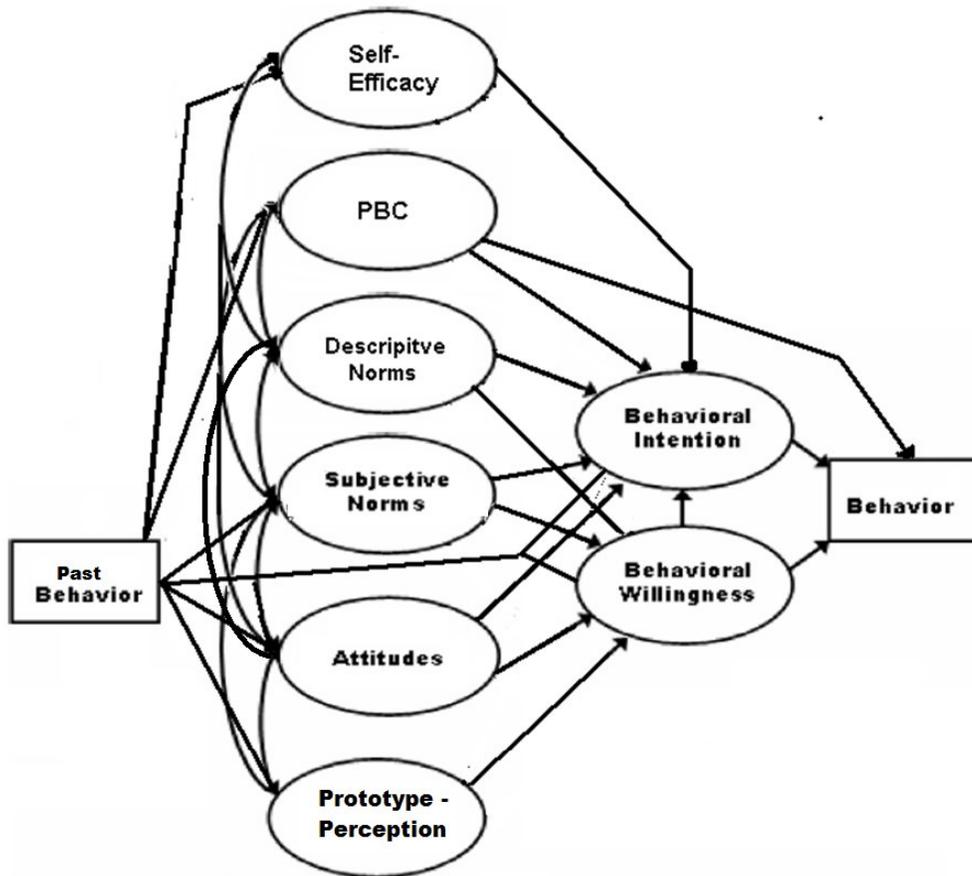
Fig. 2: Adapted prototype willingness model

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Chapter 2 – Pilot Study

In order to identify the different types of exerciser stereotypes that exist, a pilot study was conducted with the goal of not only identifying various types of exercisers, but to also identify the descriptors associated with these types of exercisers. These descriptors can then be used to give participants a depiction of the exerciser stereotype.

2.1: Pilot Study Methods

Permission was received from a professor to collect data within a first year classroom containing approximately two hundred and seventy-five students from various areas of study. Questionnaires were distributed within the classroom and two hundred and nine were returned completed. An additional forty questionnaires were also completed by participants on their way to or from the university fitness center bringing the total number of participants to two-hundred and forty-nine. Seventy-four males and one-hundred and thirty-three females participated in the study with no gender data from forty-two participants and no age data collected.

2.2: Pilot Study Measures

Participants were asked, in an open ended question, to identify their favourite type of physical activity and, if they attended a fitness center, to list which fitness center. These data were collected to determine if the participants

themselves could be classified into one of the exerciser stereotype groups,

allowing for control of any in-group biases. Participants were then asked to "list

as many different types of exercisers that you can possibly think of" with five

blank spots to fill in. Following the list of exercisers, participants were then asked

to "please list five describing words" for each one of the exercisers that they

listed.

Individuals were classified as either active or inactive through the use of

the Godin leisure time exercise questionnaire (GLTEQ). The GLTEQ was used in

order to calculate weekly metabolic equivalent scores (METS) of individuals

(Godin & Shepard, 1997; see appendix 4). The GLTEQ is a scale that rates how

often participants engage in leisure-time exercise during the week (Godin &

Shepard, 1997). Individuals answer three separate questions pertaining to how

much strenuous, moderate and mild physical activity they do in their spare time

over a week. These values are then multiplied by their estimated value in METs

(nine, five, and three; Garcia Bengoechea, Spence & McGannon, 2005). METS

scores were then used to classify participants as either active or inactive. Male

participants receiving 38 METS a week or more and females receiving 35 METS

a week or more were classified as active. Male participants receiving less than 38

METS a week and females receiving less than 35 METS a week were classified as

inactive (Garcia Bengoechea et. al., 2005). These cut-off values are equivalent to

an expenditure of 2,000 kcals a week (Elosua, Garcia, Aguilar, Molina, Covas &

Marrugat, 2000). Energy expenditure at this level has been shown to reduce the

risk of heart disease (Paffenbarger, Wing & Hyde, 1978).

2.3: Pilot Study Results

Of the 249 participants that filled out questionnaires, 243 provided valid exerciser stereotypes. Valid responses were the actual listing of a type of exerciser, responses that were not considered valid typically listed types of exercises, as opposed to the stereotypical type of people who do these exercises. Participants were than classified as either active (n = 161) or inactive (n = 46), based on their responses to the Godin Leisure Time Exercise Questionnaire (GLTEQ). These participants provided us with a total of 620 responses, which covered a wide range of exercisers; 167 different exerciser names were given. By examining the descriptive words associated with each of these exercisers we were able to classify some of these different exerciser names into larger encompassing groups. Through this coding were able to identify eight commonly mentioned exercisers: Runners (N = 67), weightlifters (N = 113), athletes (N = 71), yoga (N = 22), judgmental girls (N = 10), jocks (N = 22), elderly (N = 14) and overweight individuals (N = 23). The remaining responses were either invalid responses, as defined above, or were responses that were not repeated enough to be included in the study (N = 278). For each of the exercisers the descriptive words given were then counted and the most commonly cited were compiled. The most commonly cited descriptive words are as follows: *Athletes*: Fit, focused, determined, competitive, healthy and motivated. *Judgmental girls*: No sweating, judgmental, tight clothes, makeup. *Runners*: Fit, lean, endurance, healthy. *Weightlifters*: Bulky, intimidating, male and muscular. *Older adults*: Healthy, happy and fit.

Yoga: Relaxed, flexible, spiritual and females. *Jocks*: Male, competitive and show-off. *Overweight individuals*: Unhealthy, self-conscious and overweight.

By compiling the most commonly cited descriptive words for each exerciser we were then able to use these words to create descriptions of each of the exercisers. The descriptions are as follows (refer to appendix 6): *Weightlifter:* "Jeff is a weight lifter. Weight lifting makes Jeff bulky and muscular making him intimidating." *Runner:* "Sam is a runner with a lot of endurance. Sam maintains good health and fitness and stays lean through running." *Athlete:* "Alex is a competitive athlete and is very focused and determined when training. Alex is motivated, fit and healthy." *Obese:* "Taylor is overweight and is trying to lose weight through exercise. Taylor is unhealthy and self-conscious." *Elderly:* "Terry is 64 and exercises to keep healthy. Terry enjoys retirement and all types of fitness activities." *Jocks:* "Brian is a jock and is intense about playing competitive sports. He is kind of a show-off and thinks that he is good at sports." *Yoga:* "Sara is relaxed and yoga gives her good flexibility. Sara enjoys the spiritual aspect of yoga." *Judgmental girls:* "Megan puts high value on appearance and is judgmental. When Megan exercises she wears makeup and tight fitting clothing and does not sweat."

The names used in the descriptors were based upon the gender assignment given within the descriptive words for each exerciser. Those stereotypes that had no gender associated with them, runners, athletes, overweight individuals and older adults, received gender-neutral names such as Sam, Alex, Taylor and Terry, respectively.

2.4: Pilot study discussion

Pilot study results revealed eight exerciser stereotypes commonly reported by participants in the pilot study: athletes, jocks, weightlifters, older adults, overweight individuals, yoga participants, runners and judgmental girls. Descriptors for these eight exercisers would also suggest that these exercisers are more exerciser stereotypes than exerciser sub-types as the descriptors separate these exercisers from each other as each stereotype has their own focuses within the fitness center setting. Although this list may not be reflective of all the possible types of exercisers that exist, it does allow us to focus on the research questions addressed by the main study.

Chapter 2 - References

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Chapter 3 – Main Study

Results from the pilot study indicate that at least eight exerciser

stereotypes exist. In order to address the research questions of this study an

adapted version of the PWM will be used. The PWM's use of prototype-

perception will be well suited to specifically address participant's evaluations of

these eight stereotypes. Attitudes, subjective and descriptive norms, self-efficacy,

perceived behavioural control and past behaviour will also aid in the prediction of

participants' behavioural willingness and behavioural intentions to exercise in the

same environment as these eight exerciser stereotypes. These variables will make

it possible for the study's hypothesis to be assessed.

3.1: Hypothesis

Hypothesis 1: Attitudes, subjective norms, self-efficacy, past behaviour

and prototype perception will all be positively correlated with behavioural

willingness and behavioural intentions (Gerrard et. al. 2008). Attitudes and

subjective norms have been shown to directly influence behaviour both within the

TRA and the PWM (Conner & Sparks, 2005). In addition, prototype perception

has shown to be directly correlated to behavioural willingness (Barton et. al.,

1982; Burton, Sussman, Hansen, Johnson, & Flay, 1989; Grube, Weir, Getzlaf, &

Rokeach, 1984; Gibbons & Gerrad, 1995).

Hypothesis 2: The adapted PWM will be able to predict behavioural

willingness and behavioural intentions towards exercising with each of the eight

stereotypes, as the model should be applicable to any behaviour that has a recognizable image associated with it (Gibbons & Gerrard, 1995).

Hypothesis 3: The positive exerciser stereotype will not be seen across all exercisers. Pilot study data suggests that prototype perception towards the eight stereotypes should vary, with athletes generally being the most positively rated and weightlifters being the most negatively.

Hypothesis 4: Exercisers and non-exercisers will not share the same attitudes, self-efficacy, behavioural willingness and behavioural intentions towards the eight exerciser stereotypes, whether positive or negative. Research has shown that both exercisers and non-exercisers hold the positive exerciser stereotype (Martin, et. al., 2000; Martin Ginis & Leary, 2001; Rodgers, et. al., 2009). Breaking exercisers apart into eight different exerciser stereotypes, as has been done with this study, could change this.

3.2: Participants

The number of participants recruited was based upon a power analysis conducted on subjective norms data that showed in order to achieve a power of .8 at an alpha level of .01, 181 subjects would be needed (Lenth, 2006). Further power analysis conducted on attitudes data showed that to achieve a power of .8 at an alpha level of .01 we would need 92 subjects (Lenth, 2006).

3.3: Recruitment

Participants were recruited from either the classroom setting or the fitness center setting. For those participants recruited in the classroom the researcher first described the study to the entire class along with all relevant ethics information (see appendix 5). After this information was delivered, the researcher handed out the questionnaires to the class and remained on hand to answer any possible questions (see appendix 6). Participants in fitness centers were recruited by the researcher as they entered or left the facility. The study was described to the participant along with all relevant ethics information.

In total, 203 participants were recruited for this study. Of these 203 participants (see table 3.1), 103 were from classrooms at the University of Alberta and 100 were recruited from nine different Edmonton fitness centers. Classrooms used for recruitment were two first year health classes, one first year math class and one first year sociology class.

Table 3.1

Age, gender and N values of individuals who self-identified as one of the exerciser stereotypes

	N	Age Mean(SD)	Gender		
			M	F	N/A
Total participants	203	26.50(8.52)	101	85	17
Athlete	46	26.50(7.47)	32	11	3
Runner	39	26.80(8.29)	19	19	1
Weightlifter	19	31.47(10.25)	16	1	2
Yoga	18	25.33(7.75)	3	13	2
Overweight	14	24.86(4.42)	2	11	1
Jock	9	23.12(4.32)	7	1	1
Elderly	4	44.50(20.21)	4	0	0
Judgmental Girls	3	20.00(2.00)	1	2	0

M = male, F= female, N/A = unidentified sex

3.4: Measures

Image vividness was assessed by asking participants "How easy or hard is it for you to picture (stereotype)?" (1= *hard* to 7 = *easy*; Thornton, Gibbons & Gerrard, 2002).

Attitude measures were adopted from the Attitudes Towards Exercise Settings Questionnaire (Crawford & Eklund, 1994). Participants were asked to rate the following statements: "(I think that (stereotype) would be a good group to exercise with (1 = *not at all* to 7 = *extremely)*." "I would be comfortable exercising with a(n) (stereotype) (1 = *not at all* to 7 = *extremely)*." "I would enjoy exercising with a group of (stereotype) (1 = *not at all* to 7 = *extremely)*." "I would feel out of place exercising beside a(n) (stereotype) (1 = *not at all* to 7 = *extremely)*." Cronbach's alphas for attitudes for each of the eight stereotypes ranged from .64 (yoga participants) to .77 (jocks), the average being .72. Because of yoga participant's low Cronbach's alpha we must be cautious when we interpret findings associated with yoga participant's attitudes.

Subjective norms were assessed with two variables: people's perceptions of pressure from important others to exercise or not with the various stereotypes which was then multiplied by the person's motivation to comply with those important others. "Most people in my social network would approve if I exercised with a(n) (stereotype)" (1 = *strongly disagree* to 7 = *strongly agree)*.

Descriptive norms were assessed by asking "Of the five people you know best of your age, how many would you consider to be a(n) (stereotype)?" This was rated on a five point likert scale (*none* to *five*) as used by Rivis et. al. (2006).

Self-efficacy was assessed by asking "How confident are you that you could complete your planned exercise as usual with a(n) (stereotype)?" (1 = *not at*

all confident to 7 = *completely confident*; Rodgers, Wilson, Hall, Fraser & Murrary, 2008).

Perceived behavioural control was assessed by asking participants two questions, both developed based upon a 2002 paper by Ajzen. The two questions used were as follows: "If I wanted to I could exercise with a(n) (stereotype)" (1 = *definitely false* to 7 = *definitely true*). "In a fitness center setting it is up to me whether or not I exercise beside a(n) (stereotype)" (1 = *definitely false* to 7 = *definitely true*).

Prototype perception was assessed by using an adopted 10 point scale (0 to 100 with ten point intervals) used by Rivis et. al. (2006) and Haddock and Zanna (1994). Participants were asked to: "Indicate how favourable your impression is of the type of person your age who is a(n) (stereotype)" (0 = *extremely unfavourable* to 100 = *extremely favourable*).

Behavioural willingness was assessed by asking four questions similar to those used in previous studies (Gibbons et. al., 1998; Thornton et. al., 2002). The questions used in this study were: "To what extent would you like to exercise beside a(n) (stereotype)?" (1 = *Definitely would not like to do this* to 7 = *Definitely would like to do this*). "To what extent would you like to exercise in the same gym as a(n) (stereotype)?" (1 = *Definitely would not like to do this* to 7 = *Definitely would like to do this*). "To what extent would you like to exercise in a gym solely comprised of (stereotype)?" (1 = *Definitely would not like to do this* to 7 = *Definitely would like to do this*). "If you attended a gym, and were happy with going and attending this gym, how likely would you continue exercising at this

gym if a(n) (stereotype) started to exercise there at the same time as you?" (1 = *Definitely would not continue* to 7 = *Definitely would continue*). The behavioural willingness scale had a Cronbach's alpha range of .71 (older adults) to .83 (weightlifters) across all eight stereotypes.

Behavioural Intentions were assessed by asking participants two questions developed and based upon Ajzen's (2002) paper. The questions used were: "If I were to exercise I would do so with a(n) (stereotype)" (1 = *definitely false* to 7 = *definitely true*) and "If I were to exercise I would do so near a(n) (stereotype)" (1 = *definitely false* to 7 = *definitely true*).

Motivation to comply was assessed at the end of the questionnaire by asking participants "I generally want to do what my friends think I should do (1 = *strongly disagree* to 7 = *strongly agree*) (Rivis et. al., 2006).

In-group membership was assessed by asking the following question: "Do you consider yourself to be any one of the exercisers listed" (*yes/no*) followed by the participant being asked to list which one(s) in an open ended question.

3.5: Procedures

Participants first completed demographic information (age and gender) followed by the Godin Leisure Time Exercise Questionnaire (GLTEQ). Following this participants read a description of one of the exerciser stereotypes and then completed measures of image vividness, attitudes, subjective and descriptive norms, self-efficacy, perceived behavioural control, prototype-perception, behavioural willingness and behavioural intentions. This process was repeated for

all eight exerciser stereotypes (weightlifters, runner, athletes, overweight individuals, elderly, jocks, yoga and judgmental girls), and were given in random order to participants. After completing these scales for each of the eight exerciser stereotypes participants then completed a motivation to comply scale which was used in conjunction with the norms measures. These measures were then followed by the scale for in-group membership and an open-ended question asking if the participant would like to add any comments about any of the exercisers.

3.6: Data Screening

Before analyzing any of the data, scores were first checked for outliers. There is currently no clear definition of what constitutes an outlier (Osborne & Overbay, 2004) and this was complicated further by the lack of research in this area. Therefore, outliers were defined as +/-3 SD from the mean, based upon conventional standard (Osborne & Overbay, 2004). Cases that were deemed to be outliers were excluded from the analyses. In the multiple regression analysis section, outliers were addressed by examination of Cook's D values and leverage values. Following the examination of these values all regression analyses showed Cook's D values less than one, although some leverage values did exceed the acceptable range (> 2(k+1)/n). A Variable that did exceed acceptable leverage values indicated a case with unusual influence. Variables that exceeded acceptable leverage valuse were deleted and the analysis was conducted again and compared to the original analysis (Osborne & Overbay, 2004). In total twenty-one

cases were deemed outliers or exceed leverage values and were not included in the regression analyses.

3.7: Data Analysis

Before any hypotheses were tested, we first checked to see if participants were able to imagine the exerciser stereotypes used in the study. If participants could not imagine the exerciser stereotypes then the PWM would not be applicable (Gerrard, et. al., 2008). The participants' ability to imagine the exerciser stereotype was assessed through visual inspection of the means across the entire sample.

Hypothesis one states that attitudes, subjective norms, self-efficacy, past behaviour and prototype perception will all be positively correlated with behavioural willingness and behavioural intentions. For this hypothesis to be tested correlations among attitudes, self-efficacy, prototype-perception, subjective and descriptive norms, perceived behavioural control and past behaviour to behavioural willingness and behavioural intentions were examined.

