

Engaging in physical activity: Interaction between motivational factors, self-esteem, self-efficacy, and life satisfaction & Gender

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Abstract

The present study explores how self-esteem, self-efficacy, and satisfaction with life correlate with motivations to engage in a physical activity (extrinsic vs intrinsic) with looking at gender differences in motivation. Participants took part in an online survey posted to Facebook & LinkedIn. They self-reported on four questionnaires in relation to self-esteem, self-efficacy, satisfaction with life and the motivation for physical activity which accessed self-reported information whether an individual was extrinsically or intrinsically motivated to engage in a physical activity .The results showed that self-esteem, & self-efficacy are predictors of motivation to engage in a physical activity. No significance was found with life satisfaction. Gender differences were examined and no significance was found. The present research shows how important it is to consider psychological factors in an individual's motivation and to know how they are motivated in relation the Self-determination theory in order to create persistence in the individual on engaging in healthy behaviours.

Introduction

Motivation is the force that activates, and maintains our behaviour. The forces that drive motivation can be biological, cognitive, social or emotional. There are many theories of motivation that have been proposed. What is it that drives people to engage in a physical activity? There has been a lot of research in the field of health psychology and on exercising and physical activity in schools, personal life and in work. Researchers look at the different motivational theories in order to see the relationship between motivation and engaging in a physical activity. Participating in regular physical activity is not only good for your physical health, but extremely good for your mental health and has a positive affect on mood and help people beat depression. (Weir (2011, para, 7). Self-esteem is an important factor to consider in an individual's motives for participating in physical activities. Research indicates that self-esteem is related with motivated behaviour in physical activity engagement. (Biddle et al., 1993; Fox, 1997; Goudas, Biddle, & Fox, 1994; Marsh, Richards, Johnson, Roche, & Tremayne, 1994; Whitehead & Corbin, 1991). Self-efficacy has been proven to be a predictor of physical activity (Pan, Cameron, Des Meules, Morrison, Craig & Jiang., 2009). It is important to have the confidence and belief that you can achieve your goals in life. Self-determination theory explores motivational processes in exercise and physical activity. Intrinsic and extrinsic types of motivation have been widely studied by researchers such as Deci & Ryan (2000). Intrinsic motivation describes a natural inclination to do something as it is inherently interesting or enjoyable. (Deci & Ryan 2000). That it is essential to cognitive and social development and it represents a source of enjoyment and vitality within the lives of individuals. (Csikszentmihalyi & Rathunde, 1993). Extrinsic motivation describes an individual's performance of an activity in order to achieve external reward for doing the activity, for example an individual who is studying for non-inherent reason such as trying to get excellent grades in order to get the career that they wish. (Deci & Ryan 2000)

Physical activity:

Physical activity has been defined by the World Health Organisation as “any bodily movement produced by skeletal muscles that require energy expenditure” (WHO, 2014). It has been rated as the fourth most dangerous factor for global mortality, causing deaths of 3.2 million worldwide. (WHO, 2014). In recent times the promotion of healthy behaviours appears more often than before. It is advertised on the television, social media and even on the streets. With the power of the social media along with advertisements, people are becoming more aware of the importance of physical exercise. In order for an individual to change their behaviours in relation to engage in a physical activity it is important for them to consider what motivates them and how they are motivated. Some of the motives for engaging in a physical activity can be intrinsic such as enjoyment, interest, fun and stimulation (Ferrand, Perrin & Nasarre, 2008). However there are extrinsic reasons for an individual to engage in a physical activity too, such as reward, competition, pressure from others, and avoiding punishments. (Deci & Ryan 2000) Kilpatrick, Hebert & Bartholomew (2005) has shown that health related motives are more highly related to exercise behaviour, while extrinsic motives like competition, affiliation, enjoyment and challenge are linked to sports participation. This suggests that those who participate in a physical activity other than sports are more intrinsically motivated.

Self-Determination Theory:

The Self-Determination Theory (SDT) of motivation looks at issues such as personality development, self-regulation, universal psychological needs, life goals and aspirations, energy and vitality, unconscious processes, the relations of culture to motivation, and the impact of social environment on motivation, affect, behaviour, and well-being. (Deci & Ryan 2008) In relation to motivation in a physical activity self-regulation in an individual should be considered along with other factors mentioned above by Deci & Ryan. The SDT was initially

developed by Edward L. Deci and Richard M. Ryan; back in the 1970's however it was not until the 1980's when it started to have more attention by researchers. (Deci & Ryan, 1985). From here a lot of research has been done onto the theory particularly in the field of sport, education and healthcare.

Initially the research on SDT evolved from research on extrinsic and intrinsic motivation. Deci and Ryan believe that motivation lies along a continuum ranging from intrinsic to extrinsic motivations. Intrinsic motivation being more internal reasons for a person to be motivated, it is personally rewarding to themselves. Extrinsic motivation is more external, where a person will do a task or activity to gain external reward or to avoid punishments.

Self-determination focuses on people's inherent and innate tendencies and psychological needs. According to the SDT there are three basic psychological needs that determine behaviour, the need for autonomy, relatedness, and competence. They are believed to be innate needs which mean that they are not learned and are in all people regardless of their culture and gender.

Autonomy and relatedness complement each other, for example young adults who feel that their autonomy is acknowledged and supported by their parents, feel a strong sense of relatedness to their parents. (Ryan & Lynch 1989). Autonomous motivation and controlled motivation are both the most central distinction of the SDT. Controlled motivation is when one's behaviour is based on external rewards or punishments. It is partially internalized and is activated and made stronger by external factors such as approval motive, avoidance of shame, contingent self-esteem and ego involvements. The motivation is controlled, with the result the person is under pressure to think, behave and feel in a certain way that is the desire of another. (Deci & Ryan 2008). Relatedness is the universal self-desire to socially interact with others, to form bonds with others, and to connect and experience caring from others.

Competency is the human need to take on new challenges and be very successful on the paths that they take. It is the perceived self-belief in one's own ability to perform well in an activity. It motivates growth inducing human behaviour. It compromises intrinsic motivation rather than being done for extrinsic reasons. Autonomous motivation involves people engaging in a physical activity with volition, with a sense of choice and a sense of self. It achieves to greater freedom and regulation by the self. It entails both intrinsic and types of extrinsic motivation.

SDT relates the extrinsic motivation concept to autonomous behavioural regulation. There are four types of extrinsically motivated behaviours, introjected regulated behaviour, integrated regulated behaviour, identified regulated behaviour and externally regulated behaviour. In exercise external regulated behaviour has the least self-determined form of extrinsic motivation and involves that an individual will exercise to satisfy an external demand. Introjected regulation involves participating in a physical activity in order to avoid negative feelings like guilt or to support conditional self-worth. Identified regulation is participating because of how important the benefits are to health and fitness even if the behaviour itself is not enjoyable. There are two other behavioural regulations considered in SDT, which is Amotivation and intrinsic motivation.

