Physical activity, its relationship with psychological well being and self perception, and in keeping us all psychologically healthier.

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Abstract

This study provided quantitative correlational review of the relationship between physical activity, psychological well being and self perception. A total of (n = 65) participants took part in this study ranging between 18 and 40 years of age. Demographic details were also reviewed in relation to the three variables. Measurements for the study included the Habitual Physical Activity Questionnaire, the Psychological General Well Being Index and the Body Esteem Scale. Results indicated a positive non significant relationship between physical activity and psychological well being (r = .11), a significant correlation relationship between physical activity and self perception (r = .018). No significant relationship was found between physical activity scores and a specific gender, and no significant difference was observed between self perception scores and gender.
(1) Introduction to the Literature

“Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it.”, Plato. From this quote you can see humans’ interest in the physical activity-psychological relationship can be traced back millennia, and it manifests in the centrality of health within human experience. The phenomenon was not just overlooked, but the relationships had been hypothetical and speculative rather than experimental, to say the least, stated Hammet (1967). How the literature in the coming years would come to change these criticisms as a greater interest of the physical activity-psychological relationship was undertaken.

The purpose of this research project is to shed a greater insight into the effects physical activity (PA) has on psychological well being (PWB), such as how exactly does being physically active effect health functioning in an individual’s mind, or being physically inactive and the consequences it has on an individual. Sedentary lifestyles have become a health issue of great concern in recent years (WHO, 2004). Today there is far more opportunities for sedentary alternatives to active lifestyles than ever (Norman et al., 2005), research has even indicated that sedentary living was associated with poorer mental health scores (Hammer, Stamatakis, & Mishra, 2010). During the last three decades physical activity has risen to prominence as both a public matter and of research interest. It can be attributed to possibly three factors, the first of these factors is due to this sedentary living mentioned above. The second causal mechanism is the consequences of physical inactivity, with the third being the insight gained in the positive consequences of physical activity on health and the benefits it can provide (Haskell et al., 2007). These issues, coupled with the lack of a positive treatment without any side effects to treat psychological problems are unknown in Ireland as well as worldwide, make it a topic worthwhile studying to gain insight in an Irish
context. So it is valuable to address the psychological effects of PA not only to reduce sedentary living, but also due to rising number of psychological issues in Ireland.

The prevalence of mental illnesses such as depression, anxiety, personality disorders coupled with the ever increasing problem of obesity and other eating disorders, the world seems to look a gloomy place, however it’s been proven that with regular physical activity these problems are reduced (Myers, 2003; Netz et al, 2005; Herring, O’Connor & Dishman, 2010). It’s assumed that by 2020 depression will be the second leading cause of disease worldwide (RCSI, 2011), so believe it or not mental health problems affect mortality hugely and will be the most prevalent illness in the world in the near future if nothing is done to prevent and treat them. Other literature that sheds light upon the prevalence of mental illness is the British department of health’s study on mental illnesses (2005) found between 1991 and 2003 a threefold increase in the number of anti depressant medication prescribed in England, rising from 9 million in 1991 to 28 million in 2003 (Morgan, Griffiths, Baker & Majeed, 2005). Moreover in Ireland the prevalence of attaining psychological distress is 12% (Tedstone Doherty, Moran & Kartalova- O’Doherty, 2008). This follow up study conducted by Tedstone Doherty, Moran & Kartolov-O’Doherty investigated psychological distress in the Irish population and was one of the first countrywide studies conducted on the topic. Other relevant findings were that almost 10% of the general population who visited a practitioner spoke to them about mental health issues, and it’s suggested that 19,222 will use inpatient services for over one year. The HSE (2007) claimed that one in ten people will report a personal experience of mental health issues during their life.

This research project will also examine the effects that physical activity has on one’s self perception. With the increasing influence of media images, magazines, size ‘0’ models and other commercial brands giving youths as well as adults the ‘perfect’ perception of what a one should look like, these concepts (if one believes in them strongly) might lead to
psychological issues which can be detrimental to a person. Thus it is important to investigate this topic further as the extensive growth in media and technology could be most likely the reason for the increased statistics of body dysmorphia and obsessions with appearance and fitness (Cash, 1994). This is a growing issue worldwide so it is also of importance to discuss it in relation to physical activity to understand if interventions can increase self perception levels positively as shown by previous research (Baldwin & Courtney, 1997; Davis, 1997).

It is essential to discuss these concepts in detail prior to the findings of this research, as previous research contributes to the research being conducted in this project and previous literature will assist the outcomes and findings. A review of the literature will also give the individual an insight into the comparisons and contrasting views that this research project finds compared to previous literature and studies on this topic.

(1.1) **Defining Physical Activity**

Engaging in PA is one of the best ways to improve physical and psychological health as well as emotional health. Physical activity is defined by WHO (2004) as “any bodily movement produced by skeletal muscles that requires energy expenditure”. It is crucial for an individual to keep physically active as sedentary living doubles the risk of mortality and morbidity by means of coronary heart disease and strokes (Berlin, & Colditz, 1990; Richardson et al, as cited in Holley, Crone, Tyson & Lovell, 2011). The Organisation for Economic Co-Operation and Development (OECD), containing the world’s most developed countries, suggests physical inactivity is estimated to cause 12% of all mortality, 5% percent of disease and 2% of all morbidity. Being less PA can lead to obesity and physical health issues for that person too (Balboa-Castillo, 2011).

An individual’s motive for performing physical activity may be down to health gains, enjoyment, transport or well-being. Forms of physical activity could be walking, everyday journeys, active play, work related activity, active recreation or competitive sport
(Department of Health, 2011), all these concepts involve energy expenditure and benefit the individual both psychologically and physiologically (Edwards, 2003; Myers, 2003).

(1.1.1) General Health & Social benefits of Physical Activity

Significant health benefits can be achieved from regular PA, the right amount of PA which is at least 30 minutes of moderate activity a day, 5 times a week, or 20 minutes of vigorous activity at least 3 days a week according to Gorin & Arnold (2006), take a positive effect on mental and general health. Haskell and colleagues (2007) also mention that a combination of moderate and vigorous PA in greater than 10 minute bouts produce health benefits. These bouts can lead to numerous overall health benefits, for example in fitness (Bouchard, Bear & Haskell, 2007), PA also participates in a reduction in blood pressure and bad cholesterol (Myers, 2003) as well as playing a role in preventing chronic diseases such as obesity, hypertension, cancer and diabetes (Warburton, Nicol & Bredin, 2006). Furthermore females who reported being physically active at any time in their life had a lower levels of cognitive impairment compared to ones who were inactive (Middleton, Barnes, Lui & Yaffe, 2010) If any of these problems (high blood pressure, obesity, depression or hypertension) were to develop for a duration in an individual the consequences are destructive physically and can deteriorate a person’s psychological well being too.

Research confirms that PA is beneficial in reducing levels of crime and anti social behaviour, it increases healthy behaviours and gives an individual a chance to socialise and meet new people (Cavill et al, 2006). The abundance of research on physical activity conducted over the past twenty years, mainly due to the seismic effect of the U.S. published ‘A report of the Surgeon General’ in 1996, indicate that PA reduces the risk of heart disease (WHO, 2002, Cavill et al., 2006), it has a positive influence on various medical disorders (WHO, 2004) and PA enhances psychological well being and also contributes to positive mental health throughout life (von Bonsdorff et al., 2009).
(1.2) **Psychological Well-Being**

Psychological well being (PWB) is a multidimensional concept that refers to having a positive view of one’s self and one’s life and includes aspects of self-esteem and satisfaction with life (Lent, 2004), in addition to one having relatively low negative emotion, and high positive emotion. PWB consists of a more eudaimonistic perspective with a touch of a hedonistic perspective involved. Correlates of PWB are age, relationship status, employment status income and physical health to name but a few. It is a key component in the life of a human being, it brings (if positive) happiness, positive self esteem, positive mental health, optimal cognitive performance and motivates the individual to achieve goals throughout life. On the contrary if an individual’s PWB is negative, especially for a prolonged period of time, they can develop a range mental illnesses or disorders such as anxiety or depression, which can further develop into physiological problems and cause upset for the individual both internally and externally (Hiroeh, Appleby, Mortensen, Dunn, 2001; Liu, Shono & Kitamura, 2009).