Hypothesis two states that the adapted PWM will be able to predict behavioural willingness and behavioural intentions towards exercising with each of the eight exerciser stereotypes. To test hypothesis two, two multiple regressions were conducted for each of the stereotypes. Multiple regressions explore the relationships between independent variables and a dependent variable and enable the researcher to explore which of the independent variables are the best predictors of the dependent variable (Pallant, 2007).

Hypothesis three, that the positive exerciser stereotype will not be seen across all exercisers, and hypothesis four, that exercisers and non-exercisers will share the same attitudes, self-efficacy, behavioural willingness and behavioural intentions towards the eight exerciser stereotypes, whether positive or negative, were both tested through the use of analyses of variance (ANOVA).

Further analyses were also conducted to see if there were any differences on attitudes, self-efficacy, prototype-perception, behavioural willingness and behavioural intentions between the groups. Five separate MANOVA analyses were conducted with five levels of the exerciser groups as the independent variable and one of the above-mentioned variables as the dependent variable. Only five of the eight exercisers were used in the analyses because jocks, judgmental girls and older adults had too few participants self-identify with these groups to be included in the analyses.

Chapter 3 - References

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Chapter 4 – Results

4.1: Image vividness

Participants' ability to imagine the exerciser stereotypes was assessed through visual inspection of the means. Means and standard deviations can be seen in table 4.1. If means are high enough then we can assume that participants had a clear and distinct representation of the exerciser stereotype (Ouellette, et. al., 2005). This would allow for continued use of these exerciser stereotypes within the study.

Table 4.1

Exerciser stereotypes image vividness means as rated by the entire sample

	Mean(SD)
Runner	6.57(0.82)
Athlete	6.49(0.87)
Weightlifter	6.44(1.13)
Overweight individual	6.43(1.10)
Jock	6.40(1.03)
Yoga	6.32(1.15)
Older Adult	6.14(1.24)
Judgmental Girl	6.11(1.46)

4.2 - Hypothesis 1: Results

Attitudes, subjective norms, prototype perception and past behaviour

should all be positively correlated with behavioural willingness and behavioural

intentions (Gerrard et. al. 2008). To test this hypothesis, Pearson correlations were

examined. In addition to the PWM's original constructs of attitudes, subjective

norms, prototype perception and past behaviour; self-efficacy, perceived

behavioural control and descriptive norms were also examined. Correlations are

represented in table 4.2. All of the variables were significantly correlated with

behavioural willingness and behavioural intentions for athletes, weightlifters and

yoga participants. All variables for older adults were significantly correlated with

behavioural intentions, and all variables, except for descriptive norms, were

significantly correlated with behavioural willingness. Furthermore all variables

for judgmental girls were significantly correlated with behavioural willingness

and behavioural intentions, except for past behaviour. Correlations also show that

all variables for jocks were significantly correlated with behavioural intentions.

As well all variables for jocks were significantly correlated with behavioural

willingness, except for past behaviour. For overweight individuals it was found

that all variables were significantly correlated to behavioural intentions, except

for descriptive norms and prototype perception. All variables were also

significantly correlated to behavioural willingness except for past behaviour.

Examination of correlations for runners shows that all variables were significantly

correlated to behavioural intentions. All variables were also significantly

correlated to behavioural willingness except for past behaviour, which was a

categorical variable.

Table 4.2

Perceived behavioural control, social norms, descriptive norms, prototype-perception, self-efficacy, attitudes and past behaviour correlations to behavioural willingness and behavioural intentions towards exercising with each of the eight exerciser stereotypes

Variable	PBC	Social Norms	Descriptive Norms	Prototype-Perception	Self-Efficacy	Attitudes	Past behaviour
Athlete							
BW	.524**	.114*	.258**	.557**	.606**	.678**	.153*
BI	.429**	.223**	.257**	.370**	.508**	.627**	.229**
Elderly							
BW	.275**	.192*	.060	.489**	.271**	.609**	.185*
BI	.255**	.295**	-.05*	.500**	.431**	.577**	.184*
Judgmental Girl							
BW	.662**	.248**	.302**	.441**	.601**	.239**	.037

BI	.420**	.241**	.279**	.375**	.353**	.428**	.116

Jock

BW	.738**	.403**	.537**	.488**	.719**	.528**	.093
BI	.545**	.403**	.344**	.394**	.468**	.707**	.178*

Overweight

BW	.657**	.292**	.172*	.260**	.330**	.252**	.067
BI	.517**	.333**	.055	.218	.125*	.444**	.154*

Runner

BW	.643**	.343**	.237**	.171*	.523**	.408**	.086
BI	.590**	.282**	.244**	.251**	.461**	.521**	.139*

Weightlifter

BW	.703**	.283**	.396**	.320**	.556**	.591**	.167*
BI	.646**	.352**	.271**	.350**	.478**	.646**	.248**

Yoga

BW	.704**	.239**	.219**	.173*	.523**	.436**	.176*
BI	.526**	.269**	.158*	.152*	.403**	.625**	.138*

PBC = Perceived behavioural control, BW = Behavioural willingness, BI = Behavioural intentions.

* $p < .05$

** $p < .001$

4.3: Hypothesis 2: Results

Hypothesis two stated that the PWM will be supported and behavioural intentions and behavioural willingness will be predicted by the adapted PWM variables, attitudes, descriptive and subjective norms, prototype perception, self-efficacy, perceived behavioural control and past behaviour for each of the eight stereotypes. This hypothesis was analyzed through the use of two separate regression analyses repeated for each of the 8 stereotypes, one analysis with behavioural willingness as the dependent variable and one with behavioural intentions as the dependent variable. Independent variables consisted of attitudes, descriptive and subjective norms, prototype perception, self-efficacy, perceived behavioural control and past behaviour. The hypothesis would be supported if the regression equations (self-efficacy, PBC, descriptive norms, subjective norms, prototype-perception, attitudes and past behaviour) could successfully predict both behavioural willingness and behavioural intentions.

Before conducting any of the multiple regressions four assumptions were first addressed: linear relationships between the independent and dependent variables, the assumption of homoscedasticity, variables are internally consistent and the normal distribution of variables, (Osborne & Waters, 2002).

4.3.1: Normal distribution

Aggregates to be used in all regression analyses were first checked for outliers. Cook's D values and leverage values were examined and relied upon for identification of outliers. Following the examination of these values all regression

analysis showed Cook's D values less than the cut-off value of one, although some leverage values did exceed acceptable values (> 2(k+1)/n) (Kleinbaum, Kupper, Nizam & Muller, 2007). Variables that did exceed acceptable leverage values were deleted and the analysis was conducted again and compared to the original analysis (Osborne & Overbay, 2004). Skewness and kurtosis values were noted prior to each analysis and were all deemed to be acceptable values once leverage values were deleted. Acceptable skewness and kurtosis values were defined by the researcher to be less than 1.5. This value was based upon visual inspections of the distributions (Tabachnick & Fidell, 2001). Kleinbaum et. al. (1988) also suggest that only serious departures from normality are considered worrisome.

4.3.2: Linear Relationship

All independent variables were checked to see if a linear relationship existed between the variable and dependent variable. Examination of p-p plots of the standardized residuals shows a noticeable linear relationship among all variables. Further examination of the p-p plot of regression standardized residual was examined and, as a result, no major heteroscedasticity was believed to exist across the independent variables. Homoscedasticity refers to variance of errors being the same across all levels of the independent variable. If significant heteroscedasticity exists, it can seriously distort the findings and weaken the analysis (Osborne & Waters, 2002).

4.3.3: Variables Are Internally Consistent

Scales have an acceptable Cronbach's alpha coefficient when over .7, although internal consistency is considered to be quite good at .85 and over (Pavot, Diener, Colvin & Sandvik, 1991; Nunnally, 1978). The attitudes scale, when analysed for all eight stereotypes had a range of Cronbach's alpha from .64 to .772, the average being .72. The behavioural willingness scale had a Cronbach's alpha range of .71 to .83. The behavioural intentions scale had a Cronbach's alpha range of .73 to .80.

When examining correlations for PBC it was found that one of the PBC items had very poor correlations to both behavioural willingness and behavioural intentions while the other item did not. Upon inspection of the two items used for this scale one was selected to be used as the overall perceived behavioural control measure ("In a fitness center it is up to me whether or not I exercise with a (stereotype"). This selection was based upon the wording of the question itself, the research questions being addressed and its' stronger correlation to the predictor variable. All other measures, prototype perception, self-efficacy and active, were single scale measures.

4.3.4: Inspection of beta weights and correlations

Courville and Thompson (2001) state that the examination of beta weights alone is not enough to fully interpret and understand a multiple regression. In light of this beta weights and zero-order correlations will be examined. Structure coefficients are also commonly examined here, yet since structure coefficients

and the correlation between the predictor variable and the dependent variable rank order the predictors identically (Courville & Thompson, 2001), only correlations will be examined. By examining correlations we will be able to assess a variable's contribution to the analysis and to determine if a variable is potentially redundant.

4.3.5: Multiple Regressions

When the multiple regressions were conducted, firstly Cook's D and leverage values were examined if any variables violated acceptable values, as explained above, they were excluded from the analysis. The original analysis and the analysis with outliers excluded were compared to each other, if the analysis with outliers excluded showed noticeable differences in results this analysis was used, otherwise the original analysis was relied upon. Collinearity diagnostics were then checked for any unacceptable condition index values, those over 30. All variables were found to be within reasonable limits.

Beta-weights were then examined, followed by correlations to behavioural willingness and behavioural intentions. By examining both beta-weights and correlations we are able to identify any possible suppressor variables as well as assessing if any collinearity may be the cause of some variables not receiving significant beta weights (Courville & Thompson, 2001).

4.3.6.1: Prediction of behavioural willingness to exercise with athletes

A multiple regression was conducted to investigate the ability of the adapted prototype willingness model to predict behavioural willingness towards

exercising in the same environment as athletes. After examination of leverage

values, four cases were deleted (126, 8, 80, 103) and the *r* value was increased by

.014. Means, standard deviations and intercorrelations can be seen in table 4.3.

The regression equation was statistically significant ($F(7,158) = 36.85$, $p < .001$).

The results of the analysis are presented in table 4.4. There were no instances of a

variable having a zero correlation with behavioural willingness and a non-zero

beta weight, therefore we can assume that no suppressor variables exist within the

model (Courville & Thompson, 2001). Collinearity diagnostics were examined

and no cases were found to have a condition index over 30, meaning that no major

cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes,

perceived behavioural control, self-efficacy and prototype perception had

significant betas and predicted behavioural willingness when all seven variables

were present. Yet, social norms, descriptive norms and past behaviour all show

significant correlations to behavioural willingness meaning that they also

contribute to the model in some manner (Courville & Thompson, 2001). The

adjusted R^2 value was .603, meaning that 60% of the variance in behavioural

willingness towards exercising in the same environment as athletes was explained

by this model.

4.3.6.2: Prediction of behavioural intentions to exercise with athletes

      After examination of leverage values four cases were filtered out of the

analysis (126, 8, 80, 103), which was found to raise the *r* value by .024. Table 4.3

shows means, standard deviations and intercorrelations. There was a significant

regression equation ($F(7,158) = 38.16$, $p < .001$). The results of the analysis are presented in table 4.5. There were no instances of a variable having a zero correlation with behavioural intentions and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, self-efficacy and social norms all had significant betas and predicted behavioural intentions when all seven variables were present in the regression anlysis. Yet, perceived behavioural control, descriptive norms, prototype perception and past behaviour all show significant correlations to behavioural intentions meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R^2 value was .612. This means that 61% of the variance in behavioural intentions towards exercising in the same environment as athletes was explained by this model.

Table 4.3

Means, Standard deviations and Intercorrelations for behavioural willingness and behavioural intentions to exercise in the same environment as an athlete and PWM predictor variables

Variable	*M*	SD	PBC	Social Norms	Descriptive Norms	Prototype Perception	Self-efficacy	Attitudes	Past behaviour
Behavioural Willingness	5.56	1.13	.524**	.114*	.258**	.557**	.606**	.678**	.153*
Behavioural Intentions	6.00	1.20	.429**	.223**	.257**	.370**	.508**	.627**	.229**
Predictor									
PBC	5.54	1.77	--						
Social Norms	17.53	10.51	.069	--					
Descriptive Norms	5.20	5.95	.188**	.636**	--				
Prototype-	84.40	15.97	.491**	.287**	.222**	--			

Perception								
Self-Efficacy	5.94	1.29	.413**	.114	.253**	.448**	--	
Attitudes	5.68	1.25	.338**	.035	.199*	.430**	.564**	--
Activity Levels	1.64	.48	-.039*	.069	-.046	.153	.182*	.229*	--

*p < .05; ** p < .01.*

Table 4.4

Prediction of behavioural willingness to exercise with an athlete.

Variable	*B*	SEB	β	*p*
PBC	.139	.038	.217**	<.001
Social Norms	.002	.007	.015	.828
Descriptive Norms	.008	.013	.043	.528
Prototype Perception	.012	.005	.169**	.009
Self-Efficacy	.164	.056	.188**	.004
Attitudes	.370	.056	.411**	<.001
Past behaviour	.099	.120	.042	.414
Constant	.480	.387		

$R^2 = .61$; $F(7,158) = 38.16$, $p < .001$.

Table 4.5

Prediction of behavioural intentions to exercise with an athlete.

Variable	*B*	SEB	β	*p*
PBC	.073	.040	.108	.069
Social Norms	.018	.008	.156*	.021
Descriptive Norms	-.009	.013	-.047	.484
Prototype Perception	.006	.005	.084	.188
Self-Efficacy	.405	.059	.436**	<.001
Attitudes	.288	.059	.300**	<.001
Past behaviour	.210	.127	.084	.100
Constant	.416	.386		

$R^2 = .60$; $F(7,158) = 36.85$, $p < .001$.

4.3.7.1: Prediction of behavioural willingness to exercise with older adults

A multiple regression was conducted to investigate the ability of the adapted prototype willingness model to predict behavioural willingness towards exercising in the same environment as older adults. After examination of leverage values, seven cases were deleted (56, 118, 98, 89, 103, 73, 40) and the *r* value was decreased by .044. Means, standard deviations and intercorrelations can be seen in table 4.6. Upon first conducting this analysis it was found that descriptive norms had no correlation with behavioural willingness. This lack of correlation was deemed to be the result of a limitation with the measurement of descriptive norms

and the analysis was conducted again without descriptive norms. In doing this an increase in R² value was found. The regression analysis was statistically significant ($F(6,145) = 26.97$, $p < .001$). The results are presented in table 4.7. Those variables that had the strongest beta weights also shared the strongest correlations to the dependent variable. There were no instances of a variable having a zero correlation with behavioural willingness and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, perceived behavioural control and prototype perception had significant betas and predicted behavioural willingness when all seven variables were present in the regression analysis. Nonetheless, social norms, self-efficacy and past behaviour all show significant correlations to behavioural willingness meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R² value was .51, meaning that 51% of the variance in behavioural willingness towards exercising in the same environment as older adults was explained by this model.

4.3.7.2: Prediction of behavioural intentions to exercise with older adults

After examination of leverage values, seven cases were filtered out of the analysis (56, 118, 98, 89, 103, 73, 40) which was found to decrease the *r* value by .06. Table 4.6 shows means, standard deviations and intercorrelations. Upon first

conducting this analysis it was found that descriptive norms had a very small

negative correlation with behavioural intentions. In keeping the analysis

consistent with the behavioural willingness regression, descriptive norms was

removed from the analysis. In doing this the R^2 value increased. The regression

equation was statistically significant ($F(6,145) = 31.32$, $p < .001$). The results of

the analysis are presented in Table 4.8 There were no instances of a variable

having a zero correlation with behavioural intentions and a non-zero beta weight,

therefore we can assume that no suppressor variables exist within the model

(Courville & Thompson, 2001). Collinearity diagnostics were examined and no

cases were found to have a condition index over 30, meaning that no major cases

of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, self-

efficacy and social norms received significant betas and predict behavioural

intentions when all seven variables are present. Nonetheless prototype-perception,

PBC and past behaviour all show significant correlations to behavioural intentions

meaning that they also contribute to the model in some manner (Courville &

Thompson, 2001). The adjusted R^2 value was .54. This means that 54% of the

variance in behavioural intentions towards exercising in the same environment as

older adults was explained by this model.

Table 4.6

Means, Standard deviations and Intercorrelations for behavioural willingness and behavioural intentions to exercise in the same environment as an older adult and PWM predictor variables

Variable	*M*	SD	PBC	Social Norms	Prototype-Perception	Self-Efficacy	Attitudes	Past behaviour
Behavioural Willingness	4.58	1.17	.332**	.229*	.529**	.345**	.626**	.159*
Behavioural Intentions	5.42	1.41	.318**	.295**	.500**	.431**	.604**	.184*
Predictor								
PBC	5.39	1.77	--					
Social Norms	13.63	9.87	.135	--				
Prototype-Perception	75.23	20.45	.107	.132*	--			
Self-	5.28	1.84	.176*	.215**	.215*	--		

Efficacy							
Attitudes	4.63	1.43	.160	.277**	.480**	.358**	--
Activity	1.63	.48	-.061	.045	.086	.058	.146*	--
Levels							

*_p_ < .05; ** _p_ < .01.

Table 4.7

Prediction of behavioural willingness to exercise with older adults

Variable	*B*	SEB	β	*p*
PBC	.148	.039	.224**	<.001
Social Norms	.003	.007	.026	.661
Prototype Perception	.016	.004	.279**	<.001
Self-Efficacy	.056	.040	.089	.156
Attitudes	.333	.057	.405**	<.001
Past behaviour	.229	.140	.095	.103
Constant	.326	.396		

$R^2 = .51$; $F(6,145) = 26.97$, $p < .001$.

Table 4.8

Prediction of behavioural intentions to exercise with older adults

Variable	*B*	SEB	β	*p*
PBC	.148	.045	.186**	.001
Social Norms	.007	.008	.052	.370
Prototype Perception	.021	.004	.311**	<.001
Self-Efficacy	.199	.046	.260**	<.001
Attitudes	.306	.066	.310**	<.001
Past behaviour	.182	.161	.062	.263
Constant	.146	.458		

$R^2 = .54$; $F(6,145) = 31.32$, $p < .001$.

4.3.8.1: Prediction of behavioural willingness to exercise with judgmental girls

A multiple regression was conducted to investigate the ability of the adapted prototype willingness model to predict behavioural willingness towards exercising in the same environment as judgmental girls. After examination of leverage values, two cases were deleted (103, 23) and the *r* value was decreased by .009. Means, standard deviations and intercorrelations can be seen in table 4.9. Upon examination of the original analysis, past behaviour had no significant correlation with behavioural willingness. This lack of correlation was deemed to be caused by a limitation with the measurement of past behaviour and the analysis was conducted again without past behaviour. The regression equation was

statistically significant ($F(6,171) = 41.03$, $p < .001$). The results of the analysis
are presented in table 4.10. There were no instances of a variable having a zero
correlation with behavioural willingness and a non-zero beta weight, therefore we
can assume that no suppressor variables exist within the model (Courville &
Thompson, 2001). Collinearity diagnostics were examined and no cases were
found to have a condition index over 30, meaning that no major cases of
collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes,
perceived behavioural control, prototype perception and social norms had
significant betas and predicted behavioural willingness when all seven variables
were present in the regression analysis. Yet self-efficacy and descriptive norms
show significant correlations to behavioural willingness meaning that they also
contribute to the model in some manner (Courville & Thompson, 2001). The
adjusted R² value was .576, meaning that 57% of the variance in behavioural
willingness towards exercising in the same environment as judgmental girls was
explained by this model.