Amotivation:

Amotivation is considered to be at the far side of the self-determination continuum where intrinsic motivation is at the opposite side. When an individual is amotivated it means that they have no value attached to the activity (Ryan 1995), or they do not feel compelled to do the activity. (Deci & Ryan 2000) An example of amotivation would be if an individual was forced to engage in a physical activity that they were not used to, it may cause the individual to be amotivated.

Intrinsically motivation behaviours:

Intrinsic motivation behaviour is when an individual behaves for more internal reasons that do not offer a reward. It is the most self-determined form of motivation; individuals do activities naturally as they are internally interested in them. It contrasts highly with extrinsic motivation. It is when an individual performs an activity for inherent satisfaction or pleasure, and that performance of those activities will be reinforcing in and of the self. (Brown 2007 p143,). The importance of intrinsic motivation is that it is a more “natural inclination towards assimilation, mastery, spontaneous interest, and exploration which is essential to cognitive and social development and represents a principal source of enjoyment and vitality throughout the life of an individual”. (Deci & Ryan 2000 p4) However it has been previously discussed that when an individual does an activity for intrinsic reasons and is offered an extrinsic reward for this the individual may feel controlled by the reward which will in return initiate a perceived locus of causality for the behaviour from internal to external. (Deci & Ryan 2000 p234). For example if an individual participates in a physical activity for intrinsic reasons such as satisfaction and enjoyment of the activity. If this activity became an obligation because a friend suggested it to them that they will join them as they want to improve their activity, depending on the perception of this to the individual it may be at risk of becoming more extrinsic and less intrinsic. Duncan, Hall, Wilson, & Jenny 2010 found that intrinsic motivation was strongly correlated with exercise behaviours and the more autonomous forms of extrinsic motivation among the participants. However Mullen & Markland 1997 argue that intrinsic motivation on its own is not likely to withhold long term engagement in exercise. Edmonds, Ntoumanis, & Duda 2007, conducted a study on testing the SDT on teaching style in intervention in the exercise domain. It was a study in natural settings. The authors suggested that due to keeping a physically active lifestyle needs a high level of effort and

commitment that identified regulation may be more important for participation in exercise rather than just for fun or enjoyment.

Participation in psychical activities can lead to feelings of autonomy and competence and may produce satisfying emotions such as excitement, or thrills. These emotions come from internally, so it is easy to see or think that physical activity may be inherently intrinsically motivating. However there are people who will only participate in a physical activity for extrinsic feelings of admiration from others, such as a high performance athlete, who thrives from competing and winning and getting praise and glory from the environment.

Externally regulated behaviour:

Extrinsic motivated behaviours that are seen as the least autonomous are called externally regulated behaviours and introjected regulated behaviours. These types of behaviours or motives are partaken for external reasons such as rewards or possibly to avoid punishment. (Deci & Ryan 2000). In relation to physical activities, when an individual participates in a physical activity because if they don't it will mean that they will receive pressure from a loved one, this is an example of when an individual is externally regulated in their motivation. Duncan et al 2010 conducted a study on exercise motivation. In this study they used the Behavioural Regulation in Exercise Questionnaire version 2 (BREQ-2), which accesses exercise regulations according to the SDT Model. The results of this study did not show a significant relationship with externally regulated behaviour in relation to exercise behaviours. When an individual is participating in a physical activity for external reasons they may be more at risk of amotivation.

Introjected regulated behaviour:

Introjected regulation is another type of extrinsic motivation. It is a controlled form of regulation in which is performed to avoid feelings of guilt or obligation or possibly a need to

prove something. (Deci & Ryan 2000) Introjected regulation will encourage an individual to enact behaviour not because they want to, but because they are afraid not to do so, out of a complete sense of obligation. For example if a person participates in a physical activity with friends all the time to support each other. Possibly they are only participating in the physical activity out of a sense of guilt or obligation. They don't want to let their friends down or try to avoid the confrontation if they don't participate. Gillison, Osborn, Skevington, & Standage 2008 conducted a study on introjected regulation for exercise across gender in adolescents; it was a quantitative study among young adolescents. The results showed a positive relationship between introjected regulation for exercise on participating in sports and exercise.

Identified regulated behaviour:

Identified regulation is a more autonomous and self-determined form of extrinsic motivation. It is a behaviour which is more significantly personal and valued by the individual. The outcome of the behaviour is more accepted by the individual and has importance to them. There is enjoyment in the behaviour and does not relate to a reward like external regulation. An example of this would be an individual identifying that they need to engage in a physical activity in order to reach their goal to lose weight as a healthy weight is an important goal to accomplish. Duncan et al 2010 also conducted research on identified regulation along with external regulation. The results showed strong correlations with identified regulation in relation to exercise behaviours.

Integrated regulated behaviour:

The most autonomous form of extrinsic motivation is that of integrated regulation. It is a behaviour that represents an individual's belief that the behaviour is an important part of their identity and is congruent with their own values. The motivation is integrated within the self. It is integrated once the individual self-examines and internalises and assimilates the reason

behind their actions.(Deci & Ryan 2000) For example an individual who participates in a physical activity such as swimming, the individual believes that they are a swimmer and it aligns with their beliefs and values therefore they identify with themselves. If they decide not to swim for a particular reason they will not feel guilt, they will swim because it is right for them. Duncan et al 2010 confirmed that integrated regulation was most strongly correlated with duration of exercise and frequency of exercise in participants.

Gender & SDT for physical activity:

Motivation is widely known as a predictor of engaging in exercise (Lewis & Sutton 2011). How do men and women differ in terms of their motivation? Hamilton, Cox, & White 2012, conducted a study on SDT, planning and a theory of planned behaviour in relation to physical activity among mothers and father of young children. The authors tested for gender differences in relation to behavioural regulation of the SDT and found a difference between men and women in relation to the SDT along with Kilpatrick et al 2005, where analysis showed significant gender differences where men reported higher levels of motivation in certain types of activities over women. More recent studies done by Molanorouzi, Khoo, & Morris 2015, showed a significant difference in gender in relation to motives for engaging in a physical activity where females reported higher motivation for appearance and physical condition which would be more autonomous reasons such as identified or integrated regulation, and men reported higher on motivation for competition or ego and mastery than females, which would link to more external regulation and be classed as more extrinsic reasons for participating in a physical activity. Gender differences are present everywhere including in relation to sport. For example, some studies indicate that women are more motivated to participate in a physical activity by intrinsic motives rather than extrinsic motives. (Chantel, Guay, Dobрева-Martinov, & Vallerand, 1996). There is conflicting evidence of no significant difference in gender in relation to motives (extrinsic/intrinsic) to

engage in a physical activity such as Hall, Rodgers, Wilson, & Norman 2010, who checked for significance across gender in relation to exercise motives the authors looked at gender differences in the BREQ-2 questionnaire for behaviour regulations on engaging in a physical activity and found no gender difference. Along with Lutz, Lochburn, & Turnbow 2003, who conducted a meta-analysis examining the influence of gender on the SDT motivational regulations for physical activity across 27 studies previously done, the authors found that there was near zero effect sizes and found no differences between men and women across all of the regulations of motivation to engage in a physical activity.