PWB conceptualisations have been diverse as it is very much a subjective variable, and it is a concept containing both emotional and cognitive elements. PWB is thought to include 6 key dimensions; they are self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Salami, 2011). Others may be mood, well being, quality of life, general health, a purpose in life, competence and vitality (Diener 1984; Ryan & Deci, 2001), therefore it is difficult to produce a specific definition because these dimensions vary from time to time and are difficult to measure. However, the various aspects of psychological well-being tend to co-occur and their measures are highly correlated with each other, forming a strong higher order factor for that subject (Abbott et al, 2006).
Diener (1997) suggested that the experience of subjective well-being includes both the presence of positive affect and the absence of negative affect combined with the cognitive element of satisfaction with life. This relates to a person’s PWB, in that when their PWB is in a positive psychological functioning state it leads to subjective well being. Wright & Cropanzano (2004) associated high well being levels in individuals to be superior decision makers, they demonstrate better interpersonal behaviours and receive higher overall performance ratings. Physically active individuals can be placed in this bracket as they are usually high in well being and these factors may also be a reason as to the motivation behind being physically active, these associations also seem to be of major importance when motivating others in achieving top performance.

(1.2.1) Research on Psychological Well Being

Although a broad term and falling under a broad category of psychology, research on PWB is widespread and it has been extensively researched over the past 20 years (Conway & Macleod, 2002). What was discovered during the two decades was that negative PWB has a significant effect on mental illnesses, for example negative PWB correlates with depression (Woods & Joseph, 2009), it has a negative effect on anxiety (Ruini & Fava, 2009) and furthermore on stress (Malek, Mearns & Flin, 1994). Other findings were that PWB is made up of multiple dimensions and runs along a continuum from functioning at ones fullest capacity to total psychological distress.

Current literature confirms that different aspects of positive psychological well being affect an individual’s health in an underlying way. For example optimism is associated with reduced cardiovascular mortality and reduces incident risk of coronary heart disease (CHD) (Giltay, Kamphuis, Kalmijn, Zitman, & Kromhout, 2006; Tindle et al., (2009), as cited in Boehm, Peterson, Kivimaki & Kubzansky, ( 2011)), others for example, Baruth et al., (2006) found that optimism has a positive significant relationship with increased physical
activity. Other studies state that higher levels of PWB were linked consistently to reduced risk of CHD (Boehm, Peterson, Kivimaki & Kubzansky, 2011). Positive PWB has also been shown to influence the cardiovascular response to stress. Fredrickson, Mancuso, Branigan, and Tugade (2000) exposed volunteers to a stressful task which was followed by a mood induction procedure. Participants in a positive mood state showed a more rapid cardiovascular recovery from stress than those in a negative or neutral mood state.

1.3) **Defining Self Perception**

According to Azizi & Jaafar (2005), everybody has a picture or perception of themselves. Self perception (SP) is defined as a process of identity formation through sensory perception, and it allows us to understand our own actions, behaviour, emotions and feelings. SP is a multifactorial concept involving cognitive, perceptual, affective, evaluative and behavioural components (Smolak, 2004). Bean Lipka & Shavelson (2003) state that self perception consists of different aspects of the self, they propose that self esteem and self concept make up self perception (both are hierarchal concepts in the self).

People with a positive self perception feel happy about the way they look and are comfortable in their own skin, they’re motivated and persistent (Bandura 1982; Martin & Debus 1998), they are able to accept criticism in a positive way, be objective and have a confident outlook on life (Strage & Brandt, 1999). whereas people with a negative self perception are anxious about the way they look, they feel uncomfortable in certain situations, it is related to depression and can even cause a person to be suicidal (Ochse, 2003; Lifespan, 2006).

The problem with self perception today is not so much positive SP but negative SP. Negative SP is becoming an increasing problem, it affects an individual’s cognitions, a lack of confidence arises and negative SP effects people’s perceptions about themselves. Negative
SP develops because of an individual’s own self concept, for example media images, television and magazines are found to affect women’s self perceptions negatively (Dorian, 2002; Lin, 2002). Muscular physique and media images may also influence males self perception negatively. Other negative self perceptions can be an individual’s poor self judgement, pessimism and a lack of will to enjoy life.

It’s not just media and T.V that influence an individual’s perception of themselves, personality types affect it too. Perfectionists, high achievers, and those with "type A" personalities seem to be prone to having negative self-images (Furnham, Borovoy & Henley, 1986). Self perception can also affect mortality as Levy, Slade, Kunkel & Kasl, (2002) found. Their research stated older individuals that had a more positive self-perception of aging, measured up to 23 years earlier, lived 7.5 years longer than those with less positive self-perceptions of aging.

SP is a vast construct, it effects many concepts in a subject, about how other people perceive them and how they perceive themselves, which involves many cognitive processes and SP is very much a subjective variable. The many different dimensions of SP indicate that it is difficult to measure; however it seems to be a subset of psychological well being (Fox, 2000), so hopefully through this research project a correlation will be made between the two. The Body Esteem Scale (BES) (Franzoi & Shields, 1984) was used to measure self perception in this study as body image is ones internal perception of, attitude towards, and preoccupation with one’s body size and shape (Greenleaf, Boyer & Petrie, 2009), and because self perception can be referred to by many concepts, this current study refers it to an individual’s self perceived body image and how they feel about their body both internally and externally. The body is experienced as an expression of the self states Fallon (1990) as cited in Cash & Pruzinsky (1990) and of one’s self perception.
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(1.4) Theoretical Linkage Correlating Physical Activity with Psychological Well Being & Self Perception.

Some of the most common benefits yielded from physical activity are, it helps control weight, it helps maintain bones and muscles in an individual but most importantly it promotes psychological well being. In accordance with research on this topic it is becoming increasingly apparent that regular physical activity has a great influence on psychological well being, for instance it influences the treatment of psychological issues positively (Bunker, 1998, as cited in Greenleaf, Boyer & Petrie; Scully, Kremer, Meade, Graham, & Dudgeon, 1998). Results from a meta-analysis conducted by Lawlor and Hopker (2001) investigated the effects of physical activity as a treatment for depression and concluded that physical activity led to a greater reduction in depressive symptoms compared to no treatment at all. It also has an even greater effect on those with a predisposed mental problem.

(1.4.1) The Relationship of Physical Activity with Psychological Well Being

PA correlates with good mental health and being less prone to symptoms of anxiety and depression (Stephens, 1988; Netz et al, 2005). Biddle and Mutrie (2001) stated that healthy forms of exercise can play a key role in the promotion of mental health and well being. PA even effects cognition, cognitive impairments are 50% less likely to occur in physically active people, reported Stewart, Richards, Brayne & Mann, 2001. If regular physical activity (see chapter 1.1) is participated in, then an individual’s psychological well being improves (Goodwin, 2003; Abu-Omar et al., 2004; Bartholomew, Morrison & Ciccolo, 2005; Armstrong, S. & Oomen-Early, 2009). Other benefits that PWB receives as a result of PA are improved mood states (Rejeski, Brawley & Shumaker, 1996).

So if regular PA is increased greatly the promotion of an individual’s health and psychological well being improves even more than normal, this isn’t the case. There is
growing evidence aimed at the danger of overtraining or exceeding your limits during any physical activity. This can lead to long term damage such as muscle joint and pain, persistent fatigue, disturbances in PWB and mood, increased incidence of injuries and excessive weight loss (Derman et al., 1997). A study on the impact of PA on health related quality of life (HRQL) or perceived health status found that individuals that participate in the recommended PA amount had better overall perception of health and HRQL (Zahran et al., 2007; Sundblad et al., 2008), thus imposing that a moderate rather than intense physical activity might be more rewarding.

Another reason as to why PA leads to a better psychological well being lies in the neurological basis. An endorphin rush achieved from being physically active, with this a person receives a psychological ‘high’ from the release of endorphins due to exercise or PA. The catecholamine hypothesis may be an other neurological explanation; this suggests that exercise and PA release catecholamine’s (dopamine, nor adrenaline, adrenaline) which in turn are associated with positive mood states and euphoria. And a third reason lies in the mastery hypothesis, this hypothesis states that any exercise which require specific skills is likely to have a positive effect on self efficiency, this creates heightened self esteem and creates a positive affect state (Casper, 1993 as cited in Coleman, Hendry & Kloep).