4.3.8.2: Prediction of behavioural intentions to exercise with judgmental girls

After examination of leverage values, two cases were deleted (103, 23)
which was found to decrease the *r* value by .018. Table 4.9 shows means,
standard deviations and intercorrelations. Upon examination of the original
analysis, past behaviour had no correlation with behavioural intentions. This lack
of correlation was deemed to be caused by a limitation with the measurement of
past behaviour and the analysis was conducted again without past behaviour. The

regression equation was statistically significant ($F(6,171) = 18.70$, $p < .001$). The results of the analysis are presented in table 4.11. There were no instances of a variable having a zero correlation with behavioural intentions and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, social norms, perceived behavioural control and prototype perception had significant betas and predicted behavioural intentions when all seven variables were present in the regression analysis. Nonetheless, descriptive norms and self-efficacy show significant correlations to behavioural intentions meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R^2 value was .375. This means that 37% of the variance in behavioural intentions towards exercising in the same environment as judgmental girls was explained by this model.

Table 4.9

Means, Standard deviations and Intercorrelations for behavioural willingness and behavioural intentions to exercise in the same environment as judgmental girls PWM and predictor variables

Variable	*M*	SD	Attitudes	PBC	Descriptive Norms	Social Norms	Prototype-Perception	Self-Efficacy
Behavioural Willingness	3.90	1.29	.689**	.275**	.221**	.380**	.620**	.283**
Behavioural Intentions	5.03	1.7	.431**	.284**	.208**	.339**	.377**	.452**
Predictor								
Attitudes	3.71	1.47	--					
PBC	5.23	1.86	.043	--				
Descriptive Norms	6.11	5.90	.199**	.008	--			
Social Norms	12.15	9.03	.307**	.084	.052**	--		

Prototype-Perception	52.07	26.27	.641**	.159*	.355**	.448**	--
Self-Efficacy	5.33	1.85	.271**	.117	.099	.125*	.141	--

*_p_ < .05; ** _p_ < .01.

Table 4.10

Prediction of behavioural willingness to exercise with judgmental girls

Variable	*B*	SEB	β	*p*
Attitudes	.420	.058	.480**	<.001
PBC	.136	.035	.197**	<.001
Descriptive Norms	-.013	.014	-.057	.380
Social Norms	.020	.010	.141*	.039
Prototype Perception	.011	.003	.226**	<.001
Self-efficacy	.060	.036	.086	.095
Constant	.570	.274		

$R^2 = .57$; $F(6,171) = 41.03$, $p < .001$.

Table 4.11

Prediction of behavioural intentions to exercise with judgmental girls

Variable	*B*	SEB	β	*p*
Attitudes	.269	.093	.233*	.004
PBC	.190	.056	.208*	.001
Descriptive Norms	-.006	.023	-.023	.777
Social Norms	.036	.016	.192*	.021
Prototype Perception	.004	.005	.069	.413
Self-efficacy	.305	.057	.332**	<.001
Constant	.787	.438		

$R^2 = .37$; $F(6,171) = 18.70$, $p < .001$.

4.3.9.1: Prediction of behavioural willingness to exercise with jocks

A multiple regression was conducted to investigate the ability of the adapted prototype willingness model to predict behavioural willingness towards exercising in the same environment as jocks. After examination of leverage values it was found that there was no difference between the filtered analysis and the unfiltered analysis, so all cases were left in. Means, standard deviations and intercorrelations can be seen in table 4.12. Upon examination of the original analysis, past behaviour had no correlation with behavioural willingness. This lack of correlation was deemed to be caused by a limitation with the measure of past behaviour and the analysis was conducted again without past behaviour. The

regression equation was statistically significant ($F(6,173) = 78.27, \underline{p} < .001$). The results of the analysis are presented in table 4.13. There were no instances of a variable having a zero correlation with behavioural willingness and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, perceived behavioural control, prototype perception, descriptive norms and self-efficacy had significant betas and predicted behavioural willingness when all seven variables were present in the regression analysis. Yet, social norms do show a significant correlation to behavioural willingness meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R² value was .721, meaning that 72% of the variance in behavioural willingness towards exercising in the same environment as jocks was explained by this model.

4.3.9.2: Prediction of behavioural intentions to exercise with jocks

After examination of leverage values it was found that there was no difference between the filtered analysis and the unfiltered analysis, so all cases were left in. Table 4.12 shows means, standard deviations and intercorrelations. Upon examination of the original analysis, past behaviour had no correlation with behavioural intentions. This lack of correlation was deemed to be caused by a limitation with the measurement of past behaviour and the analysis was conducted

again without past behaviour. The regression equation was statistically significant

(F(6,173) = 49.27, $\underline{p}$ < .001). The results of the analysis are presented in table

4.14. There were no instances of a variable having a zero correlation with

behavioural intentions and a non-zero beta weight, therefore we can assume that

no suppressor variables exist within the model (Courville & Thompson, 2001).

Collinearity diagnostics were examined and no cases were found to have a

condition index over 30, meaning that no major cases of collinearity exist within

the analysis (Kleinbaum et. al., 2007). Attitudes and self-efficacy had significant

betas and predict behavioural intentions when all seven variables were present in

the regression analysis. Nonetheless, social norms, descriptive norms, PBC,

prototype-perception and past behaviour all show significant correlations to

behavioural intentions meaning that they also contribute to the model in some

manner (Courville & Thompson, 2001). The adjusted R^2 value was .631. This

means that 63% of the variance in behavioural intentions towards exercising in

the same environment as jocks was explained by this model.

Table 4.12

Means, Standard deviations and Intercorrelations for behavioural willingness and behavioural intentions to exercise in the same environment as a jock and PWM predictor variables

Variable	*M*	SD	Attitudes	PBC	Descriptive Norms	Social Norms	Prototype- Perception	Self- Efficacy
Behavioural Willingness	4.24	1.45	.750**	.424**	.504**	.458**	.719**	.542**
Behavioural Intentions	5.10	1.63	.566**	.445**	.301**	.373**	.489**	.715**
Predictor								
Attitudes	4.09	1.64	--					
PBC	5.24	1.95	.272**	--				
Descriptive Norms	3.76	5.33	.439**	.183*	--			
Social Norms	14.07	9.95	.400**	.219**	.677**	--		
Prototype-	59.05	23.75	.633**	.330**	.459**	.465**	--	

Perception								
Self-Efficacy	5.46	1.58	.394**	.453**	.257**	.279**	.351**	--

p < .05; ** *p* < .01.

Table 4.13

Prediction of behavioural willingness towards exercising with jocks

Variable	*B*	SEB	β	*p*
Attitudes	.351	.048	.395**	<.001
PBC	.075	.034	.101*	.026
Descriptive Norms	.033	.015	.120*	.032
Social Norms	-.001	.008	-.005	.935
Prototype Perception	.019	.003	.331**	<.001
Self-efficacy	.185	.043	.202**	<.001
Constant	.162	.237		

$R^2 = .721$; $F(6,173) = 78.27$, $p < .001$.

Table 4.14

Prediction of behavioural intentions towards exercising with jocks

Variable	*B*	SEB	β	*p*
Attitudes	.267	.062	.269**	<.001
PBC	.079	.044	.095	.076
Descriptive Norms	-.028	.020	-.091	.166
Social Norms	.019	.011	.118	.070
Prototype Perception	.006	.004	.090	.163
Self-efficacy	.541	.056	.526**	<.001
Constant	.113	.311		

$R^2 = .63$; $F(6,173) = 49.27$, $p < .001$.

4.3.10.1: Prediction of behavioural willingness to exercise with overweight Individuals

A multiple regression was conducted to investigate the ability of the adapted prototype willingness model to predict behavioural willingness towards exercising in the same environment as overweight individuals. After examination of leverage values it was found that two cases should be deleted (10,199) because of high values, in doing this the filtered analysis showed a decrease in the *r* squared value of .011. Upon examination of the original analysis it was found that past behaviour was not significantly correlated with behavioural willingness. This

lack of correlation was deemed to be caused by a limitation with the measurement of past behaviour and the analysis was conducted again without past behaviour. Means, standard deviations and intercorrelations can be seen in table 4.15. The regression equation was statistically significant ($F(6,177) = 31.84$, $\underline{p} < .001$). The results of the analysis are presented in table 4.16. There were no instances of a variable having a zero correlation with behavioural willingness and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, perceived behavioural control and prototype perception had significant betas and predicted behavioural willingness when all seven variables were present in the regression analysis. Nonetheless, social norms, self-efficacy and descriptive norms all show significant correlations to behavioural willingness meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R^2 value was .503, meaning that 53% of the variance in behavioural willingness towards exercising in the same environment as overweight individuals was explained by this model.

4.3.10.2: Prediction of behavioural intentions to exercise with overweight individuals

After examination of leverage values it was found that two cases should be deleted (10,199) because of high values, in doing this the filtered analysis showed

a decrease in r squared value of .007. Upon examination of the original analysis it was found that descriptive norms had no significant correlation to behavioural intentions. When the analysis was conducted again without descriptive norms no changes were noted in the r squared value and the original analysis was analysed. Table 4.17 shows means, standard deviations and intercorrelations. The regression equation was statistically significant ($F(7,158) = 21.01$, $p < .001$). The results of the analysis are presented in table 4.18. There were no instances of a variable having a zero correlation with behavioural intentions and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, self-efficacy, perceived behavioural control and past behaviour had significant betas and predicted behavioural intentions when all seven variables were present in the regression analysis. Nonetheless, social norms and self-efficacy show significant correlations to behavioural intentions meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). Descriptive norms shows no significant beta weights or correlation to behavioural intentions. The adjusted R^2 value was .413. This means that 41% of the variance in behavioural intentions towards exercising in the same environment as overweight individuals was explained by this model.

Table 4.15

Means, Standard deviations and Intercorrelations for behavioural willingness to exercise in the same environment as an overweight individual and PWM predictor variables

Variable	*M*	SD	Attitudes	PBC	Descriptive Norms	Social Norms	Prototype-Perception	Self-Efficacy
Behavioural Willingness	4.51	1.19	.660**	.292**	.099*	.271**	.354**	.275**
Predictor								
Attitudes	4.57	1.42	--					
PBC	5.43	1.79	.146*	--				
Descriptive Norms	3.68	3.99	.131*	-.031	--			
Social Norms	14.17	9.34	.256**	.009	.385**	--		
Prototype-Perception	51.95	22.77	.275**	.007	.207**	.212**	--	
Self-Efficacy	5.44	1.72	.352**	.111	.086	.242**	.123	--

* *p* < .05; ** *p* < .01.

Table 4.16

Prediction of behavioural willingness towards exercising with overweight

individuals

Variable	*B*	SEB	β	*p*
Attitudes	.464	.049	.554**	<.001
PBC	.138	.035	.206**	<.001
Descriptive Norms	-.014	.017	-.046	.424
Social Norms	.013	.008	.103	.084
Prototype Perception	.010	.003	.186**	.001
Self-efficacy	.009	.039	.013	.813
Constant	.946	.307		

$R^2 = .503$; $F(6,177) = 31.84$, $p < .001$.

Table 4.17

Means, Standard deviations and Intercorrelations for behavioural intentions to exercise in the same environment as an

overweight individual and PWM predictor variables

Variable	*M*	SD	Attitudes	PBC	Descriptive Norms	Social Norms	Prototype- Perception	Self- Efficacy	Past behaviour
Behavioural Intentions	5.55	1.43	.517 **	.333 **	.055	.218 *	.129 *	.444 **	.154 *
Predictor									
Attitudes	4.59	1.42	--						
PBC	5.46	1.82	.144 *	--					
Descriptive Norms	3.34	3.55	.171 *	.009	--				
Social Norms	13.77	9.00	.250 **	.031	.389 **	--			
Prototype-	50.60	22.4	.256	.002	.201	.186	--		

Perception		7	**		**	**		
Self-Efficacy	5.42	1.76	.331**	.088	.101	.227**	.186	--
Past behaviour	1.65	.48	.049	-.049	-.116	.091	.227	-.004	--

*p < .05; **p < .01.*

Table 4.18

Prediction of behavioural intentions towards exercising with overweight

individuals

Variable	*B*	SEB	β	*p*
Attitudes	.374	.067	.371**	<.001
PBC	.203	.047	.259**	<.001
Descriptive Norms	-.018	.027	-.045	.498
Social Norms	.009	.011	.057	.399
Prototype Perception	.000	.004	-.004	.954
Self-efficacy	.235	.052	.291**	<.001
Past behaviour	.415	.182	.139*	.024
Constant	.709	.515		

$R^2 = .413$; $F(7,158) = 21.01$, $p < .001$.

4.3.11.1: Prediction of behavioural willingness to exercise with runners

A multiple regression was conducted to investigate the ability of the
adapted prototype willingness model to predict behavioural willingness towards
exercising in the same environment as runners. After examination of leverage
values, three cases were deleted and the analysis was conducted again, it was
found that the deletion of these cases made no difference and they were left in.
Upon examination of the original analysis it was found that past behaviour had no

significant correlation with behavioural willingness. This was deemed to be due to a measurement limitation and past behaviour was taken out and the analysis was conducted again. Means, standard deviations and intercorrelations can be seen in table 4.19. The regression equation was statistically significant ($F(6,179) = 35.45$, $p < .001$). The results of the analysis are presented in table 4.20. There were no instances of a variable having a zero correlation with behavioural willingness and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, perceived behavioural control and prototype perception had significant betas and predicted behavioural willingness when all seven variables were present in the regression analysis. Nonetheless, social norms, self-efficacy and descriptive norms all show significant correlations to behavioural willingness meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R² value was .528, meaning that 53% of the variance in behavioural willingness towards exercising in the same environment as runners was explained by this model.

4.3.11.2: Prediction of behavioural intentions to exercise with runners

After examination of leverage values, three cases were deleted and the analysis was conducted again, it was found that the deletion of these cases made no difference and they remained in the analysis. Upon examination of the original

analysis it was found that past behaviour had no significant correlation with behavioural willingness. This was deemed to be due to a measurement limitation and past behaviour was taken out and the analysis was conducted again. Table 4.19 shows means, standard deviations and intercorrelations. The regression equation was statistically significant ($F(6,179) = 29.49$, $\underline{p} < .001$). The results of the analysis are presented in table 4.21. There were no instances of a variable having a zero correlation with behavioural intentions and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, self-efficacy, perceived behavioural control and prototype perception had significant betas and predicted behavioural intentions when all seven variables were present in the regression analysis. Nonetheless, social norms, self-efficacy and past behaviour all show significant correlations to behavioural intentions meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R^2 value was .480. This means that 48% of the variance in behavioural intentions towards exercising in the same environment as runners was explained by this model.

Table 4.19

Means, Standard deviations and Intercorrelations for behavioural willingness and behavioural intentions to exercise in the same environment as a runner and PWM predictor variables

Variable	*M*	SD	Attitudes	PBC	Descriptive Norms	Social Norms	Prototype-Perception	Self-Efficacy
Behavioural Willingness	5.22	1.24	.643**	.343**	.237**	.171*	.523**	.408**
Behavioural Intentions	5.73	1.32	.556**	.277**	.221**	.241**	.472**	.551**
Predictor								
Attitudes	5.20	1.43	--					
PBC	5.56	1.74	.146*	--				
Descriptive Norms	4.65	5.72	.217**	.077	--			
Social Norms	17.15	10.22	.155*	.042	.560**	--		

Prototype-perception	80.53	18.09	.339**	.178**	.155**	.259**	--
Self-Efficacy	5.72	1.38	.490**	.173**	.185**	.158*	.310**	--

* $p < .05$; ** $p < .01$.

Table 4.20

Prediction of behavioural willingness towards exercising with runners

Variable	*B*	SEB	β	*p*
Attitudes	.415	.052	.482**	<.001
PBC	.142	.037	.200*	<.001
Descriptive Norms	.011	.013	.052	.403
Social Norms	-.003	.008	-.021	.739
Prototype Perception	.020	.004	.292**	<.001
Self-efficacy	.033	.053	.037	.535
Constant	.405	.370		

R² = .528; F(6,179) = 35.45, p < .001.

Table 4.21

Prediction of behavioural intentions towards exercising with runners

Variable	B	SEB	β	p
Attitudes	.275	.058	.298**	<.001
PBC	.104	.041	.137*	.013
Descriptive Norms	.003	.015	.013	.844
Social Norms	.010	.008	.075	.252
Prototype Perception	.020	.004	.285**	<.001
Self-efficacy	.280	.059	.294**	<.001
Constant	.561	.416		

$R^2 = .48$; $F(6,179) = 29.49$, $p < .001$.

4.3.12.1: Prediction of behavioural willingness to exercise with weightlifters

A multiple regression was conducted to investigate the ability of the adapted prototype willingness model to predict behavioural willingness towards exercising in the same environment as weightlifters. After examination of leverage values, it was found that two cases could possibly be because of high values, in doing this the filtered analysis showed no difference and the cases were left in. Means, standard deviations and intercorrelations can be seen in table 4.22. The regression equation was statistically significant ($F(7,160) = 37.50$, $p < .001$). The results of the analysis are presented in table 4.23. There were no instances of

a variable having a zero correlation with behavioural willingness and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, perceived behavioural control and prototype perception had significant betas and predicted behavioural willingness when all seven variables were present in the regression analysis. However, social norms, descriptive norms, self-efficacy and past behaviour all show significant correlations to behavioural willingness meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R² value was .605, meaning that 61% of the variance in behavioural willingness towards exercising in the same environment as a weightlifter was explained by this model.

4.3.12.2: Prediction of behavioural intentions to exercise with weightlifters

After examination of leverage values, it was found that two cases could possibly be because of high values, in doing this the filtered analysis showed no difference and the cases were left in. Table 4.22 shows means, standard deviations and intercorrelations. The regression equation was statistically significant ($F(7,160) = 35.74, p < .001$). The results of the analysis are presented in table 4.24. There were no instances of a variable having a zero correlation with behavioural intentions and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001

Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, self-efficacy, perceived behavioural control, prototype perception and past behaviour had significant betas and predict behavioural intentions when all seven variables were present in the regression analysis. Nonetheless, social norms and descriptive norms show significant correlations to behavioural intentions meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R^2 value was .593. This means that 59% of the variance in behavioural intentions towards exercising in the same environment as weightlifters was explained by this model.