Self Esteem & SDT:

According to the SDT theory there is no need to consider self-esteem, that the three basic needs of Autonomy, Competence, and Relatedness are enough to fulfil the needs for growth, integrity and well-being. Ryan & Brown, (2003, pp. 71-76). Deci & Ryan 1995 distinguished two different types of self-esteem in relation to the SDT, contingent self-esteem, and non-contingent self-esteem. Contingent self-esteem is when individuals are strongly motivated by the desire to be seen as worthy to the self and also to others. Non contingent self-esteem is when an individual feels worthy of themselves at a high level of esteem and love regardless of whether they are successful or not. According to Deci & Ryan, 1985; Ryan & Connell, 1989 motivation that is driven by self-esteem contingencies is that of introjected regulation. As introjected regulation is a motivation which is done out of feelings of guilt or obligation which referred to as self-criticism. (Deci & Ryan 2003)

However, other researchers suggest self-esteem is very important and it is plays a critical role in a healthy personality. (Kernis, Paradise, Whitaker, Wheatman, & Goldman 2000). Self-esteem, considered in a specific dimension, reflects a person's evaluation of his or her own worth in that activity, which in the definition of Branden (1969) derives from "the

experience of being competent ... and being worthy of happiness". In the older definition of James (1890) self-esteem is higher when there is coincidence between real self and ideal self. (Bruno, Bruna, 2011, p7). Sheldon, Elliot, Kim, & Kasser 2001, conducted a study where they tested 10 psychological needs to test if they were fundamental for humans, autonomy, relatedness, competence, and self-esteem were all in the top 4 in the results. This argues with Deci & Ryan's 2003 statement that self-esteem should not be considered as a psychological need for motivation.

Maslow's hierarchy of Needs is a theory in psychology proposed by Abraham Maslow in his 1943 paper "*A Theory of Human Motivation*". Maslow wanted to understand what motivates people. He believed that people had a set of motivation systems which were not in any way related to rewards or unconscious desires. He proposed that people are motivated to achieve certain needs. Once one need is fulfilled the individual will move on to fulfil the next need. Maslow named the five motivational needs, psychological, safety, love, self-esteem, and self-actualisation. Maslow suggested that an individual must start from the bottom up to self-actualisation and if an individual didn't fulfil the bottom lower level needs such as psychological, safety and love they couldn't reach the higher level needs self-esteem and self-actualisation. The theory posits that everyone is capable of fulfilling each need, but obviously failure to meet lower level needs will disrupt the cycle.

Once the first three needs are satisfied and fulfilled the esteem need begins to play a more dominant role in motivating an individual's behaviour. Self-esteem needs and personal worth are indeed very important in motivating an individual's behaviour. The individuals need to feel that they are useful, admired and recognised by others, for example if one participates in group activities whether it's professionally, academically or personally. When an individual is participating in a physical activity Maslow's theory of motivation would be important to consider in how an individual is motivated to engage in a physical activity it may

be looked at as a more extrinsic motivation considering that the individual needs to feel useful, admired and recognised by others.

Wilson & Rodgers (2002) conducted a study examining “the relationship between autonomous exercise motives and physical self-esteem in female exercise participants. The result of this study showed us that those who reported exercising for intrinsic reasons were more likely to report higher feelings of self-esteem, over those participants who were exercising for more extrinsic reasons reported lower perceived self-esteem.

There have been some correlations found in studies between types of motivation from self-determination theory and the level of self-esteem, (Kernis et al 2000). Who conducted a study “Master of One’s Psychological Domain? Not likely if One’s Self-Esteem is Unstable” and found that global perceptions of self-esteem were negatively associated with external and introjected regulations and positively associated with identified regulation and intrinsic motivation.

Self-Efficacy & SDT:

Self-efficacy refers to an individual's belief in his or her capacity to execute behaviours necessary to produce specific performance attainments (Bandura, 1977, 1986, 1997). It is the ability to gain control over one’s own motivation, behaviour and social environment. It is a person’s belief or judgment about been able to perform an activity. Self-Efficacy has had a major influence in the field of health psychology and it has been applied to various different behaviours including exercise.

Previous studies have proposed that the SDT should be integrated with other theories to further explain physical activity. (Hagger & Chatzisarantis, 2008) Sweet & Fortier 2012 looked at SDT and self-efficacy theory in a physical activity context. The study examined the integration of SDT and self-efficacy theory to predict physical activity. The aim was to

integrate the two theories together into one comprehensive model. The authors tested each theory separately and then tested it as one model. They looked at outcome expectations and tested if outcome expectations came before self-efficacy or did self-efficacy come first when deciding on participating in a physical activity. For the self-efficacy measures the task self-efficacy test, (Bandura) the barrier self-efficacy tests, scheduling self-efficacy test, and outcome expectations were used. The results showed us that self-efficacy was significantly correlated to physical activity. The importance of this study was that it sought to combine two theories as a way forward in understanding the behaviour change in connection with physical activity. Van Dyck, Cardon, Deforche, Giles, Sallis, Owen, & De Bourdeaudhuij, 2011, conducted an environmental and psychosocial in correlation with self-reported physical activity. The results showed that exercise self-efficacy as the strongest individual correlate of physical activity.

Self-efficacy has been proven to be a strong predictor of physical activity (Pan, et al 2009). SDT and self-efficacy are both theories of motivation, it is important to consider both when examining engagement in physical exercise. In 2006 Thogerson-Ntoumani & Ntoumanis, conducted research on SDT in relation to exercise related behaviours, cognitions, and physical self-evaluations, they proposed that identified and intrinsic motivation would be related to higher barriers of self-efficacy and that external regulation and introjected regulation would be related to lower barriers of self-efficacy. The results supported their hypothesis showing that higher barriers of self-efficacy were related to integrated and intrinsic motivation and lower barriers self-efficacy were related to external and introjected regulation. In addition McNeill, Wyrwich, Brownson, Clark, & Kreuter 2006 conducted research on environmental factors on predicting physical activity and found self-efficacy the strongest predictor of physical activity.

Life satisfaction & SDT:

Life satisfaction is related to physical and mental health and is a key determinant of happiness throughout life. Studies have shown in adults that engaging in a physical activity daily is indirectly positively related to life satisfaction. (Elavsky & McAuley., 2005 :). Martini-Albo, Nunez, Dominguez, Leon,& Thomas (2012) conducted a study examining the relationships between intrinsic motivation, physical self-concept and satisfaction with life: The participants were already taking part in a physical activity in their daily lives, had to complete some exercises a couple of times a week and they were monitored by an individual or special monitor. The results showed us that intrinsic motivation did positively relate to self-concept which in return increased satisfaction with life. The SDT posits that the three basic psychological needs of autonomy, relatedness, and competence are required for psychological well-being. How does life satisfaction relate to motivation to engage in a physical activity (extrinsic vs intrinsic)?

Rationale for the current research:

The present study is looking at the relationship between self-esteem levels, self-efficacy life satisfaction and self-determination motivation (extrinsic vs intrinsic) to engage in a physical activity. This could be important in our understanding of what motivates (extrinsically & intrinsically) people to engage in physical activities and how self-esteem, self-efficacy, and satisfaction with life relate to the activation of this behaviour. Gender differences will be examined between motivational factors (extrinsic/intrinsic) for engaging in a physical activity.