(1.4.2) The Association among Physical Activity and Self Perception

Research examining the effects of sport and physical activity has linked them to enhanced body image (Hausenblas & Mack, 1999; Hausenblas & Fallon 2002; Slater & Tiggemann, 2006, as cited in Greenleaf, Boyer & Petrie). Social events consisting of physical activity or exercise can lead to increased positive self concept in adults (Van de Vliegt, Van Coppenolle & Knapen 1999), also individuals within a physical activity group have higher body image satisfaction than sedentary individuals (Bahram & Shafizadeh, 2006). There is clear evidence that exercise and PA can change people’s perception of their
physical self in a positive manner (Fisher, Berkey & Colditz, 2007), even in doing any exercise on a regular basis can make people feel better about their self perception (MPHDS, 2007). Disturbances in body image may lead to eating disorders or mental illnesses such as depression as well as low self esteem (Brausch & Muehlenkamp, 2007; Van den Berg, 2007). PA effects adolescence self image positively states Kirkcaldy, Shephard & Siefen (2002), and according to Serdula, Williamson, Anda, Heaton & Byers (1994) exercise has been used by about 90% of individuals as a way of trying to adjust or control body size and shape. Individuals who are physically active maintain better levels of self perception than those who are sedentary (Fox, 2000). This also works in the other direction suggests Harters competence motivation theory (1985); he stated that one’s physical self perception may be a motive for initiating and maintaining PA interventions or programmes.

However self perception is hard to measure as it is culturally biased, for instance in Europe the thin ideal is the so called ‘perfect’ figure for females whereas the muscular physique is for males, and body image is very much overemphasised upon and valued too much. In contrast in Africa weight equals wealth, so the man with a bit of weight is seen as rich, happy and content with life, this is the ideal perception for one’s body image in the African population because of the these positive aspects being what the Western culture would call overweight. Even African women stated they’re partners didn’t have to lose weight to be attractive (Walcott-McQuigg, Sullivan, Dan & Logan, 1995), thus indicating that it is accepted. SP is also influenced by many constructs of the self and the development of self perception is not yet fully understood (Smolak, 2004). This makes it difficult to create a universal instrument to measure self perception. However the body esteem scale (BES) (Franzoi & Shields, 1984) is used in this study and has subscales for both males and females with relevant validity in a worldwide sample, so by the end of this research project the results should be consistent due to the measurement used.
(1.4.3) Physical Activity as an applied intervention for negative Psychological Well Being

Interventions to increase PWB are rapidly being developed, both for the prevention and treatment of depression and other mental disorders. (Fava, 1999; Seligma, Steen & Peterson, 2005). These interventions include physical activity interventions, for example psychomotor therapy or even any sort of physical activity performed consistently for the recommended time by a therapist. Some meta-analytic findings show a large effect size from studies that have used exercise as an intervention for the treatment of depression (Biddle & Mutrie, 2008). PA in the form of aerobic exercise, even in short bouts, also reduces anxiety states (Petruzzello et al., 1991). Wang et al. (2010) correlated tai chi (a form of low impact mind-body exercise) with improvements in psychological well-being including reduced stress, depression, anxiety and mood disturbances. Leith in 1994 researched twenty experimental studies on the effects of exercise on PWB, finding in fourteen of them (70%) that exercise is effective in reducing anxiety; these findings are consistent with Ekkekakis article on perspectives from exercise (2003).

The proof that exercise is as effective as more conventional mental therapies is encouraging, especially if consideration is given to the time and costs involved with treatments such as psychotherapy. However the adherence to the intervention is crucial, it usually has to last for several weeks or months to take effect, so if the patient does not abide by the strategy or plan the therapist has set then the intervention will not take its full effect.

As a consequence of these results, PA has been increasingly used to treat psychological distress or negative PWB today (Hones & O’Beney, 2009), and the effects are significantly better than treating them with drugs. PA is also cost effective compared to other psychological well being treatments, and Biddle, Fox & Boutcher (2002) state several reasons why physical activity should be used as an intervention for negative PWB. Their book examines the many effects PA has on PWB, for example participants in clinical settings can
benefit from good short term bouts of exercise, physical activity is constantly associated with mood and affect, and experimental research supports that moderate exercise on PWB.

Mental health patients often report that they do not want drugs (Scott, 1996), yet drugs or psychotropic medication are one the most common forms of treatment for depression, anxiety and other mental illnesses. A quite astounding finding during this literature review is that approximately 400-500 suicides per year in England and Wales are related to antidepressant drug poisoning (Office for National Statistics, 2002), and that antidepressant drug poisoning increased 16% with every one million prescriptions handed out (Morgan, Griffiths, Baker & Majeed, 2005). Moreover, given that many common non-drug treatments such as cognitive-behavioural therapies can be expensive and often in short supply, there is not much choice for other strategies, however physical activity may be the alternative treatment needed. Maybe a combination of the two (cognitive behaviour therapy and PA) might have a more beneficial effect on people with psychological difficulties; however more research needs to be conducted to prove this statement exact.

(1.5) *Demographic Variables Correlated with Physical Activity, Psychological Well Being & Self Perception*

Age, gender, employment and socio economic status all have an underlying effect and contribute to how physical activity promotes psychological well being, how effective it will be and how accessible it is for individuals. For instance as a subject ages physical activity decreases (Hawkins et al., 2009). The HBSC Ireland short report on physical activity (2008) reported the frequency of moderate to vigorous PA being higher in young students than in elderly age groups. This is seen throughout research, which as a person ages their PA decreases (USDHHS, 1996; Caspersen, Pereira, & Curran, 2000).
Further research has stated that gender is an effective variable as it’s proven that regular physical activity is participated more in males than females (Bauman, Sallis, Dzewaltowski & Owen 2002; Hawkins et al, 2009) thus effecting their psychological well being. Similar findings have been consistently linked ender with self perception, much of the literature on self perception and gender differences has lead to males having a higher overall self perception of themselves than females do (Chung, 2003).

Employment, depending on the level of work, has an effect on a person’s physical activity, if the level of work is vigorous and that persons heart beat increases notably then physical activity maybe being performed. For males, full-time employment, even in inactive occupations, is positively associated with PA in comparison to not working at all, and in both genders job type has a major bearing on daily activity levels (Van Domelen et al, 2011). Contrary views from Virkkunen, Kauppinen, & Tenkanen, (2005) find that work PA has a negative effect on health.

Other studies have discovered socio economic status (SES) has an effect on PA too, for instance people who came from a low SES background compete in less physical activity compared to people from middle class and upper class backgrounds, this is due to people with a lower class socio economic background and high-minority areas had reduced facilities and recreational areas to be physically active in thus leading to decreased PA (Gordon-Larsen, Nelson, Page & Popkin 2006). Bauman, Sallis, Dzewaltowski & Owen (2002) reviewed approximately 300 studies on the correlates of PA, SES and income all positively associated with PA in their study.

According to research, relationship status or marital status correlates with PWB as people who are married or in a relationship for an amount of time generally have better PWB (Brown, Young & Byles, 2006). However findings are mixed with a number of studies
reporting no relationship (Brownson et al., 2000). King, Kiernan, Ahn & Wilcox (1998) found that getting married leads to increased physical activity. Due to these findings relationship/marital status may be a predictor for PA so it is included as another criterion for this study. Some studies have even found being involved in a relationship leads to better PWB too. As previous research has indicated that these demographics mentioned in this chapter all correlate significantly with PA, it’s important to include them all as part of this study.

(1.6) **The Objective of This study**

Even though the health benefits of regular PA are documented, much research on this topic has been conducted abroad, for example in the United States and the United Kingdom, so research conducted in Ireland will better assist psychological difficulties and problems that arise here, as well as providing better understanding of what benefits an individual can achieve through being physically activity. This study agrees with research mentioned in chapter 1.4 that improved psychological well being and self perception correlate with recommended levels or above of physical activity.