Table 4.22

Means, Standard deviations and Intercorrelations for behavioural willingness and behavioural intentions to exercise in the same environment as a weightlifter and PWM predictor variables

Variable	*M*	SD	Attitudes	PBC	Descriptive Norms	Social Norms	Prototype-Perception	Self-Efficacy	Past behaviour
Behavioural Willingness	4.49	1.34	.703 **	.283 **	.396 **	.320 **	.556 **	.591 **	.167 *
Behavioural Intentions	5.25	1.55	.646 **	.352 **	.271 **	.350 **	.478 **	.646 **	.248 **
Predictor									
Attitudes	4.53	1.51	--						
PBC	5.46	1.81	.243 **	--					
Descriptive Norms	2.76	3.7	.360 **	.158*	--				
Social	14.7	10.24	.285	.187	.468	--			

	M	SD							
Norms			**	**	**				
Prototype-Perception	65.12	21.91	.475 **	.329 **	.322 **	.310 **	--		
Self-Efficacy	5.32	1.69	.565 **	.322 **	.279 **	.253 **	.318 **	--	
Past behaviour	1.64	.48	.121	-.090	-.023	.110	.018	.115	--

*$p < .05$; ** $p < .01$.

Table 4.23

Prediction of behavioural willingness towards exercising with weightlifters

Variable	*B*	SEB	β	*p*
Attitudes	.347	.058	.392**	<.001
PBC	.013	.040	.018	.740
Descriptive Norms	.037	.021	.102	.079
Social Norms	.001	.007	.008	.892
Prototype Perception	.015	.004	.249**	<.001
Self-efficacy	.193	.048	.244**	<.001
Past behaviour	.250	.139	.090	.074
Constant	.298	.356		

$R^2 = .605$; $F(7,160) = 37.50$, $p < .001$.

Table 4.24

Prediction of behavioural intentions towards exercising with weightlifters

Variable	*B*	SEB	β	*p*
Attitudes	.321	.068	.312**	<.001
PBC	.098	.047	.113*	.039
Descriptive Norms	-.024	.024	-.057	.336
Social Norms	.017	.009	.110	.060
Prototype Perception	.012	.004	.163**	.007
Self-efficacy	.323	.057	.351**	<.001
Past behaviour	.528	.164	.164*	.002
Constant	-.254	.419		

$R^2 = .593$; $F(7,160) = 35.74$, $p < .001$.

4.3.13.1: Prediction of behavioural willingness to exercise with yoga participants

A multiple regression was conducted to investigate the ability of the adapted prototype willingness model to predict behavioural willingness towards exercising in the same environment as yoga participants. After examination of leverage values, it was found that four cases had high values (126, 194, 103, 56) filtering out these variables increased the *r* squared value by .027. Means, standard deviations and intercorrelations can be seen in table 4.25. The regression equation was statistically significant ($F(7,155) = 32.65$, $p < .001$). The results of the analysis are presented in table 4.26. There were no instances of a variable

having a zero correlation with behavioural willingness and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001). Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, perceived behavioural control, prototype perception and self-efficacy had significant betas and predicted behavioural willingness when all seven variables were present in the regression analysis. Nonetheless, social norms, descriptive norms and past behaviour all show significant correlations to behavioural willingness meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R^2 value was .578, meaning that 58% of the variance in behavioural willingness towards exercising in the same environment as a yoga participant was explained by this model.

4.3.13.2: Prediction of behavioural intentions to exercise with yoga participants

After examination of leverage values, it was found that four cases could possibly be deleted because of high values, in doing this the filtered analysis showed no difference and the cases were left in. Table 4.25 shows means, standard deviations and intercorrelations. The regression equation was statistically significant ($F(7,159) = 24.41$, $p < .001$). The results of the analysis are presented in table 4.27. There were no instances of a variable having a zero correlation with behavioural intentions and a non-zero beta weight, therefore we can assume that no suppressor variables exist within the model (Courville & Thompson, 2001).

Collinearity diagnostics were examined and no cases were found to have a condition index over 30, meaning that no major cases of collinearity exist within the analysis (Kleinbaum et. al., 2007). Attitudes, self-efficacy and perceived behavioural control had significant betas and predicted behavioural intentions when all seven variables were present in the regression analysis. However, social norms, descriptive norms, prototype-perception and past behaviour all show significant correlations to behavioural intentions meaning that they also contribute to the model in some manner (Courville & Thompson, 2001). The adjusted R^2 value was .497. This means that 50% of the variance in behavioural intentions towards exercising in the same environment as a yoga participant was explained by this model.

Table 4.25

Means, Standard deviations and Intercorrelations for behavioural willingness and behavioural intentions to exercise in

the same environment as a yoga participant and PWM predictor variables

Variable	*M*	SD	Attitudes	PBC	Descriptive Norms	Social Norms	Prototype- Perception	Self- Efficacy	Past behaviour
Behavioural Willingness	5.29	1.18	.704 **	.239 **	.219 **	.173 *	.523 **	.436 **	.176 *
Behavioural Intentions	5.92	1.19	.526 **	.269 **	.158*	.152 *	.403 **	.625 **	.138 *
Predictor									
Attitudes	5.33	1.28	--						
PBC	5.74	1.61	.143 **	--					
Descriptive Norms	3.63	3.90	.210 **	.088	--				
Social	16.56	10.14	.123	-.008	.376	--			

	M	SD							
Norms					**				
Prototype-Perception	80.92	16.28	.460**	.193**	.170*	.137*	--		
Self-Efficacy	5.93	1.31	.353**	.113	.074	.089	.266**	--	
Past behaviour	1.65	.48	.145*	-.088	-.053	.028	.097	.116	--

* $p < .05$; ** $p < .01$.

Table 4.26

Prediction of behavioural willingness towards exercising with yoga participants

Variable	*B*	SEB	β	*p*
Attitudes	.472	.056	.510**	<.001
PBC	.081	.039	.111*	.038
Descriptive Norms	.012	.017	.039	.486
Social Norms	.006	.006	.051	.357
Prototype Perception	.015	.004	.200**	.001
Self-efficacy	.157	.050	.174**	.002
Past behaviour	.180	.129	.073	.167
Constant	-.242	.440		

$R^2 = .578$; $F(7,155) = 32.65$, $p < .001$.

Table 4.27

Prediction of behavioural intentions towards exercising with yoga participants

Variable	*B*	SEB	β	*p*
Attitudes	.249	.060	.270**	<.001
PBC	.092	.042	.125*	.030
Descriptive Norms	-.006	.017	-.021	.738
Social Norms	.008	.007	.068	.266
Prototype Perception	.008	.004	.116	.066
Self-efficacy	.389	.052	.454**	<.001
Past behaviour	.082	.141	.033	.563
Constant	.924	.450		

$R^2 = .497$; $F(7,159) = 24.41$, $p < .001$.

4.4: Hypothesis 3: Results

Hypothesis three stated that the positive exerciser stereotype will not be seen across all exerciser stereotypes exercisers. To test this hypothesis, eight analyses of variance with activity level (active or non-active) as the independent variable and prototype-perception towards each of the 8 identified exerciser stereotypes (athletes, runners, older adults, yoga, weightlifters, jocks, overweight individuals and judgmental girls) as the dependent variables were conducted. If significant differences are found in the analysis we can say that active individuals

and non-active individuals do significantly differ in their prototype-perception ratings towards at least one of the eight exerciser stereotypes. This would mean that the positive exerciser stereotype is not shared between exercisers and non-exercisers and does not carry across all eight exerciser stereotypes. To identify the strength of these relationships effect sizes will also be examined. Cohen (1992) stated that small effect sizes are from .10 - .25, medium effect sizes are .25 - .40 and large effect sizes are above .40.

Significant between subject effects were found between active and non-active individuals on their prototype perception ratings of runners ($F(1,149)=4.38$, $p < .05$, Eta² = .029). To control for any in-group biases the analysis was conducted again without the inclusion of self-identified runners and the significant differences no longer remain ($p > .05$).

4.5 - Hypothesis 4: Results

Hypothesis four states that exercisers and non-exercisers will not share the same attitudes, self-efficacy, behavioural willingness and behavioural intentions towards the eight exerciser stereotypes, whether positive or negative (Martin, et. al., 2000; Martin Ginis & Leary, 2001; Rodgers, et. al., 2009). This hypothesis was tested by conducting eight ANOVAs with activity level (active or non-active) as the independent variable and attitudes towards each of the 8 identified exerciser stereotypes (athletes, runners, older adults, yoga, weightlifters, jocks, overweight individuals and judgmental girls) as the dependent variables. Three other separate analyses were also conducted with self-efficacy, behavioural willingness and

behavioural intentions as the dependent variable. Hypothesis three previously tested prototype perception opinions towards all eight exercisers stereotypes between active and non-active individuals and found no significant differences. Due to the large number of analyses being conducted, a Bonferroni correction will be applied. If the analyses conducted here find no significant differences between active and non-active individuals then we can state that exercisers and non-exercisers do share the same evaluations of the exerciser stereotypes. No significant differences between active and inactive individuals were found on attitudes and self-efficacy ($p > .05$).

Significant between subjects effects were found between active and non-active individuals and their behavioural willingness to exercise with athletes ($F(1,172)= 4.30$, $p < .05$, Eta²= .025), older adults ($F(1,172)=4.43$, $p < .05$, Eta²= .025) and weightlifters ($F(1, 172) = 6.52$, $p < .05$, Eta² = .037). To control for any possible in-group biases three ANOVA's were then conducted. One analysis with those that identified themselves as athletes excluded, a second analysis with older adults, and a third analysis with those that identified themselves as weightlifters excluded. Once any possible in-group biases were controlled for the significant differences found between active and inactive individual's behavioural willingness to exercise with either athletes, older adults or weightlifters were no longer found ($p > .05$).

After the removal of twelve outliers, which were causing significant effects (95, 95, 112, 155, 189, 182, 138, 98, 201, 201, 187 ,4), significant between subjects effects were found between active and non-active individuals and their

behavioural intentions to exercise with athletes (F(1,176) = 12.03, p < .05, Eta²= .064), jocks (F(1,176) = 6.34, p < .05, Eta²= .035) and weightlifters (F(1,181) = 14.70, p < .05, Eta²= .076; see table 4.28) that could not be attributed to in-group biases.

Table 4.28

Comparison of active and inactive individuals on behavioural intentions towards exercising with the eight exerciser stereotypes

Variable	n	M	SD	F	df	P
Athlete BI				12.03	1,176	.001
Inactive	71	2.61	1.35			
Active	115	6.23	1.04			
Elderly BI				2.94	1,176	Ns
Inactive	71	5.28	1.29			
Active	115	5.62	1.31			
Judgmental BI				2.45	1,178	Ns
Inactive	71	4.84	1.47			
Active	115	5.25	1.78			
Jock BI				6.34	1,176	.013
Inactive	71	4.76	1.54			
Active	115	5.39	1.62			
Overweight BI				3.65	1,177	Ns
Inactive	71	5.28	1.41			
Active	115	5.68	1.35			

	N	Mean	SD	F	df	sig
Runner BI				3.46	1,177	Ns
Inactive	71	5.62	1.24			
Active	115	5.97	1.21			
Weightlifter BI				14.70	1,181	.000
Inactive	71	4.69	1.69			
Active	115	5.56	1.37			
Yoga BI				2.91	1,171	Ns
Inactive	71	5.83	1.19			
Active	115	6.11	.95			

4.6: Results for between exerciser stereotypes analyses

Analyses were conducted to see if there were any between group differences on attitudes, self-efficacy, prototype-perception, behavioural willingness and behavioural intentions between the exercise sub-types. Five separate MANOVA analyses were conducted with exerciser association (5 levels: athletes, yoga, overweight individuals, weightlifters, runners) as the independent variable, one analysis had attitudes towards each of the eight exerciser stereotypes as the dependent variable, another with self-efficacy in the presence of each of the eight exerciser stereotypes, another with prototype-perception towards each of the eight exerciser stereotypes, another with behavioural willingness to exercise with each of the eight exerciser stereotypes and another with behavioural intentions to exercise with each of the eight exerciser stereotypes. Only five of the eight exercise groups were used as the independent variable because jocks, judgmental

girls and older adults had numbers that were too small to be included. These were conducted to see if exerciser stereotype identification would dictate how other exerciser stereotypes were evaluated.

4.6.1: Attitudes towards exercising with other exerciser stereotypes

A multivariate analysis of variance was conducted using exerciser association (5 levels: athletes, yoga, overweight individuals, weightlifters, runners) as the independent variable and attitudes towards each of the 8 identified exerciser stereotypes (athletes, runners, older adults, yoga, weightlifters, jocks, overweight individuals and judgmental girls) as the dependent variable. The multivariate effect was significant $F(32,392)=3.57$, $p<.001$, $Eta^2=.23$ (see table 4.29). Least Significant Difference (LSD) post hoc tests showed that, (i) Athletes had significantly higher attitudes towards exercising with athletes than did yoga participants (ii) Overweight individuals had significantly lower attitudes towards exercising with athletes than did athletes, runners, yoga participants and weightlifters. (iii) Athletes had significantly higher attitudes towards judgmental girls than did runners. (iv) Runners had significantly lower attitudes towards judgmental girls than did weightlifters. (v) Overweight individuals had significantly lower attitudes towards exercising with judgmental girls than did athletes, yoga participants and weightlifters. (vi) Athletes had significantly higher attitudes towards exercising with jocks than did runners. (vii) Overweight individuals had significantly lower attitudes towards exercising with jocks than did athletes, runners, yoga participants and weightlifters. (viii) Weightlifters had

significantly higher attitudes towards exercising with jocks than did runners. (ix) Overweight individuals had significantly higher attitudes towards exercising with overweight individuals than did athletes, runners, yoga participants and weightlifters. (x) Runners had significantly higher attitudes towards exercising with runners than did athletes, overweight individuals and weightlifters. (xi) Overweight individuals had significantly lower attitudes towards exercising with weightlifters than did athletes, runners and weightlifters. (xii) Weightlifters had significantly higher attitudes towards exercising with weightlifters than did athletes, runners and yoga participants. (xiii) Yoga participants had significantly higher attitudes towards exercising with yoga participants than did athletes, runners and weightlifters. (xiv) Weightlifters had significantly lower attitudes towards exercising with yoga participants than did athletes, runners and overweight individuals.

Table 4.29

Five exerciser stereotypes mean attitude towards exercising with each of the eight exerciser stereotypes

Identity	Attitudes towards exercising with: (Mean(SD))							
	Athletes	Older Adults	Judge Girls	Jocks	Over weight	Runner	Weight Lifters	Yoga
Athletes	6.40(.84) ‡1*2	4.60(1.36)	4.46(1.39) ‡1*3	4.70(1.66) ‡1*2	4.30(1.55) *	5.41(1.39) *	4.90(1.15) *1*2	5.36(1.43) *1*2
Runner	6.16(1.02) *2	4.80(1.51)	3.40(1.49) *1‡2	3.82(1.81) *1*2*3	4.33(1.39) *	6.16(1.00) ‡	4.72(1.49) *1*2	5.52(1.01) *1*2
Yoga	5.64(1.32) *1*2	4.45(1.52)	4.05(1.20) *3	4.12(1.80) *2	4.90(1.37) *	5.43(1.24) *	4.50(1.95) *1	6.55(.81) ‡1
Over weight	4.79(1.54) ‡2	5.10(1.14)	2.64(.96) ‡3	2.56(1.28) ‡2	6.10(.97) ‡	5.08(1.72) *	3.72(1.60) ‡2	5.64(.98) *2
Weight lifter	5.74(.71) *2	4.20(1.32)	4.28(.98) *2*3	5.05(.95) *2‡3	4.38(1.13) *	5.00(.88) *	5.82(.93) ‡1*2	4.46(1.44) *1‡2

‡ - Column comparison variable

Different subscripts represent significant differences among variables in columns

*p<.05; ** p<.01, ***p<.001.

4.6.2: Prototype-perception towards other exerciser stereotypes

A multivariate analysis of variance was conducted using exerciser association (5 levels: athletes, yoga, overweight individuals, weightlifters, runners) as the independent variable and prototype-perception towards each of the 8 identified exerciser sub-groups (athletes, runners, older adults, yoga, weightlifters, jocks, overweight individuals and judgmental girls) as the dependent variable. The multivariate effect was significant $F_{(32,352)}=2.45$, $p<.0001$, $Eta^2=.18$. Least Significant Difference (LSD) post hoc tests showed that (see table 4.30), (i) Athletes had significantly higher prototype-perception of athletes than did yoga participants, overweight individuals and weightlifters. (ii) Weightlifters had significantly lower prototype-perception of athletes than did runners. (iii) Runners had significantly higher prototype-perception of older adults than did athletes, yoga participants and weightlifters. (iv) Athletes had significantly higher prototype-perception of judgmental girls than did runners. (v) Overweight individuals had significantly lower prototype perception of judgmental girls than did athletes and yoga participants. (vi) Yoga participants had significantly higher prototype-perception of overweight individuals than did weightlifters. (vii) Runners had significantly higher prototype-perception towards runners than did athletes, yoga participants, overweight individuals and weightlifters. (viii) Weightlifters had significantly higher prototype-perception towards weightlifters than did overweight individuals. (ix) Weightlifters had significantly lower prototype-perception of yoga participants than did runners, yoga participants and overweight individuals.

Table 4.30

Five exerciser stereotypes mean prototype-perception of each of the eight exerciser stereotypes

	Prototype-perception of: (Mean(SD))							
	Athletes	Older Adults	Judge Girls	Jocks	Over weight	Runner	Weight Lifters	Yoga
Athletes	92.78	77.22	62.78	64.72	53.33	80.83	70.83	81.39
	(8.49)‡¹	(16.49)*	(27.63)‡¹*²	(25.91)	(25.97)	(15.92)*	(20.48)	(16.41)
Runners	87.92	87.92	45.83	58.75	52.08	95.83	67.92	85.00
	(17.93)*²	(13.50)‡	(24.30)*¹	(23.28)	(28.43)	(7.17)‡	(22.45)	(17.44)*
Yoga	79.23	70.00	58.46	61.54	46.92	79.23	67.69	84.61
	(21.00)*¹	(27.39)*	(24.78)*²	(12.81)	(24.28)‡	(21.39)*	(17.87)	(12.66)*
Over weight	80.91	81.82	36.36	50.00	50.91	81.82	61.82	86.36
	(19.21)*¹	(18.88)	(20.63)‡²	(28.98)	(19.72)	(20.40)*	(12.50)*	(18.04)*
Weight lifter	76.15	68.46	56.15	66.92	67.69	72.31	80.00	73.07
	(15.02)*¹‡²	(20.35)*	(19.38)	(16.52)	(15.36)*	(19.64)*	(9.13)‡	(13.77)‡

‡ - Column comparison variable

Different subscripts represent significant differences among variables in columns

*p<.05; ** p<.01, ***p<.001.