The present study aims to fill some gaps in previous research, such as Deci & Ryan's statement that self-esteem is not to be considered as a need, that the three basic psychological needs of autonomy, relatedness, and competence is enough for integrity, growth and well-

being. This study aims to look at the relationship between, self-esteem & satisfaction with life and motives for engaging in a physical activity (extrinsic & intrinsic). Even though there is no known research exactly like the present one, there are various studies done on self-determination theory and sports or engaging in a physical activity of a similar nature to this study.

H1:

It is hypothesised that there will be a significant relationship between self-esteem levels and motivation to engage in a physical activity. (Extrinsic vs Intrinsic)

H2:

It is hypothesised that there will be a significant relationship between self-efficacy levels and motivation to engage in a physical activity. (Extrinsic vs Intrinsic)

H3:

It is hypothesised that there will be a significant relationship between life satisfaction and motivation to engage in a physical activity. (Extrinsic vs Intrinsic)

H4:

It is hypothesised that there will be a statistically significant difference in gender and extrinsic/ intrinsic motives for engaging in a physical activity.

Method

Participants:

The participants (n=129) took part in an online questionnaire survey, created on survey monkey and posted onto Facebook, LinkedIn and also emailed to family and friends. Snowball sampling was also used. Only 97 participants answered all questions asked. The study was ethical approved by the research panel of DBS Ethical Committee. All anonymity of participant was assured. All participants had the option of withdrawing from completing the questionnaires at any time. Participation was completely voluntary. Nothing was given to them to reinforce participation. The total number of participants was 129, and from the 129 who answered the question on their sex, 42 were males and 84 were females. There were 3 participants who did not report their gender.

Design:

This study was designed as an exploratory correlational study. Multiple Regressions will be used to determine casual relationships and descriptives between variables. The predictor variables are Self Esteem, Self-Efficacy, and Life Satisfaction. Motivation for engaging in a physical activity (Extrinsic/Intrinsic) is the criterion variable. An independent samples t tests will be used to look for differences in gender within the sample.

Materials:

In the current study, the online questionnaire, facilitated through Survey Monkey, requested participants to self-report on Self Esteem, Self-Efficacy, Life Satisfaction, and motives for engaging in a physical activity (extrinsic/intrinsic). Incorporated into the questionnaire were items relating to psychological factors.

10-item Rosenberg Self-Esteem Inventory (1985), the 10-item Schwarzer, R., & Jerusalem, the Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) was used as a measure of global Self-esteem. Participants rated their self-esteem on a 4-point Likert scale ranging from strongly agree to strongly disagree. The 10-item scale included statements such as “On the whole, I am satisfied with myself” and “I feel that I have a number of good qualities.” After reversing of relevant scores, the scores are summed. Possible self-esteem scores range from 0-30. Individuals who score at 22 or over are considered to have a high self-esteem. Those who score at 21 or less are considered to have a low self-esteem. Cronbach’s alpha for this scale was reported at a high $\alpha=.89$ which means it is highly reliable. A copy of Rosenberg’s Self Esteem Scale is enclosed in the appendix section.

The 10-item Schwarzer, R., & Jerusalem, M. self-Efficacy (1995), was designed to assess the subject’s perceived sense of self-efficacy. It aims to measure the beliefs of the individual as to whether they feel they can reach certain tasks or attain specific goals. The result is determined by respondents evaluating themselves on each item using a 5-point scale, with the total being added together giving a possible score between 10 and 50 points. The factors measured on the scale range from ‘I can always solve difficult problems if I try hard enough’ to ‘I can remain calm when facing difficulties because I can rely on my coping abilities’, with each part showing towards the participant’s confidence in completing tasks. Cronbach’s alpha for this scale was reported at a high $\alpha=.88$ which means it is highly reliable. A copy of the General Self-efficacy Scale, (Schwarzer & Jerusalem, 1995) is enclosed in the appendix section.

The Satisfaction with Life scale (Diener, Emmons, Larsen, & Griffin, 1985) is a five item measure examining how an individual is satisfied with life. Five statements are given to which the participant is required to indicate the extent to which they agree/disagree with it. “In most ways my life is close to my ideal” is an example of one of the statements. Responses are given in a Likert style scale ranging from 1 being ‘strongly disagree’ to 7

being 'strongly agree'. Scores are totalled for each individual, with higher scores reflecting greater satisfaction with life and lower scores reflecting lower satisfaction. For example scores of 5-9 are described as 'extremely dissatisfied' and top scores of 31-35 are classed as 'extremely satisfied' Cronbach's alpha for this scale was reported at a high $\alpha=.87$ which means that is highly reliable. A copy of the *The Satisfaction with Life scale*, (Diener, Emmons, Larsen, & Griffin, 1985) is enclosed in the appendix section.

Deci and Ryan's 16 item questionnaire RM 4-FM: Motivation for Physical Activity and Exercise/ Working Out. This questionnaire is designed to assess whether the participants are extrinsically or intrinsically motivated to engage in a physical activity. The questionnaire makes a statement of "I try, or would like to try, to be physically active regularly" and the participants have to rate themselves on a Likert scale between 1 (not true at all), to 7 (very true) on 16 items such as "because I would feel bad about myself if I didn't". The scores are totalled .A mean from each subscale of, (i) External Regulation, (ii) Introjected Regulation, (iii) Identified Regulation, and (iv) Intrinsic Motivation is calculated and then the relative autonomy is calculated by the sum of each subscale multiplied by its weighting. $(\text{Ext Reg} * -2) + (\text{Intro Reg} * -1) + (\text{Ident Reg} * 1) + (\text{Intrins Motiv} * 2)$. A negative score is more related to external motivation, while positive scores relate to internal factors. Cronbach's alpha for this scale was reported at a high $\alpha=.83$ which means that is highly reliable. A copy of Deci and Ryan's 16 item questionnaire RM 4-FM: Motivation for Physical Activity and Exercise Scale is enclosed in the appendix section.

Procedure:

The self-report questionnaire was completed by participants online at survey monkey. The link to the questionnaire was presented to the participant that it was a five page questionnaire which as 100% anonymous. The title of the study was communicated to each participant. On the cover page of the questionnaire the participants were informed before

starting the questionnaire that some of the questions asked may cause some minor negative feelings, but it has been used widely in research. The participants were also informed that participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected. It was highlighted that the results of the questionnaires' will be securely stored on a password protected computer. In addition it was communicated that it was completely voluntary and that there was no obligation to participate. If any of the questions raised difficult feelings for the participants, there were contact phone numbers for support services such as Samaritans Ireland and Aware on the cover page and also at the end of the questionnaire. On the questionnaire cover sheet, it was stated that by completing and submitting the questionnaire that you are consenting to participate in the study. A copy of the questionnaire pack is included in the appendices.

Ethical considerations:

Ethical approval for this research was obtained from the Dublin Business School ethics review board. Research was conducted in accordance with Dublin Business School's ethical guidelines for research with human participants.