The aim of this quantative correlational research is to stimulate the previous research and to evaluate a positive significant link between physical activity and psychological well being, as well as the effects physical activity has on self perception. The objective is to provide a significant association between physical activity with both psychological well being and self perception here in Ireland, and to promote further research to be conducted on this topic in this country.
(1.7) **Hypothesis**

Hypothesis 1: It is hypothesised that psychological well being will significantly correlate with physical activity.

Hypothesis 2: It is suggested that self perception will be significantly associated with physical activity.

Hypothesis 3: The third aim is, it’s hypothesised that physical activity levels will be lower in females than males.

Hypothesis 4: The final hypothesis is that females will have a lower level of self perception compared to men.

Note, the null hypothesis is understood to be that physical activity will not be associated or correlate with psychological well being and/or self perception.
(2) Method

(2.1) Participants

A total of sixty five (n = 65) participants took part in this study. The target population was half a general population sample and half physically active individuals, which were sourced through GAA, hockey, basketball, dancing and soccer clubs. Of the participants there were twenty four (n = 24) female and forty one (n = 41) male. The sample was a mix of physically active (n=35) and non physically active (n=30) subjects. Their participation was voluntary and there was no incentives offered. The mean age of the sample was (m=23.66), see table in appendix (Figure **) for a detailed listing of participants. The criteria for including the physically active participants was that they participated in the recommended amount of moderate or vigorous physical activity (see chapter 1.1) and the criteria for the general population was that they didn’t match the recommended physical activity level. Other criterion for choosing the sample was that the respondent was over 18 years of age and under 40 (to control for confounding variables) and able to comprehend the questionnaire. The rate of return of the questionnaires was approximately 80% (65 of 81).

(2.2) Materials & Instruments

A questionnaire, compromising of 3 frequently used and reliable questionnaires, was designed by the conductor of this study. The first questionnaire was the psychological general well being index (PGWBI); developed in 1971 by Harold Dupuy and revised by Dupuy and John Ware in 1984 (Dupuy, 1984 as cited in Wenger, Mattson, Furberg, & Elinson, 1984) and is a self report measure. It is one of the most widely used questionnaires for evaluating a person’s psychological well being and has been translated into many languages worldwide. It consists of 6 axis covering depression, anxiety, self control, positive well being and general health and vitality. It is a 22 item, 6 point likert scale used to generate an overall index of
psychological and general well being. Scoring for the PGWBI ranges from 22 (poor quality of life) to 132 (good quality of life), with the scores for each item being 1 (lowest score) and 6 (highest score) (Chassany, Deminas, Dubois, & Wu, 2004).

The PGWBI has been validated and used around the world for many studies (Barlesi et al, 2006; Matze, Boye & Yurigan, 2007), so it was a well chosen questionnaire for the assessment of psychological well being in this research project. A Cronbach’s alpha run on the PGWBI showed a reliable internal consistency of 0.77-0.92 (Matze, Boye, & Yurigan, 2007) and a Cronbachs alpha range of 0.93-0.92 (Ay, 2010). Ay in 2010 assessed the validity and reliability of the Turkish PGWBI and concluded the PGWBI correlates significantly with all subareas of the Nottingham Health Profile (NHP) (p<.05), with a range of 0.38-0.70 with the NHP. This indicates that the PGWBI is a reliable and valid instrument for the present study.

The second of the three questionnaires was Baecke’s habitual physical activity questionnaire (BHPAQ) developed by Baecke, Burema & Frijters (1982), it is a self report questionnaire and was used to examine the participant’s physical activity. It is a validated and reliable questionnaire, and has been used in many studies to asses an individual’s physical activity successfully (Pols et al, 1995; Martin et al, 2008; Ho, Yu & Chan, 2011), and is still valid and used today.

Baecke, Burema & Frijters questionnaire is a 22 question measurement with a likert scale of 5 for 17 items and a scale of 3 for 3 items, with the other 2 items being yes or no answers. The BHPAQ is also a tripartite questionnaire breaking a person’s habitual physical activity into three dimensions. The first section is physical activity at work, this section proceeds into 3 levels of physical activity at work and determines the type of work the participant conducts. The second dimension is sport during leisure time which examines the
intensity, frequency and duration of sport (if played) during leisure time. The third part is locomotive and leisure activities; this section relates specifically to watching t.v., walking, cycling and other types of physical activity other than sport. The BHPAQ scoring system was 1 to 5 for the five point likert scale, and 1,3 and 5 for the 3 point likert items (1 = low intensity, 3 = medium intensity and 5 = high intensity, for each scale). Baecke, Burema and Frijters questionnaire has been used in many countries and throughout different socio economic classes so is suited for examining physical activity in this project. Some examples of the items in the questionnaire are ‘what sport do you play most frequently’ and ‘at work I sit’, with the score being circled after each question The test-retest reliability for the BHPAQ was 0.80 for occupational PA, 0.90 for sport and 0.74 for leisure time physical activity other than sport (Baecke, Burema & Frijters, 1982), thus indicating that the BHPAQ is a reliable and considerably measures the aspects of PA at a significant level.

The final part of the questionnaire was the body esteem scale (BES) developed by Franzoi & Shields (1984) used to evaluate a participants self perception. The BES refers to a person’s self evaluation or self perception of themselves. It is a 35 item measure with items being answered on a 5 point likert scale beginning with 1 being a strong negative perception or feeling to 5 being the most positive perception (relating to body parts or processes) and is a self report measure. This tool examines 3 subscales; physical attractiveness (for males)/sexual attractiveness (for females), upper body strength (for males)/weight concern (for females), and physical condition (for both males & females). In this study it is used to measure the participants self perception. The items are related to both males and females, so this is a positive for this study. The BES is reliable and valid, and is consistent throughout studies (Franzoi, 1994; Wade, 2003; Pastore et al., 2011). The BES has also shown a Cronbach’s alpha ranging from 0.78-0.87 for internal consistency (Franzoi & Shields, 1984). The BES scoring ranged from 1 (have strong negative feelings), 2 (having moderate negative feelings),
3 (have no feelings one way or the other), 4 (have moderate positive feelings) and 5 (having strong positive feelings) (Franzoi & Shields, 1984), with a total high score of 165 (being highest positive perception of body image) and the lowest score, 35, implying a strong negative perception of oneself. Examples of some items included in the scale are body scent, nose and health, with a space after the item for entering the score of how you feel about this part of yourself. This scale was chosen because of its internal consistency and reliability, and as a result of its previous findings when examining self perception (Wade, 2000).

Furthermore the BES is a good predictor of self perception as it is questioning an individual’s own opinion, or perception, of their body, thus leading to a self perceived overall outlook of themselves. Body esteem is also an affective outcome of one’s self perception of one’s body.

A Demographic details and informed consent form page preceded the initial questionnaire. They consisted of age, employment (employed/unemployed) coded 1 and 2, gender, income which was coded from 1 to 4 (1, €0-€10,000. 2; €10,000-€25,000. 3; €25,000-€40,000. 4; €40,000 plus) and relationship status, where the participants circled the correct information relating to their status, also coded 1 (involved) and 2 (single). An informed consent form was designed for the questionnaire containing the purpose of this study and to notify the participants of what they were participating in. A copy of the whole questionnaire can be found in the appendix. The questionnaires were found to be brief, easy to use, comparable and reader friendly for the participants of this study.

(2.3) Design

This study can be conceived of as a cross sectional, quantative, and correlational design used to examine if there is a significant relationship between the PA, PWB and SP. With the independent variable (IV) being physical activity and the dependent variable(s) (DV) being psychological well being and self perception. The correlational design will
interpret an observation of the effects PA has on both PWB and SP and return a result concerning the research hypotheses (see chapter 1.7) in the form of a correlational coefficient. Demographic variables included gender, age, employment status, relationship status and income, which are reliant on the DV.

(2.4) Procedure

Each participant was recruited from the researcher’s contacts in Ireland covering a wide range of settings. The researcher visited GAA, basketball, hockey and dancing clubs and contacted all participants face to face, and discussed the information and about the project taking questions and feedback. The researcher then sought their permission and outlined the instructions for the questionnaire for all involved. No mention of the hypothesis or any other information about the research project was mentioned as this could lead to biases in the results. This process allowed the researcher to introduce himself as a researcher and as a person to all participating in the research project.