4.6.3: Self-efficacy towards exercising with other exerciser stereotypes

A multivariate analysis of variance was conducted using exerciser association (5 levels: athletes, yoga, overweight individuals, weightlifters, runners) as the independent variable and self-efficacy in the presence of each of the 8 identified exerciser sub-groups (athletes, runners, older adults, yoga, weightlifters, jocks, overweight individuals and judgmental girls) as the dependent variable. The multivariate effect was significant $F(32,380)=2.23$, $p<.0001$, $Eta^2=.16$. Least Significant Difference (LSD) post hoc tests showed that (see table 4.31), (i) Overweight individuals had significantly lower self-efficacy in the presence of athletes than did athletes, runners, yoga participants and weightlifters. (ii) Weightlifters had significantly lower self-efficacy in the presence of older adults than did runners, yoga participants and overweight individuals. (iii) Overweight individuals had significantly lower self-efficacy in the presence of jocks than did athletes, runners and weightlifters. (iv) Weightlifters had significantly lower self-efficacy in the presences of overweight individuals than did yoga participants and overweight individuals. (v) Overweight individuals had significantly lower self-efficacy in the presences of runners than did athletes, runners and yoga participants. (vi) Weightlifters had significantly lower self-efficacy in the presences of runners than did athletes, runners and yoga participants. (vii) Weightlifters had significantly higher self-efficacy in the presence of weightlifters than did yoga participants and overweight individuals. (viii) Weightlifters had significantly lower self-efficacy in the presence of yoga

participants than did athletes, runners, yoga participants and overweight

individuals.

Table 4.31

Five exerciser stereotypes mean self-efficacy in the presence of each of the eight exerciser stereotypes

Identity	Self-efficacy in the presence of: (Mean(SD))							
	Athletes	Older Adults	Judge Girls	Jocks	Over weight	Runner	Weight Lifters	Yoga
Athletes	6.62(.68) ***	5.38(1.69)	5.73(180)	6.24(1.01) **	5.54(1.83)	6.22(1.06) *1**2	5.97(1.07)	6.22(1.20) **
Runners	6.30(.87) **	5.92(1.57) **	5.74(1.91)	5.81(1.33) *	5.74(1.74)	6.55(.75) **1***2	5.96(1.22)	6.48(.70) ***
Yoga	6.07(1.77) *	5.93(1.73) *	6.43(.75)	5.78(1.48)	6.36(.93) *	6.28(1.14) *1**2	5.14(2.51) *	6.43(1.16) **
Over weight	5.15(1.91) ‡	6.15(1.46) **	5.15(2.11)	4.77(2.49) ‡	6.23(1.16) *	5.38(1.71) ‡1	5.15(1.52) *	6.23(1.16) **
Weight lifter	6.23(.60) *	4.31(2.21) ‡	5.31(1.55)	6.08(.86) *	4.85(1.95) ‡	4.92(1.93) ‡2	6.46(.52)‡	5.00(1.68) ‡

‡ - Column comparison variable

Different subscripts represent significant differences among variables in columns

*p<.05; ** p<.01, ***p<.001.

4.6.4: Behavioural willingness towards exercising with other exerciser

stereotypes

A multivariate analysis of variance was conducted using exerciser association (5 levels: athletes, yoga, overweight individuals, weightlifters, runners) as the independent variable and behavioural willingness to exercise with each of the 8 identified exerciser sub-groups (athletes, runners, older adults, yoga, weightlifters, jocks, overweight individuals and judgmental girls) as the dependent variable. The multivariate effect was significant $F(32,392)=3.91$, $p<.0001$, $Eta^2=.24$. Least Significant Difference (LSD) post hoc tests showed that (see table 4.32) (i) Athletes had significantly higher behavioural willingness to exercise with athletes than did runners, yoga participants, overweight individuals and weightlifters. (ii) Overweight individuals had significantly lower behavioural willingness to exercise with athletes than runners, yoga participants and weightlifters. (iii) Athletes had significantly higher behavioural willingness to exercise with judgmental girls than did runners and overweight individuals. (iv) Yoga participants had significantly higher behavioural willingness to exercise with judgmental girls than did runners and overweight individuals (v) Athletes had significantly higher behavioural willingness to exercise with jocks than did runners and overweight individuals. (vi) Overweight individuals had significantly lower behavioural willingness to exercise with jocks than did athletes, yoga participants and weightlifters. (vii) Weightlifters had significantly higher behavioural willingness to exercise with jocks than did runners. (viii) Overweight individuals had significantly higher behavioural willingness to exercise with

overweight individuals than did athletes, runners, yoga participants and weightlifters. (ix) Runners had significantly higher behavioural willingness to exercise with runners than did athletes and weightlifters. (x) Weightlifters had significantly higher behvioural willingness to exercise with weightlifters than did athletes, runners, yoga participants and overweight individuals. (xi) Yoga participants had significantly higher behavioural willingness to exercise with yoga participants than did athletes and weightlifters.

Table 4.32

Five exerciser stereotypes mean behavioral willingness to exercise with each of the eight exerciser stereotypes

Identity	Behavioural Willingness towards: (Mean(SD))							
	Athletes	Older Adults	Judge Girls	Jocks	Over weight	Runner	Weight Lifters	Yoga
Athletes	6.36(.70) ‡1	4.56(1.10)	4.53(1.36) ‡1	4.86(1.47) ‡1***2	4.35(1.07) ***	5.40(1.14) *	4.86(1.14) **	5.39(1.28) *
Runners	5.84(1.02) *1**2	4.84(1.03)	3.49(1.24) **1*2	3.92(1.34) **1*3	4.30(1.04) ***	6.03(.89)‡	4.42(1.16) ***	5.59(1.13)
Yoga	5.46(1.42) **1*2	4.71(1.53)	4.30(1.10) ‡2	4.50(1.50) *2	4.80(1.33) *	5.64(1.24)	4.52(1.48) **	6.18(1.04) ‡
Over weights	4.69(1.18) ***1‡2	4.61(1.17)	3.35(.80) **1*2	3.29(1.07) ‡2	5.74(1.23) ‡	5.32(1.11)	4.20(1.24) ***	5.75(.99)
Weight lifters	5.65(.62) *1*2	4.75(.97)	4.21(1.03)	5.17(.99) *2‡3	4.60(.95) **	5.00(1.11) **	5.88(.63) ‡	5.04(1.20) *

‡ - Column comparison variable

Different subscripts represent significant differences among variables in columns

*p<.05; ** p<.01, ***p<.001.

4.6.5: Behavioural Intentions towards exercising with other exerciser stereotypes

A multivariate analysis of variance was conducted using exerciser association (5 levels: athletes, yoga, overweight individuals, weightlifters, runners) as the independent variable and behavioural intentions to exercise with each of the 8 identified exerciser sub-groups (athletes, runners, older adults, yoga, weightlifters, jocks, overweight individuals and judgmental girls) as the dependent variable. The multivariate effect was significant $F(32,388)=2.17$, $p<.0001$, $Eta^2=.15$. Least Significant Difference (LSD) post hoc tests showed that (see table 4.33) (i) Athletes had significantly higher intentions to exercise with athletes than did yoga participants and overweight individuals. (ii) Yoga participants had significantly higher intentions to exercise with judgmental girls than did overweight individuals. (iii) Overweight individuals had significantly lower intentions to exercise with jocks than did athletes, yoga participants and weightlifters. (iv) Runners had significantly higher intentions to exercise with runners than weightlifters did. (v) Overweight individuals had significantly lower behavioural intentions to exercise with weightlifters than did athletes, runners and weightlifters. (vi) Weightlifters had significantly lower behavioural intentions to exercise with yoga participants than did runners, yoga participants and overweight individuals.

Table 4.33

Five exerciser stereotypes mean behavioral intentions to exercise with each of the eight exerciser stereotypes

Identity	Behavioural Intentions towards: (Mean(SD))							
	Athletes	Older Adults	Judge Girls	Jocks	Over weight	Runner	Weight Lifters	Yoga
Athletes	6.64(.69) ‡	5.59(1.17)	5.37(1.60)	5.76(1.54) **	5.59(1.24)	6.04(1.11)	5.61(1.20) *	6.02(.99)
Runner	6.37(.91)	5.72(1.22)	5.11(1.98)	5.30(1.65)	5.77(1.54)	6.44(1.17) ‡	5.66(1.51) *	6.46(.73) *
Yoga	5.89(1.65) *	5.25(1.93)	5.85(1.33) ‡	5.61(1.54) *	5.96(1.10)	5.78(1.15)	5.61(1.79)	6.57(.92) *
Over weight	5.69(1.54) **	6.07(1.76)	4.57(1.62) *	4.27(1.57) ‡	6.35(1.43)	6.03(1.34)	4.57(2.02) ‡	6.46(1.01) *
Weight lifter	6.00(.84)	5.15(1.49)	5.27(1.53)	5.84(1.49) *	5.31(1.35)	5.35(1.21) **	6.27(.63)* *	5.57(1.78) ‡

‡ - Column comparison variable

Different subscripts represent significant differences among variables in columns

*p<.05; ** p<.01, ***p<.001.

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Chapter 5: Discussion

The present study sought to contribute to the existing literature on exerciser stereotypes. Findings revealed that classifying all people who are physically active into one encompassing exerciser group may mask important differences among exercisers. Results from the pilot study suggested that exerciser is not a homogeneous term and at least eight types of exerciser stereotypes were identified: athletes, runners, weightlifters, jocks, yoga participants, judgmental girls, older adults and overweight individuals. Each stereotype was identified to be distinct from each other, having their own qualities and characteristics. Participants held a clear and distinct image of each of the eight exerciser stereotypes (Ouellette et. al., 2005). Knowing that eight exerciser stereotypes exist, a need arose to develop a model capable of explaining the influences that people who match these exerciser stereotypes may have on each other. In order to address this need an adaptation of the PWM was created. This adapted PWM was created to take into account the possible social and cognitive influences that can influence behaviour within the fitness center setting.

5.1: The Adapted Prototype Willingness Model

The adapted PWM posits that attitudes, subjective norms, descriptive norms, self-efficacy, past behaviour and prototype perception will all be positively correlated with behavioural willingness and behavioural intentions (Gerrard et. al. 2008), hypothesis one posited the same. Correlations among attitudes, subjective norms, self-efficacy and prototype perception with

behavioural willingness and behavioural intentions were consistent with hypothesis one in all eight exerciser stereotypes. Yet past behaviour and descriptive norms were not consistently correlated to behavioural willingness and behavioural intentions in all eight of the exerciser stereotypes.

Hypothesis two posited that the PWM will predict behavioural willingness and behavioural intentions towards exercising with each of the eight stereotypes. The proportion of explained variance across the multiple regressions ranged from 37% (BI for judgmental girls) to 72% (BW for jocks). According to Cohen (1988), these are very large effects. These large effects indicate that the adapted PWM is useful for predicting behavioural willingness and behavioural intentions to engage in exercise with each of the eight stereotypes and is consistent with hypothesis two.

5.1.1: Attitudes

Attitudes were consistently the best predictor for both behavioural intentions and behavioural willingness, which is consistent with previous PWM literature (Gibbons et. al., 1998) and previous social cognitive literature (Azjen, 1991; Armitage & Conner, 2001). Attitudes were also the only variable which significantly predicted both behavioural willingness and behavioural intentions for all eight exerciser stereotypes.

5.1.2: Prototype-Perception

Prototype-perception was the second best predictor of behavioural willingness. Prototype-perception significantly predicted behavioural willingness for all eight exerciser stereotypes. The predictive role of prototype-perception in the PWM varies between studies, and appears to be dependent on the behaviour in question. Studies show that the more negative the prototype being rated, the more predictive prototype-perception becomes of behavioural willingness (Piko, Bak & Gibbons, 2007; Blanton, VandenEijnden, Buunk, Gibbons, Gerrard & Bakker, 2001). However, exerciser stereotype literature shows that exerciser stereotypes are considered to be a positive prototype. Therefore, the predictive ability of prototype-perception may have been more powerful if the exerciser stereotypes were considered to be negative.

5.1.3: Self-efficacy

The second best predictor for behavioural intentions was self-efficacy. Self-efficacy and attitudes were the only two variables to significantly predict behavioural intentions for all eight exerciser stereotypes. Self-efficacy's strong and consistent prediction of behavioural intentions is consistent with previous literature (McAuley, 1993; Dishman, Darracott & Lambert, 1992; Rodgers, Hall, Blanchard, McAuley & Munroe, 2002; Rovniak, Anderson, Winett & Stephens, 2002).

5.1.4: Perceived behavioural control

Next to attitudes and prototype-perception, PBC was the third best predictor of behavioural willingness for all eight exerciser stereotypes. PBC also significantly predicted behavioural intentions for all but two of the eight exerciser stereotypes (athletes and jocks). PBC's prediction of behavioural willingness is similar to the results of a study by Rivis and colleagues (2006) in which PBC was found to be the third best predictor of behavioural willingness next to attitudes and past behaviour.

The differences between PBC and self-efficacy have been previously investigated (Rodgers, Conner & Murray, 2008). The most notable distinction is made when the behaviour in question is not entirely within the control of the participant. In this situation PBC should be the stronger predictor compared to self-efficacy, which concerns an individual's confidence in their ability to perform a specific behaviour. When a participant indicates their behavioural willingness to participate in a behaviour, this willingness is dependent on the social situation (Gerrard et. al., 2008). This dependence on the social situation indicates some ambiguity about the amount of control the participant themselves have. This may be why there is a strong correlation with PBC and behavioural willingness and a stronger correlation between self-efficacy and behavioural intentions.

5.1.5: Subjective Norms

Subjective norms significantly predicted behavioural willingness or behavioural intentions in three cases (behavioural intentions to exercise with athletes, behavioural willingness and behavioural intentions to exercise with judgmental girls), yet the variable was significantly correlated with behavioural intentions and behavioural willingness for all eight exerciser stereotypes. The weaker predictive abilities of this construct are consistent with previous findings (Armitage & Conner, 2001; Rivis et. al. 2006) and are what prompted the addition of descriptive norms to the PWM in a study by Rivis and colleagues (2006).

5.1.6: Descriptive norms

Descriptive norms were not significantly correlated with behavioural willingness or behavioural intentions to exercise with older adults. The lack of correlation between descriptive norms and both behavioural willingness and behavioural intentions was likely a result of a young participant sample. The mean age of the sample was twenty-six, whereas in the descriptor older adults were described as sixty-four years old. The descriptive norms question makes reference to the five people a participant knows best. It is likely that this selection of five people did not include many sixty-four years olds for our relatively young sample. If this was the case, participants would indicate knowing very few important individuals around the age of sixty-four. However they still could indicate high behavioural willingness and high behavioural intentions to exercise with older adults. Furthermore, subjective norms are still correlated with both

behavioural willingness and behavioural intentions. Therefore, according to subjective norms results, individuals are still feeling perceived pressure to exercise with older adults, yet identify no important others that they would classify as an older adult.

In addition, no significant correlation was found between descriptive norms and behavioural intentions to exercise with overweight individuals. This non-significant correlation between descriptive norms and behavioural intentions may be a reflection of individuals' unwillingness to classify their friends as overweight and therefore lowering their number of important others whom are overweight. Further, subjective norms are still correlated with both behavioural willingness and behavioural intentions. Therefore, individual's are still feeling perceived pressure to exercise with overweight individuals, yet may be unwilling to classifying their important others as overweight.

The significant correlations found in the other six stereotypes between descriptive norms and behavioural willingness and behavioural intentions are consistent with the findings of Rivis and colleagues (2006). This study showed that descriptive norms did contribute to the PWM yet was not found to receive significant beta weights for predicting behavioural intentions to exercise.

5.1.7 Past behaviour

The past behaviour measure used in the adapted PWM was not significantly correlated with either behavioural intentions or behavioural willingness to exercise with runners, jocks, overweight individuals, or judgmental

girls and was overall a poor predictor of behavioural willingness and behavioural intentions. This finding may have been due to the past behaviour measure used within this study. The questionnaire used to measure past behaviour, the GLTEQ, examines a participant's typical exercise week (Godin & Shepard, 1997). By examining only the previous week, behaviours that occurred further into the past may have been overlooked. These past behaviours that were not measured can still influence an individual's behavioural willingness and behavioural intentions to exercise with the exerciser stereotypes. Therefore, the unmeasured past behaviours could still be influencing individual's behavioural intentions and behavioural willingness in this study. This may be why there is a lack of correlation between past behaviour and behavioural willingness and behavioural intentions for some of the exerciser stereotypes. This would also explain past behaviour's limited predictive ability of behavioural intentions and willingness, which has previously been shown to be fairly predictive of these two constructs (Rivis et. al., 2006; Gerrard et. al. 2008).

5.2: The positive exerciser stereotype

Previous research has shown that significant evaluative differences are made of exercisers and non-exercisers (Shields, Brawley, Martin Ginis, 2007; Martin et. al., 2000; Faulkner, Simone, Irving, Martin Ginis, 2007; Martin Ginis et. al., 2003; Rodgers et. al., 2009; Hodgins, 1992; Martin & Leary, 2006). However, hypothesis three in this study stated that the positive exerciser stereotype would not be seen across all exercisers because of some of the negative

connotations identified in the descriptors of the exercisers (i.e. judgmental girls, jocks, overweight individuals). Results showed that prototype-perception ratings of the eight exerciser stereotypes were not significantly different between active and non-active individuals. This finding may imply that the positive exerciser stereotype applies to all eight exerciser stereotypes, which is inconsistent with hypothesis three. While these results do not support hypothesis three, this finding adds to the strength of the positive exerciser stereotype. Martin et. al. (2000) stated that presenting oneself as an exerciser is associated with being perceived in a positive manner. The current study expands on this by showing that individuals will be perceived in a positive manner regardless of what type of exerciser they choose to be. Even those exercisers associated with negative characteristics (intimidating, show-off, judgmental, unhealthy) were still rated similarly to the other five exerciser stereotypes by active and in-active individuals.

5.3: Exerciser and non-exerciser evaluations of the exerciser stereotypes

Hypothesis four stated that exercisers and non-exercisers will rate the exerciser stereotypes similarly, regardless of whether this evaluation is positive or negative. This hypothesis was partially supported as no significant differences were found between exercisers and non-exercisers on attitudes, self-efficacy and behavioural willingness towards each of the eight exerciser stereotypes. Yet significant differences were found between exercisers and non-exercisers on behavioural intentions to exercise with athletes, jocks and weightlifters. Examination of the descriptors associated with these three exerciser stereotypes

may provide some insight into these results. Athletes, jocks and weightlifters could appear to be quite intimidating for the non-exerciser who has no previous experiences with these stereotypes. Athletes' 'focus' and 'determination', weightlifters' 'bulky' and 'intimidating' and jocks' 'intense' and 'show-off' characteristics may be the reason for non-active individuals' significantly lower behavioural intentions. Of the eight exerciser stereotypes these three may appear to be the most intimidating to a non-exerciser. This intimidation could be the cause for non-exerciser's lower behavioural intentions to exercise with athletes, jocks and weightlifters. According to the adapted PWM these lower behavioural intentions could mean that non-exercisers would be least likely to exercise with athletes, jocks and weightlifters compared to the other five exerciser stereotypes.