Results

SPSS version 22 was used for all statistical procedures. A total of 129 questionnaires were analysed. Out of the total of 129, 42 were males and 84 females. There were 3 respondents who did not record their gender. A total of 129 completed questionnaires were analysed. However not all participants answered all the questions there were various questions skipped. The research findings were provided in two sections of descriptive findings and inferential findings. Descriptive indicators of the research included mean, standard deviation of all variables are presented in the next section. The inferential findings will show results of the independent t-tests and the multiple regressions.

Descriptive Statistics:

Descriptive statistics were run on the data set, to make simple comparisons of the data set and will be addressed in this section to present understanding of the relationship between the variables. The total number of participants in the study was (n=129) 42 male (32.3%) and 84 female (64.6%) 3 did not report their gender. Table 1 contains the mean and standard deviations for psychological measure: Self Esteem, Self-Efficacy, and Satisfaction with life, & Self Determination. Assumptions for parametric tests were undertaken before running the analysis. Histograms and Q: Q plots were examined for normally distribution and checks for extreme outliers were undertaken.

Table 1 *Descriptive Statistics of Psychological Measures*

Variable	Mean	Standard Deviation
Self Esteem	21.05	5.08
Self-Efficacy	31.81	4.39
Satisfaction with Life	23.18	6.89
Self-Determination PA RA	9.76	3.97

Table 2 *Descriptive Statistics for motivations (extrinsic/Intrinsic) according to Gender*

Variables	Females(n=84)		Males (n = 42)	
	M	SD	M	SD
External Regulation	1.45	.91	1.63	1.02
Intojected Regulation	3.12	1.16	3.15	1.38
Identified Regulation	5.46	1.13	5.23	1.14
Intrinsic Motivation	5.10	1.31	5.51	1.30

Table 2 shows the means and standard deviations for males and females in relation to motivation (extrinsic/intrinsic) to engage in a physical activity. Mean scores for the subscales revealed that individuals participated in a physical activity for more autonomous reasons over controlled reasons. For females identified regulation was the most strong regulation, (M=5.46, SD=1.13), and for males intrinsic motivation was the strongest (M= 5.51, SD = 1.30). External regulation scoring the lowest, would suggest that engaging in a physical activity is done for more autonomous reasons and less for controlled reasons.

*Inferential findings:**Gender & Motivation to engage in a physical activity (extrinsic/intrinsic)*

In order to look for significant differences between Gender & motivation to engage in a physical activity (extrinsic/intrinsic) a series of independent t tests were conducted. The data was split by gender so that analysis of females and males could be checked separately. An independent sample t-test found that there was no statistical difference between motivation to engage in a physical activity (extrinsic/intrinsic) in males (M=10.13, SD= 3.95) and females (M= 9.64, SD= 3.93) ($t(99) = .60, p=5.47$). Therefore the null can be accepted in relation to hypothesis 4. Table 3 shows a summary of the results for the independent t-test for Relative Autonomy.

Table 3 Gender & Motivation to engage in a physical activity (extrinsic/intrinsic) RA

Variables	Mean	SD	t	df	p
PA RA - Males	10.13	3.95	.60	99	.55
PA RA - Females	9.64	3.93			

To check for gender differences for all of the 4 different motivation regulations, external, introjected, identified, and intrinsic, four different t tests were conducted. There were no statistical difference between motivation to engage in physical activity across the 4 different motivation regulations and gender. External Regulation reporting at (M=1.63, SD =1.02) for males and (M=1.49, SD = .96) for females ($t(104) = .73, p=.47$). Introjected regulation: (M=3.15, SD = 1.38) for males and (M=3.19, SD = 1.16) for females ($t(105) = .13, p=.85$). Identified regulation (M= 5.53, SD = 1.14) for males, (M= 5.52, SD = 1.11) for females, (t

(106), = .04, $p=.96$). Intrinsic Motivation: (M=5.51, SD=1.30) for males, (M =5.08, SD = 1.33) for females, ($t(105)$, = 1.58, $p=.12$).

Table 3.1 Gender & External Regulation in a physical activity

Variables	Mean	SD	t	df	p
External Reg - Males	1.63	1.02	.73	104	.47
External Reg - Females	1.49	.96			

Table3.2 Gender &Introjected Regulation in a physical activity

Variables	Mean	SD	t	df	p
Introjected Reg Males	3.15	1.38	.13	105	.85
IntrojectedReg Females	3.19	1.16			

Table 3.3 Gender & Identified Regulation in a physical activity

Variables	Mean	SD	t	df	p
Identified Reg Males	5.53	1.14	.04	106	.96
Identified Reg Females	5.52	1.11			

Table 3.4 Gender & Intrinsic Motivation in a physical activity

Variables	Mean	SD	t	df	p
Intrinsic Motivation Males	5.51	1.30	1.58	105	.12
Intrinsic Motivation Females	5.08	1.33			

Self-esteem, Self-efficacy, Satisfaction with life as predictors of motivation (extrinsic/intrinsic to engage in a physical activity)

To examine the relationship between self-esteem, self-efficacy, and satisfaction with life as predictors of motivation (extrinsic/intrinsic) to engage in a physical activity, a multiple regression analysis was conducted. The assumptions for multiple regressions were all considered before running the analysis. The criterion variable was normally distributed as checked on the histogram, there were no extreme outliers as checked on the Q: Q Plot. After checking scatterplots for linear relationships, all the predictor variables were linearly related to the criterion variable. Checks for multicollinearity across all predictor variables were checked and none were correlated with each other over 0.7. Mahal was reporting at 11.345 which are under the maximum of 16.27 for three variables. Finally a multiple regression was used to test whether self-esteem, self-efficacy, and satisfaction with life were all predictors of motivation (extrinsic/intrinsic) to engage in a physical activity Relative autonomy. The results of the regression indicated the three predictors variables explained 31 % of variance ($r^2 = .33$, $F(3, 93) = 15.54$, $p < .001$). It was found that self-esteem significantly predicted motivation (extrinsic/intrinsic) to engage in a physical activity (Beta = .41, $p = .001$, 95% CI = .13 - .51), as did self-efficacy, (Beta = .28, $p = .008$, 95% CI = .07 - .45), however satisfaction with life alone did not significantly predict motivation (extrinsic/intrinsic) to engage in a physical activity (Beta = -.07, $p = .54$, 95%CI = -.17 - .09). Therefore we can reject the null hypothesis 1 & 2 and accept the null hypothesis 3. See table 4 for regression model parameters with physical activity relative autonomy PA RA.

Table 4: Regression Model Parameters & PA RA

Variable	B	SEB	β	t	Sig.	Part Corr
Constant	-4.27	2.46		-1.74	.09	
Self Esteem	.32	.10	.41	3.36	.001	.33
Self Efficacy	.26	.09	.28	2.72	.008	.27
SWL	-.04	.07	-.70	-.62	.54	-.06

A second multiple regression was conducted to look at how self-esteem, self-efficacy, and satisfaction with life (SWL) predicted External regulation. The histogram was not normally distributed there was kurtosis and a slight skewness. The Pearson's table showed that the PV's were below 0.3 in relation to the CV. The results of the regression indicated the three predictors variables explained 3 % of variance ($r^2 = .06$, $F(3, 97) = 2.23$, $p > .001$). The three variables did not predict external regulation together, neither individually. Please refer to table 4.1 for summary of results.