All participants received a self report questionnaire, all pen and paper, which they were asked to fill it out in their free time, and also that the researcher would be back the following week to collect them all by hand. Respondents were given, as part of the questionnaire, an informed consent form discussing the project in detail and to designate that they can withdraw at any time. They were assured that there was no right or wrong answer and complete anonymity was guaranteed. The questionnaires were distributed between the 23rd of January 2012 and the 29th of February 2012, and out of the 81 handed out 63 were collected. Furthermore the general population questionnaires were distributed and collected during the weeks mentioned above. The demographic variables were included on the cover page and requested the respondent to circle their gender, state their age, circle employed or
unemployed, involved or single and income levels which consisted of; under 10,000, 10-25,000, 25,000-40,000 and 40,000 plus (see appendix for the questionnaire and consent form).

After all the questionnaires were collected the researcher then entered the data, which was stored on the file server used in the study, and subsequently downloaded and input it into the SPSS statistical software package for analysis. The researcher then ran statistical tests on each of the variables to obtain descriptive statistics and test the hypothesis. These statistical tests produce a results section after analysis so that the researcher can interpret these results and further discuss the findings of this research project.

(2.5) Data Analysis

The data analysis, which was conducted through SPSS, analysed the data in this study to test the hypothesis, obtain correlations and further to discuss the results found. Firstly a descriptive test was run on the data to achieve the measures of central tendency, measures of variability, frequencies and information about the spread of the distribution. All statistical tests in this research project are correlational as a result of its design. A Pearson’s r coefficient was used to examine the linear relationship between the IV PA and the DV PWB and SP. Then, a series of t-tests were employed to understand the levels of physical activity and self perception in males and females, and to secure a further understanding of the statistical analysis.
(3) Results

(3.1) Descriptive Statistics

Preliminary analysis were run on the data to ensure that no violation of the data. Data was normally distributed as shown by the Shapiro-Wilk statistical analysis (p=.383) and no violation of significance was found, the distribution was also 2-tailed and can be seen in the box plot in appendix (figure 1). Descriptive statistics run on the data set reported the age range being between 17 and 44 with the mean age being (m=23.66) with the standard deviation (SD = 5.4), the mean for the income of participants was €10,000-€25,000 (m=1.6), and the standard deviation (SD = .75). There were a total of 65 participants in this study with the number of males being 41 (63%) and a total of 24 females (37%). The participants relationship status demographic resulted in there being 38 (58.5%) participants being involved and 27 (31.5%) single. The total cases of the final demographic variables was employed and unemployed, the number of cases employed were (n = 47) and unemployed participants being (n = 18).

(3.2) Inferential Statistics/The Main findings

A Pearson’s r correlation was used to explore relationship between psychological well being (DV) and physical activity (IV) after the Descriptives were analysed. The correlational result for this first statistical analysis test indicated that there was a weak but positive relationship between the two variables (r =.11, n=65, p >.05, 2-tailed).

The second analysis in the design was testing the IV’s correlation with self perception; this analysis was tested using a bivariate correlation. A Pearson’s r correlational coefficient was computed and reported that PA had a strong significant association with SP
recording statistical significance of \( p = .018 \), and PA significantly correlated with SP \((r = .018, n=65, p<.05, 2\text{-tailed})\).

The third SPSS analysis in the design was explored. Physical activity levels in males and females were analysed using an independent samples \( t \)-test to explore the relationship between the two groups. Data from the BHPAQ (Baecke, Burema & Frijters, 1982) was computed with results yielding no significant difference between males and females in relation to physical activity levels \((t (33) = .233, p>.05, 1\text{-tailed})\). Physical activity results were slightly higher in males \((m = 67.63, \text{SD} = 6.67)\) compared to females \((m = 64.21, \text{SD} = 9.13)\).

Self perception scores from the BES were accumulated in SPSS, and the male and female groups for body esteem were compared. The body esteem scale (BES) data was analysed using an independent samples \( t \)-test. Males and females being the grouping variables, however with only a small difference between the groups there was no correlation found \((t (63) = .334, p>.05, 1\text{-tailed})\), the means of the male group was \((m = 122)\) and just higher than that of the female group \((m = 118)\).

(3.3) Other Findings

Other results to take note of were, first off employment does not correlate with physical activity levels. With the number of cases employed \((n = 47)\) verses unemployed \((n = 18)\). An independent samples \( t \) test conducted on PA and employment resulted in no significant difference between the two \((t (31) = 1.12, p>.05, 2\text{-tailed})\).

Relationship status, involved \((n = 38)\) and single \((n = 27)\), and BES had non significant relationship according to the independent samples \( t \) test run on the data \((t (63) = \)
.005, p>.05, 2-tailed), with the mean for involved (m = 120.76) and the mean for single (m = 120.74).

PWB and relationship had a positive significant correlation with PWB. An independent samples $t$ test conducted to investigate the correlation. The $t$ test resulted in a non significant correlation of PWB with relationship status. With the independent finding ($t$ (63) = -1.47, p>.05, 2-tailed).

Missing variables include non active individuals in the BHPAQ ($n = 32$), this was due to non applicable criteria.
(4) Discussion

The purpose of the current study was to provide a quantitative review for the relationship among measures of physical activity (PA) for both psychological well being (PWB) and self perception (SP). Another purpose was to understand the association physical activity has with both males and females, and the final concept of the study was to comprehend the levels of self perception between males and females and understand if there was an association of physical activity to a specific gender. Moreover this research projects aim was to extend the research on this current topic to understand the association in an Irish context. To our knowledge, this is one of the first studies relating to the relationship of these three variables in one study in Ireland. The abundance of research available led to the foundations for the hypothesis mentioned in chapter 1.7, which have been analysed and the results shown in the chapter previous. This chapter will discuss the findings of the study, with the limitations to the study carried out toward the end of the discussion.

The research analysis found the relationship between PA and PWB to be a weak but positive non significant correlation (p >.05), thus indicating that physical activity has a small positive association with PWB according to this research project. Much of the recent research has consistently found that PA has a positive correlation with PWB (Hassmen, Koivula & Uutela, 2002; Biddle & Asare, 2011), and this research project has backed up and is consistent, to a certain extent, with previous literature on the topic. Nevertheless some research conducted on PA and PWB has led to contrasted conclusions relating to PWB. For instance Perri and Templer (1985) indicated little or no effect of exercise on mood. Others like Calfas and Taylor in 1994 reported 9 of their 11 studies reporting a negative association of PA with depression. Even though the association in this study was weak it was still a positive one. This result is similar to other findings related to PWB, for
instance Petruzello et al., (1991) found a small effect size with PA and anxiety, a symptom of negative PWB. Netz, Wu, Becker & Tenenbaum (1999) found a small effect ($d = 0.19$) of exercise on well being, a relation of PWB, in a non clinical population.

It seems when reading much of the previous literature on the topic, as the years progress the correlation of PA have become more and more significant with PWB. This may be down to the improvements in technology related to physical activity and health, or could be due to individuals witnessing the increasing damaging effects of negative PWB, on not only psychological health but on general health too, leading to increases in PA among the population. Theories on the interpretation of the positive association could be in the increase in mental health organisations and facilities that support physical activity, leading to further findings in recent studies and research significantly correlating PA with PWB, thus these facilities and organisations enhancing our knowledge on physical activity-psychological relationship. In addition to these findings the studies finding that PA reduces psychological distress, which can cause great harm to an individual if recurrent, are of positive regard as some have been longitudinal and experimental, and follow ups have been implemented leading to positive results (Ray et al., 2001). So maybe a follow up study to this study can be conducted in a greater sample size to find a further relationship, and maybe even a causal mechanism, between PA and PWB. The finding from this study provides further motivation for the recommendation that health professionals and mental health workers in particular should consider referrals of persons with mental health and/or stress related problems to interventions consisting of PA or exercise (which most do not as they feel like PA as an intervention hasn’t proved itself to be as effective as the common drug treatments), as well as recommending regular, moderate exercise, suitable for and enjoyed by the individual or patient concerned.
Albeit most previous research concluded with a strong positive significant correlation with PA on PWB (Netz et al, 2005; Armstrong & Oomen-Early, 2009), therefore the limitations of this study will be mentioned in chapter 4.1 to discuss the boundaries of this research and to acknowledge the need for further research to be conducted on this topic. The positive association between PA and PWB suggests that as PA scores rise so do PWB scores, even though the two variables are not significantly correlated. This study therefore cannot hypothesis 1, that PA will significantly correlate with PWB, and approves of the null hypothesis.