5.4: Evaluative differences between exerciser stereotypes

5.4.1: Overweight Individuals

Analyses showed that overweight individuals held many significantly different attitudes, prototype-perceptions, behavioural willingness, behavioural intentions and self-efficacy ratings towards the other exerciser stereotypes. The recurring theme is lower ratings towards athletes, jocks and judgmental girls. Close examination of the descriptors associated with each of these three stereotypes may provide some explanation for this finding. It is possible that jocks' 'intense' and 'show-off' behaviour, athletes' 'competitive' and 'healthy' characteristics, as well as judgmental girls' 'judgmental' characteristic are exacerbating overweight individuals' 'unhealthy' and 'self-conscious' tendencies.

Similar to how non-exercisers showed significantly lower behavioural intentions to exercise with jocks and athletes. Studies have repeatedly shown the negative social reactions towards overweight individuals can come from employers, peers, and even health professionals (Rothblum, Miller & Garbutt, 1988; Pagan & Davilla, 1997; Neumark-Sztainer, Story & Faibisah, 1998; Teachman & Brownell, 2005; O'Brien, Hunter & Banks, 2007). Because even health professionals have negative social reactions towards overweight individuals, it is possible that overweight individuals may feel that the same negative social reactions may also be endorsed by these exerciser stereotypes. This in turn would cause these lower ratings towards exercising with these individuals. According to the adapted PWM these significantly lower variable scores towards these three exerciser stereotypes would suggest that overweight individuals would be unlikely to participate in exercise in the presence of judgmental girls, athletes and jocks.

This unlikeness to participate in exercise in the presence of judgmental girls, athletes and jocks may be exacerbating overweight individuals' already existing barriers towards physical activity. Studies have found that overweight individuals have lower self-efficacy and attitudes towards physical activity than those individuals of normal weight (Deforche, Bourdeaudhuij & Tanghe, 2006; Trost, Kerr, Ward & Pate, 2001). Furthermore, it has been found that overweight individuals who exercise alone at home have significantly better weight loss compared to those who exercise in a group (Perri, Martin, Leermakers, Sears & Notelovitz, 1997). So, separation from other groups may be beneficial to

overweight individuals. This would imply that if a gym were to focus on a

demographic of individuals who were trying to lose weight or new to exercise,

creating a fitness center population that does not consist primarily of judgmental

girls, athletes and jocks would be beneficial. An example of a commercial gym

that attempts to create such an environment may be "Curves", a women-only gym

that promotes fitness for women of all ages, shapes and abilities.

5.4.2: Weightlifters

Second to overweight individuals, analyses also showed that weightlifters

held many significantly different attitudes, prototype-perceptions, behavioural

willingness, behavioural intentions and self-efficacy ratings towards the other

exerciser stereotypes. Unlike overweight individuals, whose negative ratings

towards others seems to come from their assigned 'self-conscious' descriptor,

weightlifters have been shown to be quite confident (Schwerin, Corcoran, Fisher,

Patterson, Askew, Olrich & Shanks, 1996; Pickett, Lewis & Cash, 2005). This

would imply that weightlifters are probably not being intimidated or made self-

conscious by the presence of yoga participants. Weightlifters have been found to

exist within their own subculture and to rely on each other for social support

(Hurst, Hale, Smith & Collins, 2000). If yoga participants, who are 'spiritual', as

opposed to 'bulky' and 'intimidating' were to exercise in the same environment as

weightlifters they would likely be perceived as an out-group. These out-group

members are then rated in a negative manner and weightlifters may have a

tendency to avoid working out with these other groups simply because they are

not part of the weightlifting group (Hamilton & Sherman, 1994). These observations are endorsed when we look at fitness centers such as the original Gold's Gyms, which were specifically targeted towards weightlifters. The adapted PWM will also indicate that weightlifters would be less likely to exercise in an environment where yoga participants were present.

5.4.3: Triadic reciprocal causation

Personal factors and the external environment interact to determine human behaviour, yet the influence of each will vary depending on the behaviour and the circumstances in which it is performed (Bandura, 1997). Six of the eight exerciser stereotypes showed no differences in their exercise related cognitions in the presence of other exerciser stereotypes. Since these six exerciser stereotypes were rating the same external exercise environments, it may be concluded that their personal dispositions, which interpreted these external stimuli must be similar. However both weightlifters and overweight individuals showed differing exercise behaviour cognitions when rating the same external exercise environments. This finding may imply that that their personal dispositions are different. Therefore, these results further support the premise that weightlifters and overweight individuals are different and separate from each other and other exerciser stereotypes.

5.4.4: In-group biases

Both overweight individuals and weightlifters demonstrated in-group biases, significantly preferring their group to an out-group. Athletes, runners and yoga participants also showed many examples of in-group biases. These results are consistent with findings reported by Hamilton and Sherman (1994) and support the idea that these five exerciser stereotypes perceive themselves to be different and distinct from other exercisers. This perceived distinction further supports the use of prototype-perception within the study. In other words, if the exerciser stereotypes had difficulty distinguishing themselves from each other, then they should be classified as exerciser sub-types. Since exerciser sub-types would have shared similar qualities they also would have shared similar prototype-perception ratings between each other.

5.5: Limitations

The present study set out to first identify if different types of exerciser stereotypes exist. These aims were met but, in doing so, the non-exerciser was overlooked. The addition of a non-exerciser stereotype to the study would have strengthened the positive exerciser stereotype findings. However, the addition of another stereotype would have added to the already lengthy questionnaire.

The past behaviour measure was also a limitation within this study as previously discussed. If a measure was used that could take into account those behaviours that occurred further into the past stronger correlations between past behaviour and behavioural intentions and behavioural willingness may have been

seen. The questionnaire could have also benefited from the refinement of the exerciser association question which was open ended, allowing participants to put down as many exerciser associations as they wanted. When examining the evaluative differences between the exerciser stereotypes, it was possible to use only one of these associations. Because of this we cannot be totally confident that we used the exerciser identity that the participant associated themselves with the most.

Some analyses would have also benefited from a larger sample size for each of the specific exerciser stereotypes. A larger sample size for each of the eight exerciser stereotypes would have enabled more comprehensive analyses when comparing the evaluative differences between the eight stereotypes.

Further the use of MANOVA analyses in replacement of multiple ANOVA analyses would have also strengthened the findings. However, according to Tabachnick and Fidell (2001, pg. 357) "the only advantage to MANOVA over separate ANOVAs on each DV is control of familywise Type I error." This increased risk can be controlled for though a Bonferroni correction. Results within this study using ANOVA show very small p values (<.001, <.001 and .013). These low values may imply that MANOVA post-hoc analysis would have shown the same results.

In light of these limitations, the current study provides a starting point for further examination of exerciser stereotypes and the influences these exerciser stereotypes can have on each other.

5.6: Future Directions

This study provides a good starting point for further research concerning individuals perceptions of exerciser stereotypes, as well as the possible behavioural influences that these exercise stereotypes can have on individuals. In the future research could be conducted to see if both males and females rate the eight exerciser stereotypes in the same manner. There may be gender differences because in some scenarios there was a gender associated with the exerciser stereotype. This gender association may then affect how members of the opposite sex perceive the exerciser stereotypes. For example, females may rate weightlifters more negatively then males do simply because of in-group biases. Further, studies could also explore if cultural background could have any possible effect on individual's perceptions of the eight exerciser stereotypes. One study found that Japanese focus on the context more than Westerners' do, who focus on the individual (Masuda, Ellsworth, Mesquita, Leu, Tanida & Van de Veerdonk, 2008). This may imply that when focusing on an exerciser stereotype, Japanese are more likely to focus on the fitness center context as opposed to the sole exerciser, which would have an affect on their perceptions of individuals within that environment.

The adapted PWM showed large effects in predicting behavioural intentions and behavioural willingness, in the future a study assessing how accurately these two constructs predict actual behaviour would be beneficial. In doing this we could be better able to predict future exercise behaviour in the

presence of the eight exerciser stereotypes. Further this study could investigate and compare the predictive abilities of behavioural willingness and behavioural intentions in relation to each other. Since the prototypes used in this study were not rated negatively, and thus the behaviour itself is not negative, behavioural willingness may not be a stronger predictor of actual behaviour when compared to intentions. If this were to be the case then the inclusion of behavioural willingness within this model may not be a required construct.

Another possible future direction would be to compare individual's ratings of exerciser stereotypes before and after exercising with one of the eight exerciser stereotypes. This would allow researchers to determine if the actual act exercising in the presence of these eight exerciser stereotypes can have an influence on stereotype perceptions. Perhaps pre-held beliefs about the exercisers, based on very little information, would change after the act of actually exercising with the stereotype. For instance, if an individual who had never exercised with weightlifter before thought that weightlifters were intimidating these perceptions may change in a positive manner after actually interacting with a weightlifter. If this were to be the case, exposure to the fitness center setting and the individuals who operate within it would aid in positively influencing exerciser perceptions.

5.7: Conclusion

The current study was one of the first to identify the existence of exerciser stereotypes. In order to further understand the influences that these exerciser stereotypes can have on each other an adapted version of the PWM was utilized.

It was found that the adapted PWM had very large effect sizes in predicting

behavioural willingness and behavioural intentions. Analyses using the adapted

PWM found that the positive exerciser stereotype applies to each exerciser

stereotype regardless of any possible negative connotations given in the

exerciser's descriptor. These findings strengthen the scope of the positive

exerciser stereotype.

The current study also identified two exerciser groups that were unique

from the other exerciser stereotypes. Both weightlifters and overweight

individuals stood out as the most distinctive exerciser stereotypes. Findings

suggest that overweight exercisers would be more likely to exercise in a fitness

center environment absent of judgmental girls, weightlifters and jocks. This is

potentially very valuable information when trying to encourage the use of fitness

centers as a means of achieving physical activity for personal health. A fitness

center that is more centered towards the needs of overweight individuals could

possibly help increase adherence to an exercise program, and in turn have a

positive effect on individual's personal health. Similarly, opinions that

weightlifters held about people who do yoga strengthened the idea that

weightlifters exist in their own subculture. This weightlifting subculture has given

rise to gyms such as Gold's gym.

According to the adapted PWM, overweight individuals would be more

likely to exercise in an environment void of judgmental girls, weightlifters and

jocks and weightlifters would be more likely to exercise in an environment void

of yoga participants. Furthermore, the positive exerciser stereotype does seem to

apply to all types of exercisers, regardless of any negative descriptors associated with these exercisers.

Chapter 5 - References

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Appendix 1 – Review of Literature: Stereotypes - Outgroups

What is interesting about defining an individual as belonging to a certain out-group is that, at any one time, it is probable that we could also classify that person into a multiple array of out-groups, based upon characteristics such as race, gender, clothing, activities and so on. However, it is currently not known how we determine which category is the dominant representative category for any one person (Hamilton & Sherman, 1994).

The defining of out-group members is done because we generally cannot take the time to process all types of new information, as this is as an exhausting and very time consuming practice (Lippman, 1991). Therefore, the stereotyping process, when seen as a shortcut, may free up cognitive resources, which can then be put towards other tasks (Macrae, Milne & Bodenhausen, 1994). As opposed to taking the time to find out certain details about every person we perceive, we instead notice a certain trait that we are familiar with and then fill in information about this person based upon the stereotype that we associate with this trait. This way of using stereotypes as paths to find characteristic information about others results in individuals defining people first and getting to know them later (Lippman, 1991). The biased nature of this process can even go as far as leading people to see what they are expecting to see even in the face of objective evidence (Snyder, 1984). However, generally the stereotypes ascribed to a certain individual are often ignored or under-used in the presence of further contradictory information directly received about the individual (Kunda & Sherman-Williams, 1993). It is most commonly believed that stereotyping individuals leads to

stereotypes that are inaccurate, but in rare cases, formed stereotypes can be accurate representations of out-group members (Swim, 1994; Judd & Park, 1993). Regardless, this process generally is inaccurate and can result in incorrect attitudes towards individuals, which shape how we behave in front of these individuals.

Yet if we are consciously aware of the possible negative reactions that can result from stereotyping, we can then engage in stereotype suppression in an attempt to refrain from stereotyping others. Wegner (1994) explains that in the act of stereotype suppression we self monitor. This process is the act of consciously being aware of our thoughts. The irony is that to self-monitor we need to know what we are monitoring for, thus we need the thoughts that we are trying to avoid (i.e., incorrect stereotypes) to be consciously recognized. Self monitoring then can affect how we behave in the presence of other individuals. The process of self-monitoring is an excellent example of how far reaching stereotypes can be in affecting human behaviour. If stereotypes can affect our behaviour and the stereotyping process can occur within the fitness center, we should be researching what exactly these possible behavioural effects may be.

A1.1: Stereotypes and Behaviour

In encountering another individual in our social setting we automatically stereotype this individual, which can lead to many behavioural consequences. Once an individual has been stereotyped the perceiver behaves towards the out group member as if they believed the stereotype to be true (Chen & Bargh, 1997).

The initial cues that determine how an individual is perceived are usually through primes. Priming is defined as the "incidental activation of knowledge structures, such as trait concepts and stereotypes, by the current situational context" (Bargh, Chen & Burrows, 1996). Priming affects not only our perceptions of others but can also affect our behaviour. Our previous experiences determine how we interact within our environment, how we interpret information, and how that information is stored for later use (Sedikides & Skowronski, 1991). Furthermore our present experiences can be strongly influenced by our immediate social environment (Dijksterhuis, Spears & Lepinasse, 2001). These influences make for a very complex cognitive and implicit process.

The result of these cognitive and implicit processes can affect not just our basic behaviours but very complex behaviours can also be activated through the implicit priming of behaviour relevant cognitive cues (Johnston, 2002). How an implicit cue can activate a behaviour is thought to be the result of a shared system in the memory for both perception and behaviour (Bandura, 1977). This means that the activation of a schema, for example an exercise schematic activated by a fitness advertisement, can in turn lead to the activation of behavioural tendencies and possibly actions (Johnston, 2002). This can be seen in the passive and unintentional changing of ones posture, mannerisms, facial expressions and other behaviours to match that of another individual (Chartrand & Bargh, 1999). Chartrand & Bargh (1996) explain this phenomenon by stating that viewing others in our environment creates perceptual activity that non-consciously activates behavioural representations of the observation. This non-conscious

initiation of action is a regular response of normal cognitive functioning

(Johnston, 2002) and is said to be an energy and time saving process, because if

every action needed conscious awareness the time and resources that are required

for these processes would be quite substantial. One of the most well known

examples of priming inducing a behaviour is Bargh et al's 1996 study in which

participants who were primed with stereotypes associated with the elderly walked

slower than control participants when leaving the study room.

The concept of external cues influencing behaviour implicitly can be quite

unnerving to some individuals, but the idea that behaviour enacted through

stereotypical thinking can be avoided simply by suppressing stereotypical

thoughts provides its own problems. The problem being the same that applies to

self-monitoring for negative stereotype thinking (Wegner, 1994), in that

stereotype suppression has actually been found to lead to greater stereotype

accessibility and thus more stereotype use (Koole & van Knippenberg, 2007,

Dumont, Yzerbyt, Snyder, Mathieu, Comblain & Scaillet, 2003). This occurs

because in order to avoid stereotypical thinking, we have to know what the

stereotypical thinking is, and in turn activation occurs.

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Appendix 2: Exerciser Stereotypes

Exerciser stereotypes have received some attention in the past, although it still remains an area that requires further investigation. This need for further exercise stereotype research is made clear in a statement by Harrison (2001) in which he states that "sport and physical activity provide a fertile venue for the development, utilization and maintenance of stereotypes" (pg. 91). Harrison bases this statement on racial stereotypes that have been fuelled by historical theories designed to explain difference in race and performance, but there should be no reason as to why exerciser stereotypes should only be based on race.

At the broadest part of exercise stereotype research, one study based upon stereotypical body types and age groups found that across all age groups a mesomorphic body type was rated as more positively than an endomorph and ectomorph body type, regardless of participant gender. Also across the majority of age groups the endomorphic body type was rated the most negatively (Kirkpatrick & Sanders, 1978). As exerciser stereotype based research becomes more specific, race within the sport and physical activity domain has received abundant attention. Harrison (2001) states that this domain is one of the only areas in which African Americans are stereotyped as being superior in terms of performance when compared to European Amercians.

The previously mentioned studies have all focused on structured exercisers, those who participated in jogging or weight training. Martin Ginis, Latimer & Jung (2003) set out to find if these stereotypes still existed among those who performed less intense and unstructured forms of physical activity

within a North American university student population. The researchers found that the positive stereotypes typically associated with structured exercisers also extended to those that were less than regularly physically active. Findings also indicated that those who were categorized as excessive exercisers did not receive a positively rated personality stereotype and received ratings similar to those who were categorized as non-exercisers or who were in the control group. Although, the researchers did find that there was a positive in-group bias towards both exercisers and excessive exercisers compared to other groups, and that this in-group bias did not extend towards those who received moderate amounts of physical activity, classifying them as out-group members. Lindwall & Martin Ginis (2006) then sought to see if these trends would continue within a Swedish population, which has a stronger history of exercise and a higher population percentage of people who are physically active. This could imply that the Swedish population may be more consciously aware of the possible health benefits attained from exercise. Not surprisingly the Swedish sample had a higher percentage of exercisers than did the North American sample, yet both non-exercisers and exercisers showed the same positive stereotype towards exercisers, consistent with the North American samples (Martin et al., 2000; Martin Ginis et al., 2003). However, in this sample the positive stereotypes were only physical, as opposed to both the positive physical and personal characteristics found in the North American samples. This could imply that a Swedish university student population does not hold the same personality virtues associated with physical activity as a North American population does. Also the positive physical characteristics seen

in the Swedish population did not necessarily translate into positive physical attractiveness, whereas in the North American population it did. In this sample it was also seen that the excessive exerciser was rated in the same negative manner as the North American population.

In stereotype research, participants rate the strength of descriptive words in relation to the stereotype, in order to receive a measure of the stereotype, based upon any number attributes. These descriptive words can, once established, also be used to describe a stereotype to a participant. The most common group of exerciser sub-type studied is bodybuilders who are represented as out-group members compared to the general public. One study indirectly looking at bodybuilding stereotypes conducted by Koole and van Knippenberg (2007) found in pilot-tests that only females implicitly activated bodybuilding stereotypes when shown a picture of a body builder. The authors thought that this effect might have occurred because males view bodybuilders as in-group members or because males may have more personal contact with bodybuilders than do females. These pilot-tests found participants associated the following words with that of a bodybuilder stereotype: exercise, muscle, dumb, sweat, lifting, broad, pills, swallow and sports

Continuing in this area one study focused on stereotypes among female leisure exercisers, leisure being defined as activities that are partaken in, not for work or self-maintenance, but for pleasure and satisfaction (Taylor, 2003). The basis of this study was that, historically, some activities are more commonly associated with males as opposed to females. Those females who do engage in these activities may find themselves associated with stereotypical images that are

typically not socially desirable traits in women. The study showed that out of twelve female leisure stereotypes (amateur dramatics, aerobics, embroidery, climbing, ballroom dancing, yoga, squash, darts, jigsaws, weightlifting and golf) weightlifting was rated as the second least favourable, just above golf. Words found to describe female weightlifters in pilot-tests were: body obsessed, strong, fit, competitive, driven and fanatical (Taylor, 2003). Also of note, runners were the sixth most favourable stereotype, right in front of yoga. Words found to describe runners were fit, energetic, outdoor types, driven, committed, strong, competitive, unskilled and loners. Words that were used to describe yoga participants were supple, relaxed, spiritual, reflective, fit, patient, in-control and committed (Taylor, 2003). These studies provide good evidence that exercisers can be broken down into various sub-types of exercisers and that people do perceive these groups to be different from each other. All of the exercise categories mentioned have shown some words shared with the current research's pilot study, described in more detail below.