A third multiple regression was conducted to look at how self-esteem, self-efficacy, and satisfaction with life predicted introjected regulation. The histogram was normally distributed with slight kurtosis. The Pearson's table showed that the PV's were not correlated above 0.3 in relation to the CV. The results of the regression indicated that the three predictor variables explained 3% of variance ($r^2 = .06$, $F(3, 99) = 2.15$, $p > .001$). The three variables did not predict introjected regulation together, neither individually. Please refer to table 4.2 for summary of results.

A fourth multiple regression was conducted to look at how self-esteem, self-efficacy, and satisfaction with life predicted identified regulation. The histograms were not normally

distributed showing kurtosis and slight skewness. The Pearson's table showed that all PV's were not correlated above 0.3 in relation to the CV. The results of the regression indicated that the three predictor variables explained 5% of variance ($r^2 = .07$, $F(3, 99) = 2.60$, $p > .001$) the three variables did not predict identified regulation together, neither individually. Refer to table 4.3 for summary of results.

A fifth multiple regression was conducted to look at how self-esteem, self-efficacy and satisfaction with life predicted intrinsic motivation. The histogram and Q: Q plots were distributed normally. The Pearson's table showed that the PV was correlated above 0.3 with the CV and less than 0.7. The results of the regression indicated that the three predictor variables explained 16% of the variance ($r^2 = .19$, $F(3, 98) = 7.61$, $p < .001$). Self-efficacy alone predicted intrinsic motivation to engage in a physical activity. (Beta = .24, $p = .04$, 95% CI = .00 - .14) however self-esteem (Beta = .20, $p = .13$, 95% CI = -.02 - .12), and Satisfaction with life (Beta = .08, $p = .49$, 95% CI = -.03 - .06) did not individually predict intrinsic motivation to engage in a physical activity. See table 4.4 for summary of results.

As the results show us that there is no positive significance over all between self-esteem, self-efficacy, and satisfaction with life with external regulation, introjected regulation, and identified regulation in relation to engaging in a physical exercise, however there are some positive correlations showing us between self-efficacy as a predictor of intrinsic motivation. The relative Autonomy for physical activity showed that self-esteem and self-efficacy are both predictors of motivation to engage in a physical activity (extrinsic/ intrinsic).

Table 4.1: Regression Model Parameters & External Regulation

Variable	B	β	t	Sig.	Part Corr	95% CI
Constant	2.89		4.35	.000		1.57 – 4.21
Self Esteem	-.04	-.20	-1.47	.15	.15	-.09 - .01
Self Efficacy	-.03	-.12	-1.00	.32	-.10	-.08 - .02
SWL	.00	.06	.49	.63	.05	-.03 - .04

Table 4.2: Regression Model Parameters & Introjected Regulation

Variable	B	β	t	Sig.	Part Corr	95% CI
Constant	4.90		5.49	.000		3.13 – 6.67
Self Esteem	-.05	-.20	-1.47	.15	-.15	-.11 - -.02
Self Efficacy	-.02	-.08	-.71	.48	-.07	-.09 - .04
SWL	.00	.00	.04	.97	.00	-.04 - .05

Table 4.3: Regression Model Parameters & Identified Regulation

Variable	B	β	t	Sig.	Part Corr	95% CI
Constant	3.42		4.05	.000		1.74 – 5.10
Self Esteem	.04	.15	1.13	.26	.11	-.03 - .10
Self Efficacy	.04	.15	1.25	.21	.13	-.02 - .10
SWL	.00	.01	.10	.92	.01	-.04 - .05

Table 4.4: Regression Model Parameters & Intrinsic Motivation

Variable	B	β	t	Sig.	Part Corr	95% CI
Constant	1.39		1.53	.13		-.42 – 3.20
Self Esteem	.05	.20	1.55	.13	.16	-.02 - .12
Self Efficacy	.07	.24	2.13	.04	.21	.005 - .143
SWL	.02	.08	.69	.49	.07	-.03 - .06

Table 4.5 Regression Model Summary

Variable	R	R²	Adjusted R	ANOVA	Sig(f)
PA RA	.58	.33	.31	F=15.54	.000
External Reg	.25	.06	.04	F = 2.23	.09
Introjected Reg	.25	.06	.03	F = 2.15	.10
Identified Reg	.27	.07	.05	F = 2.60	.06
Intrinsic Motivation	.44	.19	.16	F = 7.61	.000

Criterion Variable: Relative Autonomy for physical activity, External Regulation, Introjected Reg, Identified reg, and Intrinsic motivation

Predictor Variables: Self Esteem, Self-Efficacy, & Satisfaction with life

Discussion

The present study examined the relationship between Self-Esteem, Self-Efficacy, and Satisfaction with Life, Gender, and motives for engaging in a physical activity (extrinsic/intrinsic). The aim of the research was to examine if self-esteem, self-efficacy, and satisfaction with life were all predictors of motives (extrinsic/intrinsic) for engaging in a physical activity. Gender differences were examined on motives for engaging in a physical activity. (Extrinsic vs Intrinsic). It was found that individuals reported more autonomous motives for engaging in a physical activity which would agree with Kilpatrick et al 2005 who proposed that those who participate in a physical activity other than sports are more intrinsically motivated; in the present study men reported more intrinsic motivation and women reporting more identified regulation of motivation. However there was no statistical difference in gender on motives for engaging in a physical activity therefore hypothesis 4 null can be rejected.

Multiple regression analysis showed that all three variables together were predictors of motives to engage in a physical activity (Extrinsic vs. Intrinsic) (RA) Individually Self Esteem & Self Efficacy were predictors of motives for engaging in a physical activity where satisfaction with life was not significantly a predictor. As hypothesised there would be a significant relationship between self-esteem & self-efficacy in motives to engage in a physical activity (Extrinsic vs, Intrinsic). Therefore the null hypothesis can be rejected. However the third hypothesis was not supported by the data and showed no significant relationship alone with motives for engaging in a physical activity. Therefore we can accept the null.

Hypothesis 1 predicting that there would be a relationship between self-esteem levels and motivation to engage in a physical activity (extrinsic vs intrinsic). Although there was a positive relationship between self-esteem and PA RA, when Self-esteem was correlated with

the four subscales individually there was no positive relationship between self-esteem and external regulation, introjected regulation, identified regulation, or intrinsic motivation. The findings disagree with Kernis et al 2000 who found that global perceptions of self-esteem were positively associated with identified regulation and intrinsic motivation and Wilson & Rodgers 2002 showed us that those who reported exercising for intrinsic reasons were more likely to report higher feelings of self-esteem, over those participants who were exercising for more extrinsic reasons reported lower perceived self-esteem. However the present study did find a positive correlation between self-esteem and relative autonomy of motivation to engage in a physical activity. Relative autonomy accounts for the extent to which a person's exercise behaviour is either more self-determined or less self-determined. A higher score in relative autonomy would mean that an individual reports more autonomous motivation such as identified and intrinsic. When the regression was conducted for PA RA and self-esteem, it showed a positive correlation that self-esteem does predict autonomous motivation to engage in a physical activity. The null can be rejected for the intrinsic motivation on hypothesis 1; however we can accept the null for extrinsic motivation and self-esteem as the results showed no significance for this part.