The second aim of this research project was to examine if PA has a relationship of significance with SP. So, further analysis on the data concluded that PA has a strong positive significant association with SP, thus proving hypothesis 2 correct. Current research has lead to results similar to this (Fox, 2001; Hausenblas & Fallon 2002; Fisher, Berkey & Colditz, 2007). This research finding has been consistent with much of the previous research from the last decade also. The increase in the ideal perception of the way one’s body should be, and the effectiveness of the mass media on the population has lead to the increasing phenomena of self perception and the prevalence of research relating to it, mainly in the damage negative SP can have. Negative self perception can however lead to self harm (Klonsky, 2006), or diminished PWB as a result of negative SP, so finding a positive relationship between physical activity and self perceptions is a significant as SP is a ‘necessary prerequisite’ for PWB (Hartman & Blankstein, 1986). This studies finding suggests that as self perception is positively related to physically active individuals, theses PA person’s have maybe benefitted from the effect PA has on relieving negative affects of SP and enhancing better quality of life and satisfaction.

There are a number of explanations for this finding. As a result of the high levels of SP in physically active individuals they may not feel that they’re incapable of participating in
PA, unlike people with negative SP who refuse to participate in PA, maybe due to their lack of self confidence and self acceptance positive SP brings. Or it may be that physical activity is participated in as that person has a positive self perception which arouses confidence in them to go and participate in physical activities. Another reason for the elevated scores of SP could be down to a theory from Whaley & Schrider (2005); they propose that how people perceive themselves, both previously and presently in life, will have an influence of their choice for PA.

Edwards, Ngcobo, Edwards & Palavar, 2005 found a significant difference in the physically active group versus the control group when relating PA to one’s self perceptions, and concluded that people who engage in regular PA perceived themselves as having more purpose in life, autonomy, self acceptance and environmental mastery than the control group. This self mastery, self acceptance and autonomy can lead that person to have an enhanced good feeling about themselves and about life in general, thus influencing psychological well being in a positive manner. Edwards and colleagues study may be a theory for further research to investigate. However in the present study their theory may be the reason why there is a strong positive correlation of PA and SP, the positive association PA brings resulting in enhanced moods created by self mastery, acceptance etc. Other mechanisms behind why PA relates to SP could be that individuals who engage in regular physical activity have family and friends that may enhance the self perception of the individuals by means of appraisal and congratulating them for their efforts.

Nevertheless may be helpful to assist in relieving symptoms of negative SP and this is the main theory behind the result for hypothesis 2. To conclude, the present finding largely supports previous findings on the relationship between PA and its significant relationship the self perception of an individual. Furthermore hypothesis 2 of this study was successfully proved.
Hypothesis 3 of the current research project indicated that males would have a higher participation in PA than females would. The result was one of non significance, leading to no relationship between the two variables. Previous research on the gender difference in males and females, when comparing PA levels, has led to some mixed results in studies, but still much of the previous literature has led to males being more physically active than females, for instance Livingstone et al., (2001) found that Irish men participated in significantly more PA than women, with males competing in more vigorous activities and were twice more active at work and at recreational activities. In addition, this research indicated that women participated in significantly less PA than men at all ages, this study echoes many other recent studies on the topic. This study correlates with only a fraction of previous research on the difference in PA levels between genders, for instance Hallal, Victoria, Wells & Lima (2000) found when all aspects of PA are considered, no gender difference in PA occurs. Recent research found that due to the differences in types of PA that males and females participate in some questionnaires may be biased toward a certain gender (Weik and Hale, 2009). These instruments in turn affect the research studies that have used instruments that are biased toward a certain gender, maybe because of certain items being more related to a specific gender, leading different item functioning across genders. The body esteem questionnaire is not gender biased as it refers to domains of masculinity and femininity, but a female’s perception of one item might not be the same as a male’s perception of the exact same item thus leading to inconsistent readings from the instrument. This discussion will be discussed further in chapter 4.1.

The final objective of this correlational research design was to understand if there is a higher level of self perception in males than females, according to the body esteem scale measure. The final analysis resulted in a non significant difference between the variables. There have been only a small handful of studies finding that both men and women score
similar on SP, for instance Wade (1990) conducted a study on self perceptions between males and females and found only a small difference in self esteem and attractiveness scores for males and females in the early adolescent period, with no significant difference between the two in late adolescence. The majority of studies on the relationship of SP to each gender have found a positive significant difference between males and females when self reporting the SP, consistently males have scored significantly higher than females when measuring SP (Chung, 2003), much of these studies have been of correlational research, thus implying no causal attribution when trying to understand the exact relationship between the two.

The reason for the non significant result found in this study maybe due to how people hold back when rating themselves on their own body maybe as a protective factor, so in order to preserve a positive self perception responses may be influenced by social desirability (they may not well tell about their true attitudes, but answer in a way that they feel socially acceptable), this is known as the social desirability theory. This overestimation is seen in some studies when testing for self perceptions and may be due to a motive to maintain self esteem, Sigmund Freud would have stated the overestimations were to protect the ego from conflict and avoid any negative feelings toward oneself which cause negative affect. Heine and Lehman (1997) found individuals form overly positive self perceptions when reporting physical attractiveness scores.

Even though there was no significant difference between the SP scores, both males and females scored regularly high on the BES measurement, females recorded a score of 118 whiles males scored an average of 122 out of a possible score of 135. Thus indicating that scores on the BES were relatively high overall in both genders, which is a positive from this study. To conclude this paragraph in relation to the current study, the hypothesis that self perception will be significantly higher in males than in females is a non significant one,
implying that males and females do not differ in their self perceived evaluation of themselves.

(4.1) *Limitations noted for the current Research Project*

Hopefully overall this study will contribute positively to previous research on the relationship of physical activity, psychological well being and self perception, but there are limitations to this study so this paragraph will acknowledge and further discuss them. The first limitation to note was, in the BHPAQ there were no house time or physical activity around the household subsections to analyse if activities like chores or cleaning the house (which effect physical activities too) effect levels of PA, previous studies have integrated this as part of their data, and this could influence both males and females PA scores somewhat.

Limitations in the current measurement of SP have led to some difficulties in this study, for instance this questionnaire was developed in 1984 and since then there has been a great shift in the concept of self perception and many new dimensions relating to self perception have been discovered since then, leading to new measurements for SP and relating to these newly uncovered dimensions of SP. It is however difficult to create a self perception instrument for effectively testing all aspects of self perception at any stage over the past 20 years, as it is such a vast construct and it is still not fully understood yet as to what exact concepts underpin and affects it, Sonstroem and Potts (1996) concluded that physical-self self perception report scales contain some degree of inaccuracy even in this age, during their study. Further implications when measuring self perception were the social desirability theory (mentioned in chapter 4.1) and overestimations of aspects of self perception in the BES.

Other explanations for the results obtained in this research project could have been, design issues, lack of control groups and there may be some outlying variables the researcher hasn’t taken note of in the present study. For example the number of males compared to
females was nearly double (24 females, 41 males), this could have lead to biases in the final two hypothesis of this study when interpreting the results, and having a greater number of participants can lead to these biases being cut out and the reduction of any outliers. Other demographic variables like sports facilities could also have an effect of levels of PA, as if there are very few PA facilities then PA will be affected negatively, so maybe for future research this demographic variable should be included.

With correlational studies there is no ‘causal attribution’, thus implying that the participant was given no yes or no judgements about whether or not a given counts as a cause factor. One can only imply to a certain degree if one variable affects another in correlational research. This limitation is seen throughout much of the previous research on PA, PWB and SP as many of the studies have been conducted in a correlational design. This issue leads to critiques from all areas of science and psychology, but due to the time constraints of this study such experimental research or longitudinal studies were out of reach.

(4.2) Recommendations for further research

When conducting further research some things to take note of should be firstly, the questionnaires should be revised, and added on to. For example house time physical activity should be included in the physical activity section of the questionnaire, along with an alternative option for ‘work time physical activity’, for example ‘student physical activity’ or something like that, for people who are unemployed but still are physically active during the day.