In addition to the numerous ways that stereotypes can affect behaviour that have already been mentioned, an individual's behaviour can be affected by the mere presence of another individual. Self-facilitation is one well-known way that the presence of others can have an effect on the behaviour of others. The self-facilitation effect basically states that the presence of others can potentially either inhibit or facilitate an individual's performance (Monteil & Huguet, 1999).

Within exercise based stereotype research, less attention has been paid to the effects of out-group members on others within the shared environment. One

study by Fleming & Martin Ginis (2004) found that females who watched videos of models, who represented the culturally ideal body image, exercising had significantly lower self-presentational efficacy than those who watched exercise videos with 'normal' looking females, regardless of exercise status. Furthermore, self-presentational efficacy explained more variance in exercise intentions than task self-efficacy did. This research provides strong evidence for the behavioural effects caused by others in the environment, in addition to basic stereotype research, which underlines why we should be looking at the possible effects of out-group members within a fitness center environment. Within the proposed study the possible behavioural effects that may result from interactions with exerciser sub-types will have to be analyzed through the use of a social cognition model.

Appendix 2 - References

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Appendix 3 – Review of Literature: Social Cognition Models

When attempting to predict an individual's various health behaviours we must first form an understanding of the multiple factors that can contribute to a behavioural decision. These factors are comprised of many aspects, but can be divided into either those that are intrinsic to the individual, such as personal beliefs, or social background, or extrinsic to the individual, such as community resources or the weather (Conner & Norman, 2005). Intrinsic factors are most notably comprised of an individual's cognitive processes and historically have received larger attention than extrinsic factors (Conner & Norman, 2005). This is a result of intrinsic factors being more open to change and containing a greater degree of control than extrinsic factors (Conner & Norman, 2005). In order to determine how an individual's cognitions can influence health behaviours, psychologists employ the use of social cognition models (SCMs) (Conner & Norman, 2005). Some more widely used SCMs are: protection motivation theory (PMT), theory of reasoned action/planned behaviour (TPB), social cognitive theory (SCT), health belief model (HBM) and the prototype willingness model (PWM).

A3.1: Overview of the Models

All SCMs rely on three central social cognitive factors; individual's beliefs, attitudes and knowledge towards the behaviour in question (Cummings, Becker, Maile 1980; Conner & Norman, 2005). These three factors can have a great effect on an individual's behaviour yet vary from person to person, even those of the same demographic background, making these social cognitive factors

highly personalized. SCMs accentuate the rational, deliberate, systematic

processing of any available information when making behavioural decisions

(Conner & Norman, 2005). However, it has been argued that the majority of our

behavioural decisions can be influenced at various social and implicit levels and

only our most important decisions follow systematic and deliberate information

processing (Van der Pligt, de Vries, Manstead & van Harrevled, 2002). SCMs do

acknowledge the possible effects of social others, usually by the inclusion of a

social influence construct, (e.g., subjective norms from the Theory of Planned

Behaviour), yet these models still rely on these influences being systematically

thought about and neglect behaviours that may occur as a spontaneous response to

the social environment. In response to this, models have been developed that

incorporate both reasoned action and social reaction, which is influenced by the

social environment. Behaviours that are influenced by others in the environment

can have a more automatic component to them as opposed to a systematic

thinking process, because of the automatic manner we perceive and react to

various individuals. The most notable of the models to take this into account is the

prototype willingness model (PWM) (Gerrard, Gibbons, Houilihan, Stock, &

Pomery, 2008).

Because all of these models base themselves around the same systematic

behavioural thinking processes, it follows that they share many of the same

qualities. There are two types of SCMs: attribution models and those that try to

predict future health behaviours (Conner & Norman, 2005). Attribution models,

such as the HBM and PMT, are mostly focused on how an individual explains or responds to a health-related event, such as cancer diagnosis. Other SCMs focus on cognitions, such as the TPB, SCT and PWM, with the purpose of predicting health related behaviours and provide the basis for understanding an individual's determinants associated with health behaviours. Both the HBM and PMT assume that the anticipation of a negative health outcome, such as a high risk of diabetes, and the desire to avoid this outcome, produces the motivation for self-protection (e.g. being physically active to reduce one's chances of a diabetes diagnosis; Weinstein, 1993). As the focus of this paper is determine a model that would be best suited to make behavioural predictions of individuals in a fitness center setting, these two models will not be reviewed because of their focus on health protective behaviours (Weinstein, 1993; Norman, Boer & Seydel, 2005; Abraham & Sheeran, 2005). This leaves the TPB, SCT and PWM to be evaluated, compared and contrasted to each other.

Central to all three of these model's prediction of behaviour is their use of behavioural intentions. Behavioural intentions are believed to capture the motivational factors that influence an individual's decisions to perform a specific behaviour (Conner & Norman, 2005). Intentions establish the connection between certain situations and how an individual will behave when influenced by these situations (Gollwitzer, 1993). Behavioural intentions can be used as indicators of how much effort an individual will exert in order to perform the behaviour in question (Ajzen, 1991). This means that the stronger one's intentions are, the

more likely the individual will be to engage in the behaviour. All SCMs within this review include behavioural intentions as the construct leading to actual behaviour. What differs between the models is the constructs that influence behavioural intentions. For instance, SCT states that outcome expectations and self-efficacy influence an individual's behavioural intentions (Bandura, 1997, p. 285), whereas in the TPB, behavioural intentions are influenced by an individual's attitudes, subjective norms and perceived behavioural control over the behaviour (Ajzen, 1991). The subsequent paragraphs introduce social cognitive theory, theory of planned behaviour and the prototype willingness model and the constructs used in each model.

A3.2: Theory of Planned Behaviour

The TPB is a deliberative processing model, implying that people's beliefs are formed after deliberate and careful consideration of available information (Conner & Sparks, 2005). The TPB evolved from the theory of reasoned action (TRA), which was based on Fishbein's (1967) work on the relationship between attitudes and behavioural intentions. Attitudes are defined as a learned disposition that influences individuals to respond in a consistent manner, either favourably or unfavourably, towards a given object or target (Fishbein & Ajzen, 1975). Fishbein (1967) originally found attitudes to be highly correlated with behavioural intentions ($r = .70$). Yet, solely looking at attitudes failed to consistently predict behaviour. Therefore, the TRA and the TPB were developed. The TRA built upon attitudes as a predictor of behaviour and added another construct, subjective

norms, in order to better predict behaviour. The TPB expanded on the TRA by adding a third construct, perceived behavioural control. The TPB states that the main determinants of behaviour are ones intention to perform the behaviour and one's control over performing the behaviour. In the TPB, behavioural intentions can be determined by an individual's attitudes, subjective norms and perceived behavioural control.

A3.2.1: Attitudes

Attitudes are an individual's overall positive or negative evaluation of the behaviour in question. Attitudes are the evaluations of the attributes or outcomes of a certain behavioural performance (Conner & Sparks, 2005). This implies that an individual who believes the performance of the behaviour will result in a positive outcome will have a positive attitude towards the behaviour. This positive attitude will then positively influence an individual's intentions to perform the behaviour. Attitudes are determined by the individual's underlying salient behavioural beliefs. An individual may at any one time hold a number of beliefs about a certain behaviour, but it is the salient beliefs that are thought to determine an individual's attitudes (Conner & Sparks, 2005). An individual's attitudes toward a behaviour are translated into a desirability to either perform the behaviour or not perform the behaviour. These desires are then translated into intentions to act, which then direct actual behaviour (Bagozzi, 1992).

A3.2.2: Subjective Norms

Subjective norms represent the perceived social pressures one feels from close individuals to perform the behaviour in question. Subjective norms are known as injunctive norms as they are concerned with the social approval of other individuals. This concern for social approval then motivates behavioural action through social rewards or punishments (Conner & Sparks, 2005). Once measured, subjective norms are then multiplied by an individual's willingness to comply with these pressures. Because subject norms measure an individual's belief's about whether others think they should perform the behaviour in question, we must also measure how much, or how willing, an individual is to take this information into consideration when making behavioural choices (Conner & Sparks, 2005; Montano & Kasprzyk, 2002). If an individual believes that those individuals close to them would approve of performing the behaviour and the individual has a high willingness to comply, then this will relate to positive behavioural intentions.

A3.2.3: Perceived Behavioural Control

Perceived behavioural control (PBC) was added to the TRA, creating the TPB. PBC was added because it takes into account those situations in which people may lack complete control of the behaviour in question (Ajzen, 2003).

PBC cannot only have an indirect influence on behaviour through one's behavioural intentions, but can also have a direct influence on actual behaviour. An individual might believe that they have minimal internal control over a behaviour, which will result in low behavioural intentions, causing an indirect

influence on behaviour. In other cases, an individual might have high attitudes and high norms towards the behaviour, implying that the intention to perform the behaviour should be high, but if the individual believes that they have no external control over the behaviour, this will directly influence ones behaviour (Ajzen, 1991). For example if an individual was planning on going on a run and they enjoyed running regularly, they should have positive attitudes, norms and PBC towards the behaviour. Yet if it was raining outside this could negatively effect one's perceived behavioural control and directly influence behaviour. Even though an individual's intentions were high, PBC, in this case over the weather, will directly influence actual behaviour.

A3.3: Social Cognitive Theory

SCT posits that human action is preceded by regulated forethought. SCT incorporates numerous variables, but is centered on self-efficacy and outcome expectations, both situation-outcome and action-outcome (Conner & Norman, 2005; Baranowski, Perry & Parcel, 2002). Self-efficacy can directly or indirectly influence behaviour through outcome expectations or an individual's personal goals. Outcome expectations can also directly or indirectly influence behaviour through an individual's goals. SCT also incorporates sociostructural factors, which take into account the barriers or opportunities available to the individual with regards to the behaviour in question (Bandura, 1997). How an individual perceives these factors can be influenced by one's self efficacy. An individual

with higher self-efficacy may perceive barriers to be less of a problem than those with lower self-efficacy.

Perceived self-efficacy is concerned with an individual's beliefs in their ability to perform a behaviour in the face of barriers. Bandura (1997) proposed that self-efficacy is the most important prerequisite for behaviour change, because it can predict the amount of effort that an individual will put forth when faced with barriers. Self-efficacy can be enhanced through four different sources, personal mastery, vicarious experiences, verbal persuasion and emotional arousal. Personal mastery is previous performance of the behaviour. Vicarious experiences occur by observing other like people performing the behaviour. Verbal persuasion is being convinced by others that the individual can perform the behaviour. Emotional arousal influences self-efficacy as a person may feel threatened, or have no apprehensions towards the behaviour, which can affect how that individual reacts to the behaviour in question (Bandura, 1997).

Outcome expectations are comprised of physical, social and self-evaluative aspects and contain both situation and action outcomes. Situation outcomes refer to beliefs pertaining to a health outcome if no personal action is taken to prevent or encourage the outcome. Action outcomes then, refer to the beliefs about the outcomes that will result in response to an individual's actions (Conner & Norman, 2005). Individuals weigh the pros and cons of performing the behaviour in question in relation to their beliefs about the positive or negative

outcome expectations associated with the behaviour. Situation outcomes influence behaviour through action outcomes. If an individual perceives there to be no threat, then no action will be taken, but if the individual perceives a threat this will then lead to some sort of behaviour, which will be determined by action outcomes. Action outcomes influence behaviour by affecting an individual's behavioural intentions, but also through self-efficacy. If an individual believes that the result of some behaviour or action will be positive, then they also must believe that they have the ability to perform the behaviour in question, which will in turn positively influence self-efficacy (Schwarzer, 1992). Outcome expectations can be received from the same four sources that self-efficacy can be received from personal mastery, vicarious experiences, verbal persuasion and emotional arousal (Luszczynska & Schwarzer, 2005).

A3.4: Social Cognition Models Review

When examining which SCM will most useful when trying to determine an individual's exercise behaviour in response to other individuals within a fitness center setting, it is evident that some models will be better suited to do this than others. Because the fitness center setting is a social setting and we are trying to predict behaviours that may occur as a result from others within this setting, the PWM seems best suited to address this issues, due to it's inclusion of prototype perception and behavioural willingness. The TPB and SCT, with their dependence on rational and systematic decision making processes, may prove to be limiting in this area as they do not take into account the spontaneous behaviours that may occur in response to social situations.

The PWM was developed for the study of adolescents and the prediction of risk behaviours, seemingly making it not ideal for use within the proposed context. Gerrard et. al. (2008) address this risk behaviour concern by stating that in theory the model should work with any behaviour as long as the behaviour has a clear image associated it with it. These authors also state that even though the model is geared towards adolescents, it can be applied to those who are beyond adolescence. However, there are limitations to the model which may be addressed by considering constructs from other models.

A3.4.1: Comparisons

Because SCMs tend to be based upon the same underlying behavioural thinking processes, there is noticeable overlap between the models. Firstly, SCMs, have some amount of attention on the consequences of performing a certain behaviour. In the TPB this is demonstrated by the behavioural beliefs constructs and in SCT by the outcome expectancies variable (Conner & Norman, 2005). SCMs also share some components related to control over the behaviour. Of the SCMs, the most similar constructs are TPB's behavioural control and SCT's self-efficacy (SE) construct (Schwarzer, 1992).

A3.4.2: Perceived Behavioural Control and Self-Efficacy

It is evident that with all the similarities between the models there will be some overlap between model constructs. This is most apparent when one looks at

the TPB and SCT and their respective constructs concerning control (Azjen, 1991;

Manstead *&* van Eekelen, 1998; Rodgers, Conner, Murray, 2008). TPB's PBC

construct pertains to the ease or difficulty associated with performing a behaviour

and SCT's SE construct is concerned with the individual's belief that they are

capable of performing the behaviour. In order to distinguish between the two,

some authors have made the argument that SE is concerned with control factors

that are internal to the individual and PBC is concerned with those external to the

individual (Arimtage & Conner, 1999; Terry & O'Leary, 1995; White, Terry &

Hogg, 1994). In relation to behaviour and behavioural intentions, SE has been

found to be a better predictor of behavioural intentions whereas PBC has been

found to be a better predictor of actual behaviour (Armitage & Conner, 1999;

White et. al., 1994;). This makes sense; one's perceived ability to perform a

behaviour should be more related to one's actual intentions to perform the

behaviour, while the external factors available to an individual should be more

related to actual behaviour performance. Yet even with these control distinctions

made between the two constructs, they are still related to each other. In a situation

in which an individual believes that they have a high level of internal control they

will underestimate external control and in situations in which the individual

perceives high external control, this will boost their internal control (Armitage &

Conner, 1999).

Also of importance to note when observing the similarities between TPB

and SCT control constructs is that it becomes quite clear that the PWM has no

inclusion of control. Based upon the comparisons between PBC and SE, PBC would be the better addition to the PWM than SE, in relation to the current context in which the model is being used. For example, if we are interested in how other individuals in the external environment are affecting individuals within the fitness center environment, than an external measure of control would be of better use.

A3.4.3: Social Influences

As stated earlier, all SCM have some measure of social influences. The TPB and PWM measure this with the social norms construct and in SCT with sociostructural factors. In relation to the proposed question, social norms will be measured by an individual's perceived pressure to behave a certain way within the gym setting, using the subjective norms construct from the TPB. Yet some issues have been raised with the use of solely subjective norms. The subjective norm-behavioural intentions relationship has been found to be much weaker than that of the attitudes and behavioural intentions relationship (Armitage & Conner, 2001; Godin & Kok, 1996). In light of this there has been some argument for the addition of descriptive norms to the TPB (Rivis & Sheeran, 2003).

A3.4.4: Descriptive Norms

In relation to the current question being researched, the addition of descriptive norms as a second social influence construct would enhance the overall model. In addition to adding more variance to the model, in this context

descriptive norms could be a more accurate measure of social pressures.

Measuring the number of people close to the participant who are actually a

member of a certain exerciser stereotype group may be more representative of

social influences than asking if an individual feels perceived pressure to workout

like a certain exercise stereotype.

A3.5: The Adapted PWM

Adding PBC and descriptive norms will expand on the predictive ability

of the PWM. The three original constructs of the PWM, risk images, attitudes and

subjective norms, are all correlated to each other. The addition of descriptive

norms to this model will create another correlation, that being between subjective

norms and descriptive norms. This correlation exists as Ajzen and Fishbein (2005)

have recently suggested that both subjective norms and descriptive norms could

be measuring the same underlying concept (social pressure) and the two have

been found to be correlated to each other (Rivis & Sheeran, 2003). Descriptive

norms will also be correlated with behavioural intentions, however it is currently

unknown if it will also share a correlation with behavioural willingness, such as

subjective norms do in the PWM. Interestingly the correlation shared between

subjective norms and attitudes was not found to exist between descriptive norms

and attitudes by Rivis & Sheeran (2003). It is hypothesized that PBC will also be

correlated with behavioural intentions, but will also be directly related with actual

behaviour which should account for those situations in which, despite intentions,

the actual behaviour is heavily influenced by external sources (Ajzen, 1991). This

is essential to the current question: whether individuals in a fitness environment could have a negative effect on exercise behaviour, despite an individual's positive intentions. The addition of these two constructs will create a model (see fig. 1) that is better adapted to predict the current health behaviour in question. The addition of PBC control to this model will also create two more correlations with attitudes and subjective norms as exist in the TPB (Ajzen, 1991; Armitage & Conner, 2001). These additional correlations make sense due to the possible influences that these three variables can have on each other (Armitage & Conner, 1991). The addition of descriptive norms and PBC to the model will make for a model that is better suited to predict behavioural intentions, in the current context, yet research there is limited research on wither these two constructs are also correlated with behavioural willingness.

The inclusion of PBC and descriptive norms to the PWM will create a model that should be better suited for predicting an individual's exercise behaviour in response to various other exerciser stereotypes within the fitness center setting. The PWM use of a dual processing approach helps to address both the behaviours preceded by rational thinking that SCM employ and the behaviours that are responses to the social environment. The inclusion of PBC will allow the model to take into account others within the environment who may be viewed as either facilitators or impediments to behaviour. The inclusion of descriptive norms as a further measure of social influences may be a better predictor of actual social influences than subjective norms, within the currently

proposed context. Overall, the inclusion of these two constructs will contribute to make a model that can more accurately test intentions and willingness regarding exercise in response to other exercisers within the fitness center setting.