Hypothesis 2 predicting that there would be a significant relationship between self-efficacy and motivation to engage in a physical activity (extrinsic vs intrinsic). The regression analysis showed a positive relationship between self-efficacy as a predictor of motivation to engage in a physical activity (RA). When self-efficacy was correlated with the four subscales of behavioural regulation, the regression analysis showed non-significant with external regulation, introjected regulation and identified regulation; however it showed a significant relationship with intrinsic motivation. This would agree partially with Thogerson-Ntoumanic & Ntoumanis 2006, who found a strong relationship between self-efficacy and identified and intrinsic motivation. McNeill et al 2006 found in their study that self-efficacy

was the strongest predictor in a physical activity. In the present study the regression between self-esteem, self-efficacy and SWL as predictors of relative autonomy self-efficacy did not show as the strongest predictor, however when it was correlated with the four subscales of motivation it was found to be the strongest predictor of identified regulation and intrinsic motivation over all of the other variables. Following the results of the regression analysis the null hypothesis can be rejected.

Hypothesis 3 predicting that there would be a significant relationship between life satisfaction and motivation to engage in a physical activity (extrinsic vs intrinsic). The multiple regression analysis showed that there was no significant relationship between SWL and relative autonomy motivation or across any of the four subscales of motivation. After rechecking the data in SPSS it showed that 21 participants in total did not answer the questionnaire on life satisfaction but had answered the other questionnaires. This may have affected the results of the analysis. For the present study we can accept the null for hypothesis 3.

Hypothesis 4 predicting that there would be a statistically significant difference in gender and extrinsic / intrinsic motives for engaging in a physical activity. Five independent t-tests were conducted to look for differences between genders in the relative autonomy and the four subscales of motivation regulations, external, introjected, identified, and intrinsic. There were no significant differences found in relative autonomy or the four subscales of motivation regulations. The findings support Hall et al 2010 who checked for significance across gender in relation to exercise motives the authors looked at gender differences in the BREQ-2 questionnaire for behaviour regulations on engaging in a physical activity and found no gender difference, & Lutz et al 2003 who conducted a meta-analysis examining the influence of gender on the SDT motivational regulations for physical activity across 27 studies previously done, the authors found that there was near zero effect sizes and found no

differences between men and women across all of the regulations of motivation to engage in a physical activity. Therefore for hypothesis 4 the null can be accepted.

The present study does show a positive correlation between self-esteem & self-efficacy with motives for engaging in a physical activity in the relative autonomy, however when looked at closely across all of the four motivation regulations, self-esteem does not show significant, self-efficacy showed significant with intrinsic motivation. Perhaps the sample who participated in the study could have had more interest in participating in all questions asked on the questionnaire if it was physically handed out to people and verbally informed. It was posted on the social media such as Facebook, people may have been generally curious about the research and when they decided to participate and saw the questions asked they didn't feel comfortable to continue on or skip through some questions. Possibly if a physical copy of the questionnaire was given to the participants after a verbal explanation on informed consent was given about the purpose of the research the participants may have felt more comfortable answering all the questions asked. If the present study should be replicated and done again, a few changes may show a more significant result for example, when doing the questionnaire again add a question on whether the people engage in a physical activity or not and then analyse the data differently by those who do participate and those who don't participate in a physical activity. This way self-esteem, self-efficacy, and satisfaction with life could be examined between the participators and the non-participators. After further reading on previous research it seems the BREQ, and the BREQ-2 questionnaires are used quite frequently when examining the differences in motivational regulations on engaging in a physical activity, where this questionnaire is very similar to the one used in the present study, it does not allow for amotivation or integrated regulation to be examined. Gender was not split evenly there were more females who participated over men. Perhaps to have a balance

between genders may show more significance in gender difference. In the present study there were almost 50% more women than men.

There are two important strengths to the present study, first we were able to get a good understanding of the relationships between self-esteem, self-efficacy and satisfaction with life and motivation to engage in a physical activity (extrinsic vs intrinsic). As there is no known previous research exactly like this one it was important to see how each variable was related to motives and if individuals are extrinsically or intrinsically motivated when it comes to participating in a physical activity. The second strength is that it shows that self-esteem is in fact and should be considered in an individual when deciding to engage in a physical activity and to be congruent in doing so. Awareness as to why an individual persists at a physical activity is important for physical and psychological health and self-esteem does play a critical role in that engagement. It may be possible to influence persistence in individuals on exercise if they understood better the concepts of motivation and amotivation. Perhaps individual interventions would focus on each individual's different motivation and may result in engaging in more healthy behaviours. The limitations of this study would be that it has very low ecological validity, it can't account for the population in real life. Perhaps the study could have been taken in a gym sample of a larger scale of people and a balance between genders. Another limitation of the present study would be that the SDT questionnaire did not consist of all of the motivation regulations, there are six and this just had four. It did not include amotivation or integrated regulation. As previously mentioned perhaps using the BREQ-2 questionnaire would have supported the hypothesis more. In addition a further limitation was that the participants did not answer all of the questions asked if all of the questions were answered by doing a handwritten questionnaire the results may not be so confounding.

While this study did provide some insight into the link between Self-esteem, self-efficacy, and satisfaction with life and motives for engaging in a physical activity (extrinsic vs

intrinsic) it needs to be considered that the measures were taken by self-report. As suggested if the study would be replicated in the future, perhaps a study in real life settings such as a gym with a larger sample, and balance between genders, the results may be less confounding. In addition it may be important to look for differences in different groups such as those who participate regularly in a physical activity over those who don't. In addition to look at covering all of the different motivational factors that cover the SDT such as external regulation, introjected regulation, identified regulation, integrated regulation, intrinsic motivation and amotivation. Furthermore it may be good suggestions for a replication of the present study to add another question to the questionnaire such as how often do you participate in a physical activity? This may allow a comparison to be done on psychological measures between those who frequently participate over those who don't usually participate.

The present research shows how important it is to consider self-esteem & self-efficacy on what motivates an individual to participate in a physical activity in relation to the SDT. It is very important to understand and that an individual's understands their reason for engaging in a physical activity and persisting in doing so. A more individual interventions approach with each individual in understanding their motivation would be more effective in encouraging an individual to persist at a physical activity. Once the individual becomes aware of how they are motivated and what causes their amotivation, they may be able to work on this and engage in more healthy behaviours to enhance psychological well-being such as self-esteem, self-efficacy, and then be more satisfied with life.