The self perception questionnaire in the present study should be revised and maybe a new measurement for self perception be added as a consequence of further correlates and concepts of self perception being found. A larger sample size is recommended to find a more positive correlation between the variables. Other supported concepts recommended for
further research are time requirements needed for educational purposes that effect PA participation, and maybe even using some pedometer or an instrument measuring PA other than self report scales to gain further insight into the intensity of physical activity needed to encourage psychological well being and self perception.

Lastly, to provide a better insight into the correlations, one should use multi analysis of covariance to comprehend the complexities of the relationship between physical activity with self perception and psychological well being. As well as further analysis on the data in a larger scale, as further inferential statistics may well implement better understanding of the relationship between variables. Furthermore if future research takes these recommendations into account and assess the limitations to this study, maybe in future research a clearer understanding of the relationship between PA and PWB, and PA and SP could be understood. So further research is necessary, especially in Ireland.

(4.4) Conclusion

The Centre for statistics office (CSO) stated in 2006 that more individuals now drive to school than walk, this suggests that PA is under threat from modern technology and transport, along with sedentary lifestyles mentioned in the introduction. The key findings from this study were that physical activity had a positive non significant relationship with psychological well being, physical activity had a strong significant association with self perception, physical activity levels were similar in both males and females, and self perception scores do not differ across gender. On the basis of the results found it was concluded, putting forward limitations and acknowledgements of the current study that further research is imperative in the area of physical activity relating to psychological well being and self perception.
The aim for psychologists in Ireland is to provide further research on this topic, preferably experimental in large scales, and look for a significant causal mechanism so practitioners can implement more PA programmes and interventions to stop sedentary lifestyles and increase the benefits that PA has on PWB and general health. Furthermore to have the alternative of preventing and successfully treat psychological illnesses with PA interventions (rather than pharmaceutical medications), and expose the positive rewards of PA to the population. The present study has contributed further to the ever growing positive link between physical activity, self perception and psychological well being, even though physical activity had only a weak correlation with psychological well being, but a strong significant one with self perception. So objectives to asses in the future, stemming from this study, could be how underlying mechanisms of physical activity stimulate enhancement of self perception and to a certain extent psychological well being. Moreover persons with negative self perceptions may be able to, with the aid of further research, use physical activity interventions to reduce negative self perceptions.

It has been stated that exercise by prescription schemes are rising in popularity (Smith, Gould, Thai & Liffe, 1996), and with more knowledge being gained on the associations between physical activity, psychological well being and self perception, hopefully in the coming years physical activity can be implemented by practitioners as a positive intervention to assist and benefit negative psychological well being and self perception effectively. As mental health Ireland state “There is no health without mental health”.
References


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(6) Appendix

Figure 1.

Normal Q Q plot indicating equal variances assumed
Figure 2

Scatterplot for PA and PWB

The non significant relationship between Physical activity and Psychological well being
Figure 3.

Scatterplot for Physical activity and Self perception

The significant relationship between Physical activity and self perception
Dear respondent, my name is Ethan McGuirk, I am in the final year of my BA Hons Degree in psychology and therefore have to conduct a research project as part of my final year. I am interested in the effects physical activity has on psychological well being and on self perception, and this survey has been designed to provide information for my final year psychology thesis. The main aim of this project is to try and enhance our understanding of, if and how physical activity affects a person’s mindset or psychological well being and whether it has positive or negative effects on people.

I would like to invite you to take part in a questionnaire. It will take approximately 10 minutes to complete. All the results are anonymous and in this study you are been tested only once. There are no “right” or “wrong” answers. Please do not discuss your answers with anyone else, please say what you really think and try to be as honest and accurate as possible. For demographic reasons can you please include your age, your gender (M or F), relationship status, your employment status and your income.

All information that you consent to supply is treated in the strictest confidence and will be held securely. Once the results for this study have been analysed for the purposes of this study they will be disposed of and destroyed. You may withdraw from participation at any time. Thank you for your cooperation.

Demographic Details

Are you Male/Female (please circle): Male Female

Age: _____

Employed (please circle): Yes No

Relationship status: Involved Single

Income (per year): Under 10,000 10,000-25,000 25,000-40,000 40,000 Plus
This section includes questions about how you feel and how things have been going with you. For each question circle the answer that best applies to you.

<table>
<thead>
<tr>
<th>1. How have you been feeling over the past month?</th>
<th>In excellent spirits</th>
<th>In very good spirits</th>
<th>In good spirits mostly</th>
<th>I have been up and down in spirits a lot</th>
<th>In low spirits mostly</th>
<th>In very low spirits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>Almost every day</td>
<td>About half the time</td>
<td>Now and then but less than half the time</td>
<td>Rarely</td>
<td>None of the time</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. How often were you bothered by any illness, bodily disorders, aches or pains during the past month?</th>
<th>Yes- to the point I felt like taking my life</th>
<th>Yes- to the point I did not care about anything</th>
<th>Yes-very depressed almost every day</th>
<th>Yes- quite depressed several times</th>
<th>Yes-a little depressed now and then</th>
<th>No-never felt depressed at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, definitely so</td>
<td>Yes, for the most part</td>
<td>Generally so</td>
<td>Not too well</td>
<td>No, and I am somewhat disturbed</td>
<td>No, and I am very disturbed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Have you felt depressed during the past month?</th>
<th>Extremely so-to the point where I could not work or take care of things</th>
<th>Very so much</th>
<th>Quite a bit</th>
<th>Some-enough to bother me</th>
<th>A little</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, definitely so</td>
<td>Yes, for the most part</td>
<td>Generally so</td>
<td>Not too well</td>
<td>No, and I am somewhat disturbed</td>
<td>No, and I am very disturbed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Have you been in firm control of your behaviour thoughts, emotions, or feelings during the past month?</th>
<th>Very full of energy-lost of pep</th>
<th>Fairly energetic most of the time</th>
<th>My energy level varied quite a bit</th>
<th>Generally low in energy or pep</th>
<th>Very low in energy or pep most of the time</th>
<th>No energy or pep at all-I felt drained, sapped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely so-to the point where I could not work or take care of things</td>
<td>Very so much</td>
<td>Quite a bit</td>
<td>Some-enough to bother me</td>
<td>A little</td>
<td>Not at all</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Have you been bothered by nervousness or your ‘nerves’ during the past month?</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>A good bit of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt downhearted &amp; blue during the past month.</td>
<td>None of the time</td>
<td>A little of the time</td>
<td>Some of the time</td>
<td>A good bit of the time</td>
<td>Most of the time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. How much energy, pep or vitality did you have or feel during the past month?</th>
<th>Very full of energy-lost of pep</th>
<th>Fairly energetic most of the time</th>
<th>My energy level varied quite a bit</th>
<th>Generally low in energy or pep</th>
<th>Very low in energy or pep most of the time</th>
<th>No energy or pep at all-I felt drained, sapped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very full of energy-lost of pep</td>
<td>Fairly energetic most of the time</td>
<td>My energy level varied quite a bit</td>
<td>Generally low in energy or pep</td>
<td>Very low in energy or pep most of the time</td>
<td>No energy or pep at all-I felt drained, sapped</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. I felt downhearted &amp; blue during the past month.</th>
<th>None of the time</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>A good bit of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-extremely tense, most or all of the time</td>
<td>Yes-very tense most of the time</td>
<td>Not generally tense, but I did feel fairly tense several times</td>
<td>I felt a little tense a few times</td>
<td>My general tension level was quite low</td>
<td>I never felt tense or any tension any of the time</td>
<td></td>
</tr>
</tbody>
</table>
9. How happy, satisfied or pleased have you been with your personal life during the past month?

<table>
<thead>
<tr>
<th>Extremely happy, could not have been more satisfied or pleased</th>
<th>Very happy most of the time</th>
<th>Generally satisfied-pleased</th>
<th>Sometimes fairly happy, sometimes fairly unhappy</th>
<th>Generally dissatisfied, unhappy</th>
<th>Very dissatisfied or unhappy most or all of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Did you feel healthy enough to carry out things you like to do or had to do during the past month?