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Appendix 4 – Godin Leisure-Time Exercise Questionnaire (GLTEQ)

Godin Leisure-Time Exercise Questionnaire (LTEQ)

Considering a **7-Day period** (a week), how many times on average do you do the following kinds of exercise for **more than 15 minutes** during your **free time** (write on each line the appropriate number)?

Times Per
Week

A. STRENUOUS PHYSICAL ACTIVITY
    (heart beats rapidly, sweating)

(e.g., running, jogging, hockey, soccer, squash, cross country skiing, judo, roller skating, vigorous swimming, igorous long distance bicycling, vigorous aerobic dance classes, heavy weight training)

_____

B. MODERATE PHYSICAL ACTIVITY
(not exhausting, light perspiration)

(e.g., fast walking, baseball, tennis, easy bicycling,
 volleyball, badminton, easy swimming, alpine skiing,
 popular and folk dancing)

_____

C. MILD PHYSICAL ACITIVITY
    (minimal effort, no perspiration)

(e.g., easy walking, yoga, archery, fishing, bowling,
 lawn bowling, shuffleboard, horseshoes, golf, snowmobiling)

_____

Considering a **7-Day period** (a week), during your leisure-time, how often do you engage in any regular activity long enough to work up a sweat (heart beats rapidly)?

1. Often   2. Sometimes   3. Never/rarely

Appendix 5 – Participant information letter

Hello:

  We would like to ask you to complete the following questionnaires. The questionnaires ask about your opinions about exercisers and how much exercise you do. You are free to stop at any point with no questions asked. If you want to stop please do so and tell the researcher. Completing the tasks should take about 20 minutes.

  Your answers will be kept private. Your name will not be attached to the data and once you are finished, we will have no way of knowing which data are yours. Raw data will be coded and stored on a password-protected computer. Normally data are kept for a period of five years post-publication, after which it may be destroyed. The only risk for you is that you might feel uncomfortable answering some of the questions. If you do not want to answer a question, or wish to stop at any time, please do so and your data will not be included in the final results. This research will contribute to our knowledge of exercise stereotypes and by participating you can contribute to this knowledge base.

  These data will be used to complete my master's thesis and may also be published in an academic journal. By completing the questionnaires you are showing you understand how the data will be used and that you have the right to stop at any time.

If you have any questions about this project, please feel free to call me, Sean Stolp, at (780) 492-7424 or Dr. Tanya Berry at (780) 492-3280. You may also e-mail me at stolp@ualberta.ca. If you have further concerns about this study, you may contact Dr. Kelvin Jones, of the Faculty Research Ethics Board, at (780) 492-1008. Dr. Jones has no direct involvement with this project.

Appendix 6 – Questionnaire

Age: _____

Sex: M/F

Godin Leisure Time Exercise Questionnaire (GLTEQ)

Consider a typical week (7 days), how many times on the average do **YOU** do the following kinds of exercise for *more than 15 minutes* during your free time **(write the appropriate number in each box for each level of activity intensity)**?

Intensity of the activity	Times per week
• **Mild (minimal effort, no perspiration)** (e.g., yoga, fishing, bowling, horseshoes, golf, snowmobiling)	
• **Moderate (not exhausting, light perspiration)** (e.g., fast walking, , tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, dancing)	
• **Strenuous (heart beats rapidly, sweating)** (e.g., running or jogging, hockey, soccer, squash, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling, vigorous aerobic dance classes, heavy weight training)	

If you exercise, what is your number one reason for exercising?_____

On the next pages please read over the following descriptions and answer the questions to the best of your abilities.

Alex is a competitive athlete and is very focused and determined when training. Alex is motivated, fit and healthy.

How easy or hard is it for you to imagine Alex?						
1	2	3	4	5	6	7
Hard						Easy

I think that athletes would be a good group to exercise with						
1	2	3	4	5	6	7
Not at all						Extremely
I would be comfortable exercising with an athlete.						
1	2	3	4	5	6	7
Not at all						Extremely
I would enjoy exercising with a group of athletes						
1	2	3	4	5	6	7
Not at all						Extremely
I would feel out of place exercising beside an athlete						
1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with an athlete						
1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Please indicate how favourable your impression is of the type of person your age who is an athlete.										
0	10	20	30	40	50	60	70	80	90	100
Extremely Unfavourable									Extremely Favourable	

To what extent would you like to exercise beside an athlete?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in the same gym as an athlete?						

1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

To what extent would you like to exercise in a gym solely comprised of athletes?

1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

If you attended a gym, and were happy with attending this gym, how likely would you be to continue exercising at this gym if an athlete started to exercise there at the same time as you?

1	2	3	4	5	6	7
Definitely would not continue				Definitely would continue		

I would continue my regular exercise activity **_with_** an athlete:

1	2	3	4	5	6	7
Definitely False				Definitely True		

I would continue my regular exercise activity **_near_** an athlete:

1	2	3	4	5	6	7
Definitely False				Definitely True		

If I wanted to I could exercise with an athlete:

1	2	3	4	5	6	7
Definitely False				Definitely True		

In a fitness center setting it is up to me whether or not I exercise with an athlete

1	2	3	4	5	6	7
Definitely False				Definitely True		

How confident are you that you could complete **_your_** planned exercise as usual with an athlete?

1	2	3	4	5	6	7
Not at all confident		Somewhat confident			Completely confident	

Of the five people you know best of your age, how many would you consider to be an athlete?

0	1	2	3	4	5

Sam is a runner with a lot of endurance. Sam maintains good health and fitness and stays lean through running.

How easy or hard is it for you to imagine Sam?

1	2	3	4	5	6	7

Hard				Easy

I think that runners would be a good group to exercise with						
1	2	3	4	5	6	7
Not at all						Extremely
I would be comfortable exercising with a runner						
1	2	3	4	5	6	7
Not at all						Extremely
I would enjoy exercising with a group of runners						
1	2	3	4	5	6	7
Not at all						Extremely
I would feel out of place exercising beside a runner						
1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with a runner						
1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Please indicate how favourable your impression is of the type of person your age who is a runner										
0	10	20	30	40	50	60	70	80	90	100
Extremely Unfavourable								Extremely Favourable		

To what extent would you like to exercise beside a runner?						
1	2	3	4	5	6	7
Definitely would not like to do this			Definitely would like to do this			
To what extent would you like to exercise in the same gym as a runner?						
1	2	3	4	5	6	7
Definitely would not like to do this			Definitely would like to do this			
To what extent would you like to exercise in a gym solely comprised of runners?						
1	2	3	4	5	6	7
Definitely would not like to do this			Definitely would like to do this			

If you attended a gym, and were happy with attending this gym, how likely

would you be to continue exercising at this gym if a runner started to exercise there at the same time as you?

1	2	3	4	5	6	7

Definitely would not continue — Definitely would continue

I would continue my regular exercise activity **_with_** a runner:

1	2	3	4	5	6	7

Definitely False — Definitely True

I would continue my regular exercise activity **_near_** a runner:

1	2	3	4	5	6	7

Definitely False — Definitely True

If I wanted to I could exercise with a runner:

1	2	3	4	5	6	7

Definitely False — Definitely True

In a fitness center setting it is up to me whether or not I exercise with a runner

1	2	3	4	5	6	7

Definitely False — Definitely True

How confident are you that you could complete **_your_** planned exercise as usual with a runner?

1	2	3	4	5	6	7

Not at all confident — Somewhat confident — Completely confident

---

Of the five people you know best of your age, how many would you consider to be a runner?

0	1	2	3	4	5

Jeff is a weight lifter. Weight lifting makes Jeff bulky and muscular making him intimidating.

How easy or hard is it for you to imagine Jeff?

1	2	3	4	5	6	7

Hard — Easy

I think that weight lifters would be a good group to exercise with

1	2	3	4	5	6	7

Not at all — Extremely

I would be comfortable exercising with a weight lifter						
1	2	3	4	5	6	7
Not at all						Extremely
I would enjoy exercising with a group of weight lifters						
1	2	3	4	5	6	7
Not at all						Extremely
I would feel out of place exercising beside a weight lifter						
1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with a weight lifter						
1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Please indicate how favourable your impression is of the type of person your age who is a weight lifter										
0	10	20	30	40	50	60	70	80	90	100
Extremely Unfavourable									Extremely Favourable	

To what extent would you like to exercise beside a weight lifter?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in the same gym as a weight lifter?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in a gym solely comprised of weight lifters?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

If you attended a gym, and were happy with attending this gym, how likely would you be to continue exercising at this gym if a weight lifter started to exercise there at the same time as you?						
1	2	3	4	5	6	7
Definitely would not continue				Definitely would continue		
I would continue my regular exercise activity _**with**_ a weight lifter:						

1	2	3	4	5	6	7
Definitely False					Definitely True	

I would continue my regular exercise activity ***near*** a weight lifter:

1	2	3	4	5	6	7
Definitely False					Definitely True	

If I wanted to I could exercise with a weight lifter:

1	2	3	4	5	6	7
Definitely False					Definitely True	

In a fitness center setting it is up to me whether or not I exercise with a weight lifter

1	2	3	4	5	6	7
Definitely False					Definitely True	

How confident are you that you could complete ***your*** planned exercise as usual with a weight lifter?

1	2	3	4	5	6	7
Not at all confident		Somewhat confident			Completely confident	

Of the five people you know best of your age, how many would you consider to be a weight lifter?

0	1	2	3	4	5

Sara is relaxed and yoga gives her good flexibility. Sara enjoys the spiritual aspect of yoga.

How easy or hard is it for you to imagine Sara?

1	2	3	4	5	6	7
Hard						Easy

I think that people who do yoga would be a good group to exercise with

1	2	3	4	5	6	7
Not at all						Extremely

I would be comfortable exercising with a person who does yoga

1	2	3	4	5	6	7
Not at all						Extremely

I would enjoy exercising with a group of people who do yoga

1	2	3	4	5	6	7
Not at all						Extremely

I would feel out of place exercising beside a person who does yoga						
1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with a person who does yoga						
1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Please indicate how favourable your impression is of the type of person your age who does yoga										
0	10	20	30	40	50	60	70	80	90	100
Extremely Unfavourable									Extremely Favourable	

To what extent would you like to exercise beside a person who does yoga?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in the same gym as a person who does yoga?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in a gym solely comprised of people who do yoga?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

If you attended a gym, and were happy with attending this gym, how likely would you be to continue exercising at this gym if a person who does yoga started to exercise there at the same time as you?						
1	2	3	4	5	6	7
Definitely would not continue				Definitely would continue		
I would continue my regular exercise activity ***with*** a person who does yoga:						
1	2	3	4	5	6	7
Definitely False				Definitely True		
I would continue my regular exercise activity ***near*** a person who does yoga:						
1	2	3	4	5	6	7
Definitely False				Definitely True		

If I wanted to I could exercise with a person who does yoga:						
1	2	3	4	5	6	7
Definitely False					Definitely True	

In a fitness center setting it is up to me whether or not I exercise with a person who does yoga						
1	2	3	4	5	6	7
Definitely False					Definitely True	

How confident are you that you could complete *your* planned exercise as usual with a person who does yoga?						
1	2	3	4	5	6	7
Not at all confident		Somewhat confident			Completely confident	

Of the five people you know best of your age, how many would you consider to be a person who does yoga?					
0	1	2	3	4	5

Terry is 64 and exercises to keep healthy. Terry enjoys retirement and all types of fitness activities.

How easy or hard is it for you to imagine Terry?						
1	2	3	4	5	6	7
Hard						Easy

I think that older people would be a good group to exercise with						
1	2	3	4	5	6	7
Not at all						Extremely

I would be comfortable exercising with an older person						
1	2	3	4	5	6	7
Not at all						Extremely

I would enjoy exercising with a group of older people						
1	2	3	4	5	6	7
Not at all						Extremely

I would feel out of place exercising beside an older person						
1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with an older person						
1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

I think that older people would be a good group to exercise with										
0	10	20	30	40	50	60	70	80	90	100
Not at all										Extremely

To what extent would you like to exercise beside an older person?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in the same gym as an older person?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in a gym solely comprised of older people?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

If you attended a gym, and were happy with attending this gym, how likely would you be to continue exercising at this gym if an older person started to exercise there at the same time as you?						
1	2	3	4	5	6	7
Definitely would not continue				Definitely would continue		
I would continue my regular exercise activity **_with_** an older person:						
1	2	3	4	5	6	7
Definitely False				Definitely True		
I would continue my regular exercise activity **_near_** an older person:						
1	2	3	4	5	6	7
Definitely False				Definitely True		

If I wanted to I could exercise with an older person:						
1	2	3	4	5	6	7
Definitely False				Definitely True		
In a fitness center setting it is up to me whether or not I exercise with an older person						

185

1	2	3	4	5	6	7
Definitely False					Definitely True	

How confident are you that you could complete **_your_** planned exercise as usual with an older person?

1	2	3	4	5	6	7
Not at all confident		Somewhat confident			Completely confident	

Of the five people you know best of your age, how many would you consider to be an older person?

0	1	2	3	4	5

Megan puts high value on appearance and is judgmental. When Megan exercises she wears makeup and tight fitting clothing and does not sweat.

How easy or hard is it for you to imagine Megan?

1	2	3	4	5	6	7
Hard						Easy

I think that people who value appearance would be a good group to exercise with

1	2	3	4	5	6	7
Not at all						Extremely

I would be comfortable exercising with a person who values appearance

1	2	3	4	5	6	7
Not at all						Extremely

I would enjoy exercising with a group of people who value appearance

1	2	3	4	5	6	7
Not at all						Extremely

I would feel out of place exercising beside a person who values appearance

1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with a person who values appearance

1	2	3	4	5	6	7
Strongly Disagree					Strongly Agree	

Please indicate how favourable your impression is of the type of person your age who values appearance

0	10	20	30	40	50	60	70	80	90	100
Extremely Unfavourable									Extremely Favourable	

To what extent would you like to exercise beside a person who values appearance?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in the same gym as a person who values appearance?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in a gym solely comprised of people who value appearance?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

If you attended a gym, and were happy with attending this gym, how likely would you be to continue exercising at this gym if a person who values appearance started to exercise there at the same time as you?						
1	2	3	4	5	6	7
Definitely would not continue				Definitely would continue		
I would continue my regular exercise activity ***with*** a person who values appearance:						
1	2	3	4	5	6	7
Definitely False				Definitely True		
I would continue my regular exercise activity ***near*** a person who values appearance:						
1	2	3	4	5	6	7
Definitely False				Definitely True		

If I wanted to I could exercise with a person who values appearance:						
1	2	3	4	5	6	7
Definitely False				Definitely True		
In a fitness center setting it is up to me whether or not I exercise with a person who values appearance						
1	2	3	4	5	6	7
Definitely False				Definitely True		
How confident are you that you could complete ***your*** planned exercise as usual with a person who values appearance?						
1	2	3	4	5	6	7

Not at all confident	Somewhat confident	Completely confident

Of the five people you know best of your age, how many would you consider to value appearance?					
0	1	2	3	4	5

Taylor is overweight and is trying to lose weight through exercise. Taylor is unhealthy and self-conscious.

How easy or hard is it for you to imagine Taylor?						
1	2	3	4	5	6	7
Hard						Easy

I think that overweight people would be a good group to exercise with						
1	2	3	4	5	6	7
Not at all						Extremely
I would be comfortable exercising with an overweight person						
1	2	3	4	5	6	7
Not at all						Extremely
I would enjoy exercising with a group of overweight people						
1	2	3	4	5	6	7
Not at all						Extremely
I would feel out of place exercising beside an overweight person						
1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with an overweight person						
1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Please indicate how favourable your impression is of the type of person your age who is an overweight person										
0	10	20	30	40	50	60	70	80	90	100
Extremely Unfavourable								Extremely Favourable		

To what extent would you like to exercise beside an overweight person?

1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

To what extent would you like to exercise in the same gym as an overweight person?

1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

To what extent would you like to exercise in a gym solely comprised of overweight people?

1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

If you attended a gym, and were happy with attending this gym, how likely would you be to continue exercising at this gym if an overweight person started to exercise there at the same time as you?

1	2	3	4	5	6	7
Definitely would not continue				Definitely would continue		

I would continue my regular exercise activity **_with_** an overweight person:

1	2	3	4	5	6	7
Definitely False				Definitely True		

I would continue my regular exercise activity **_near_** an overweight person:

1	2	3	4	5	6	7
Definitely False				Definitely True		

If I wanted to I could exercise with an overweight person:

1	2	3	4	5	6	7
Definitely False				Definitely True		

In a fitness center setting it is up to me whether or not I exercise with an overweight person

1	2	3	4	5	6	7
Definitely False				Definitely True		

How confident are you that you could complete **_your_** planned exercise as usual with an overweight person?

1	2	3	4	5	6	7
Not at all confident		Somewhat confident				Completely confident

Of the five people you know best of your age, how many would you consider to be an overweight person?

0	1	2	3	4	5

Brian is a jock and is intense about playing competitive sports. He is kind of a show-off and thinks that he is good at sports.

How easy or hard is it for you to imagine Brian?						
1	2	3	4	5	6	7
Hard						Easy

I think that jocks would be a good group to exercise with						
1	2	3	4	5	6	7
Not at all						Extremely
I would be comfortable exercising with a jock						
1	2	3	4	5	6	7
Not at all						Extremely
I would enjoy exercising with a group of jocks						
1	2	3	4	5	6	7
Not at all						Extremely
I would feel out of place exercising beside a jock						
1	2	3	4	5	6	7
Not at all						Extremely

Most people in my social network would approve if I exercised with a jock						
1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Please indicate how favourable your impression is of the type of person your age who is a jock										
0	10	20	30	40	50	60	70	80	90	100
Extremely Unfavourable									Extremely Favourable	

To what extent would you like to exercise beside a jock?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in the same gym as a jock?						
1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		
To what extent would you like to exercise in a gym solely comprised of jocks?						

1	2	3	4	5	6	7
Definitely would not like to do this				Definitely would like to do this		

If you attended a gym, and were happy with attending this gym, how likely would you be to continue exercising at this gym if a jock started to exercise there at the same time as you?

1	2	3	4	5	6	7
Definitely would not continue				Definitely would continue		

I would continue my regular exercise activity ***with*** a jock:

1	2	3	4	5	6	7
Definitely False				Definitely True		

I would continue my regular exercise activity ***near*** a jock:

1	2	3	4	5	6	7
Definitely False				Definitely True		

If I wanted to I could exercise with a jock:

1	2	3	4	5	6	7
Definitely False				Definitely True		

In a fitness center setting it is up to me whether or not I exercise with a jock

1	2	3	4	5	6	7
Definitely False				Definitely True		

How confident are you that you could complete ***your*** planned exercise as usual with a jock?

1	2	3	4	5	6	7
Not at all confident		Somewhat confident			Completely confident	

Of the five people you know best of your age, how many would you consider to be a jock?

0	1	2	3	4	5

I generally want to do what my friends think I should do

Strongly Disagree   Strongly Agree

    1   2   3   4   5   6   7

Do you consider yourself to be any one of the exercisers listed? Y / N

If so please list which one(s)_____

Do you have any other comments about the exercisers listed?