Conclusion

The present study aimed to look at how self-esteem, self-efficacy, and satisfaction with life predicted motivation to engage in a physical activity (extrinsic vs intrinsic). Furthermore it looked at gender differences on the different motivation regulations and relative autonomy. There was a statistical significance found on the relationship between self-esteem and relative autonomy which suggest that self-esteem is a predictor of more autonomous motivation to engage in a physical activity such as intrinsic motivation. It showed non-significant across the 4 different motivation regulations. A positive correlation was found between self-efficacy as a predictor of intrinsic motivation along with the relative autonomy. However when correlated across the 4 different motivation regulations it was only positively correlated with intrinsic motivation. Satisfaction with life showed non-significant as a predictor of motivation to engage in a physical activity (extrinsic vs intrinsic) in relation to relative autonomy and the 4 motivation regulations. There was no statistical significance found in gender differences across all different motivations to engage in a physical activity. Due to these confounding findings and missing questionnaires answers in particular self-esteem and satisfaction with life, further research is needed to consider changing the sample from a social media to a printed handout of the questionnaire to the general public or perhaps in a gym setting so that informed consent is communicated verbally to the participants on before deciding to complete the questionnaire or not.

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Appendices:10-item Rosenberg Self-Esteem Inventory (1985)

Below is a list of statements dealing with your general feelings about yourself.

If you *strongly agree* with the statement circle **SA**.

If you *agree* with the statement circle **A**.

If you *disagree* with the statement circle **D**.

If you *strongly disagree* with the statement circle **SD**.

1.	On the whole, I am satisfied with myself.	SA	A	D	SD
2.	At times, I think I am no good at all.	SA	A	D	SD
3.	I feel that I have a number of good qualities.	SA	A	D	SD
4.	I am able to do things as well as most other people.	SA	A	D	SD
5.	I feel I do not have much to be proud of.	SA	A	D	SD
6.	I certainly feel useless at times.	SA	A	D	SD
7.	I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
8.	I wish I could have more respect for myself.	SA	A	D	SD
9.	All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10.	I take a positive attitude toward myself.	SA	A	D	SD

Scoring.

Items 1,3,4,7 & 10 are scored : SA=3, A=2, D=1, SD=0.

Items 2, 5, 6, 8 & 9 are reverse scored : SA=0, A=1, D=2, SD=3.

Sum the scores for the 10 items. The higher the overall total, the greater the self esteem.

References

Rosenberg, Morris. 1989. *Society and the Adolescent Self-Image*. Revised edition. Middletown, CT: Wesleyan University Press.

Further Reading

<http://www.bsos.umd.edu/socy/research/rosenberg.htm>

Deci and Ryan's 16 item questionnaire RM 4–FM

RM 4–FM: Motivation for Physical Activity and Exercise/ Working Out—Questionnaires*									
Motivation for Physical Activity*									
People are active regularly for a variety of reasons. Using the rating scale provided below, please indicate how true each of the following reasons is for why you are, or would like to be, active regularly.									
Rating Scale									
1	2	3	4	5	6	7			
not at all true		somewhat true			very true				
						Example			
I try, or would like to try, to be physically active regularly						Rating		Extrinsically Motivated	Intrinsically Motivated
1. because I would feel bad about myself if I did not								2	6
2. because others would be angry at me if I did not								6	2
3. because I enjoy physical activities								3	7
4. because I would feel like a failure if I did not								6	2
5. because I feel as if it's the best way to help myself								3	5
6. because people would think I'm a weak person if I did not								7	1
7. because I feel as if I have no choice about being active; others make me do it								6	1
8. because it is a challenge to accomplish my goal								2	6
9. because I believe physical activity helps me feel better								3	6
10. because it's fun								3	6
11. because I worry that I would get into trouble with others if I did not								6	2
12. because it feels important to me personally to accomplish this goal								3	5
13. because I feel guilty if I am not regularly active								5	5
14. because I want others to acknowledge that I am doing what I								6	2

have been told I should do					
15. because it is interesting to see my own improvement			3	6	
16. because feeling healthier is an important value for me			3	7	
External Regulation: Questions 2, 7, 11, 14	0.0		6.0	1.8	
Introjected Regulation: Questions 1, 4, 6, 13	0.0		5.0	3.5	
Identified Regulation: Questions 5, 9, 12, 16	0.0		3.0	5.8	
Intrinsic Motivation: Questions 3, 8, 10, 15	0.0		2.8	6.3	
Relative Autonomy Index	0.0		-8.5	11.3	
<p>Autonomy index indicates the relative impact of intrinsic and extrinsic factors in your motivation to be active.</p> <ul style="list-style-type: none"> • Negative numbers reflect that you are extrinsically motivated for change; that is, external factors are important in regulating your behaviour. • Positive numbers reflect that intrinsic motivation is primarily involved in your behaviour. 					
<p>* Source: Deci, Edward L., and Richard M. Ryan. "Exercise Self-Regulation Questionnaires." <i>Self-Determination Theory: An Approach to Human Motivation and Personality—The Self-Regulation Questionnaires</i>. 2004. <www.psych.rochester.edu/SDT/measures/selfreg_exer.html>. Adapted with permission.</p>					

10-item Schwarzer, R., & Jerusalem, M. self-Efficacy (1995)

Please read the sentences below and select an answer for each statement which indicates how much the statement applies to yourself.

1 = **Not at all true** 2 = **Hardly true** 3 = **Moderately true** 4 = **Exactly true**

1	I can always manage to solve difficult problems if I try hard enough.	
2	If someone opposes me, I can find the means and ways to get what I want.	
3	It is easy for me to stick to my aims and accomplish my goals.	

4	I am confident that I could deal efficiently with unexpected events.	
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	
6	I can solve most problems if I invest the necessary effort.	
7	I can remain calm when facing difficulties because I can rely on my coping abilities.	
8	When I am confronted with a problem, I can usually find several solutions.	
9	If I am in trouble, I can usually think of a solution.	
10	I can usually handle whatever comes my way.	

The Satisfaction with Life scale (Diener, Emmons, Larsen, & Griffin, 1985)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item.

Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

_____ In most ways my life is close to my ideal.

_____ The conditions of my life are excellent.

_____ I am satisfied with my life.

_____ So far I have gotten the important things I want in life.

_____ If I could live my life over, I would change almost nothing.

- 31 - 35 Extremely satisfied
- 26 - 30 Satisfied
- 21 - 25 Slightly satisfied
- 20 Neutral
- 15 - 19 Slightly dissatisfied
- 10 - 14 Dissatisfied
- 5 - 9 Extremely dissatisfied

Information sheet:

My name is Anne-Marie Culleton and I am conducting research in the Department of Psychology that explores motives for engaging in physical activity. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study and participation involves completing and returning the attached anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected.

The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected computer.

It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

Should you require any further information about the research, please contact

Anne-Marie Culleton, [REDACTED]

My supervisor can be contacted [REDACTED]

Or Telephone number: [REDACTED]

Helpline contact numbers:

Samaritans Ireland: 116 123

Aware: 1890 303 302

Thank you for taking the time to complete this survey.

Scoring

Add the scores together from all 10 items. The higher the total the greater the person's generalized sense of self-efficacy.

References

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.

Further Reading

<http://userpage.fu-berlin.de/~health/selfscal.htm> (author's webpage for GSES)

<http://www.ralfschwarzer.de/> (additional self-efficacy scales from author)