<table>
<thead>
<tr>
<th>Yes-definitely so</th>
<th>For most part</th>
<th>Health problems limited me in some ways</th>
<th>I was only healthy enough to take care of myself</th>
<th>I needed some help in taking care of myself</th>
<th>I needed someone to help me in most or all of the things I had to do</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything was worthwhile during the past month?

<table>
<thead>
<tr>
<th>Extremely so-to the point that I have just about given up</th>
<th>Very much</th>
<th>Quite a bit</th>
<th>Some-enough to bother me</th>
<th>A little bit</th>
<th>Not a bit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. I woke up feeling refreshed during the past month.

<table>
<thead>
<tr>
<th>None of the time</th>
<th>A lot of the time</th>
<th>Some of the time</th>
<th>A good bit of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Have you been concerned, worried or had fears about your health during the past month?

<table>
<thead>
<tr>
<th>Extremely so</th>
<th>Very much so</th>
<th>Quite a bit</th>
<th>Some, but not a lot</th>
<th>Practically never</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. Have you had any reason to wonder if you were losing your mind, or losing control over the way you act, talk, think, feel or of your memory during the past month?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Some-not enough to be concerned or worried about</th>
<th>Some and I have been a little concerned</th>
<th>Some and I am quite concerned</th>
<th>Yes, very much so and I am very concerned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For each question circle the answer that best applies to you.
<table>
<thead>
<tr>
<th>Question</th>
<th>None of the time</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>A good bit of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. My daily life was full of things that were interesting me during the past month</td>
<td>None of the time</td>
<td>A little of the time</td>
<td>Some of the time</td>
<td>A good bit of the time</td>
<td>Most of the time</td>
<td>All of the time</td>
</tr>
<tr>
<td>16. Did you feel active, vigorous or dull, sluggish during the past month?</td>
<td>Very active, vigorous every day</td>
<td>Mostly active, vigorous-never really dull, sluggish</td>
<td>Fairly active, vigorous, seldom dull, sluggish</td>
<td>Fairly dull sluggish, seldom active, vigorous</td>
<td>Mostly dull sluggish, never really active, vigorous</td>
<td>Very dull, sluggish every day</td>
</tr>
<tr>
<td>17. Did you feel anxious, worried or upset during the Past month?</td>
<td>Extremely so, to the point of being sick or almost sick</td>
<td>Very much so</td>
<td>Quite a bit enough to bother me</td>
<td>A little bit</td>
<td>Not at all</td>
<td></td>
</tr>
<tr>
<td>18. I was emotionally stable and sure of myself during the past month.</td>
<td>None of the time</td>
<td>A little of the time</td>
<td>Some of the time</td>
<td>A good bit of the time</td>
<td>Most of the time</td>
<td>All of the time</td>
</tr>
<tr>
<td>19. Did you feel relaxed, at ease during the past month or highly strung, tight or keyed-up during the past month?</td>
<td>Felt relaxed and at ease the whole month</td>
<td>Felt relaxed and at ease most of the time</td>
<td>Generally I felt relaxed but at times felt fairly high strung</td>
<td>Generally felt fairly high strung but at times felt fairly relaxed</td>
<td>Felt high strung, tight, keyed up most of the time</td>
<td>Felt high strung, tight, keyed up the whole month</td>
</tr>
<tr>
<td>20. I felt cheerful, light hearted during the past month.</td>
<td>None of the time</td>
<td>A little of the time</td>
<td>Some of the time</td>
<td>A good bit of the time</td>
<td>Most of the time</td>
<td>All of the time</td>
</tr>
<tr>
<td>21. I felt worn out, used up or exhausted during the past month.</td>
<td>None of the time</td>
<td>A little of the time</td>
<td>Some of the time</td>
<td>A good bit of the time</td>
<td>Most of the time</td>
<td>All of the time</td>
</tr>
<tr>
<td>22. Have you been under or felt you were under and strain, stress or pressure during the past month?</td>
<td>Yes, almost more than I could bear or stand</td>
<td>Yes, quite a bit of pressure</td>
<td>Yes, some-more than usual</td>
<td>Yes, some-but about the usual</td>
<td>Yes, a little</td>
<td>Not at all</td>
</tr>
</tbody>
</table>
This section is divided up into three parts to evaluate a person’s physical activity. The three sections are (1) work activity, (2) sports activity, (3) leisure activity. **Circle** the response which best relates to you.

**For each question circle the answer that best applies to you**

<table>
<thead>
<tr>
<th>1) What is your main occupation?</th>
<th>Low activity</th>
<th>Moderate activity</th>
<th>High activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• At work I sit</td>
<td>Never</td>
<td>Seldom</td>
<td>Sometimes</td>
</tr>
<tr>
<td>• At work I stand</td>
<td>Never</td>
<td>Seldom</td>
<td>Sometimes</td>
</tr>
<tr>
<td>• At work I walk</td>
<td>Never</td>
<td>Seldom</td>
<td>Sometimes</td>
</tr>
<tr>
<td>• At work I lift heavy loads</td>
<td>Never</td>
<td>Seldom</td>
<td>Sometimes</td>
</tr>
<tr>
<td>• After work I am tired</td>
<td>Very often</td>
<td>Often</td>
<td>Sometimes</td>
</tr>
<tr>
<td>• At work I sweat</td>
<td>Very often</td>
<td>Often</td>
<td>Sometimes</td>
</tr>
<tr>
<td>• In comparison of others of my own age I think my work is physically</td>
<td>Much heavier</td>
<td>Heavier</td>
<td>As heavy</td>
</tr>
</tbody>
</table>

| 2) Do you play sports | Yes | No |

| • In comparison with others of my own age I think my physical activity during leisure time is | Much more | More | The same | Less | Much less |
| • During leisure time I sweat | Very often | Often | Sometimes | Seldom | Never |
| • During leisure time I play sport | Very often | Often | Sometimes | Seldom | Never |

**Data on most frequently played sport.**

| • What sport do you play most frequently | Low intensity | Medium intensity | High intensity |
**Data on second most frequently played sport.**

- **What sport do you play most frequently?**
  - Low intensity
  - Medium intensity
  - High intensity

- **How many hours do you play a week?**
  - Less than 1 hour
  - 1-2 hours
  - 2-3 hours
  - 3-4 hours
  - More than 4 hours

- **How many months do you play a year?**
  - Less than 1 month
  - 1-3 months
  - 4-6 months
  - 7-9 months
  - More than 9 months

In this section there are listed a number of body parts and functions. Please read each item and indicate how you feel about this part or function of your own body using the following scale:

1 = Have strong negative feelings

2 = Have moderate negative feelings

3 = Have no feeling one way or the other

4 = Have moderate positive feelings

5 = Have strong positive feelings

**1) Body Scent _____**
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Rating Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Appetite</td>
<td>1=Have strong negative feelings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2=Have moderate negative feelings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3=Have no feeling one way or the other.</td>
</tr>
<tr>
<td>3</td>
<td>Nose</td>
<td>4=Have moderate positive feelings.</td>
</tr>
<tr>
<td>4</td>
<td>Physical Stamina</td>
<td>5=Have strong positive feelings.</td>
</tr>
<tr>
<td>5</td>
<td>Reflexes</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Lips</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Muscular Strength</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Waist</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Energy Level</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Thighs</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Ears</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Biceps</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Chin</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Body Build</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Physical Coordination</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Buttocks</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Agility</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Width Of Shoulders</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Arms</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Chest Or Breasts</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Appearance Of Eyes</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Cheeks/ Cheekbones</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Hips</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Legs</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Figure Or Physique</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Sex Drive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>27)</td>
<td>Feet _____</td>
<td></td>
</tr>
<tr>
<td>28)</td>
<td>Sex Organs _____</td>
<td></td>
</tr>
<tr>
<td>29)</td>
<td>Appearance Of Stomach _____</td>
<td></td>
</tr>
<tr>
<td>30)</td>
<td>Health _____</td>
<td></td>
</tr>
<tr>
<td>31)</td>
<td>Sex Activities _____</td>
<td></td>
</tr>
<tr>
<td>32)</td>
<td>Body Hair _____</td>
<td></td>
</tr>
<tr>
<td>33)</td>
<td>Physical Condition _____</td>
<td></td>
</tr>
<tr>
<td>34)</td>
<td>Face _____</td>
<td></td>
</tr>
<tr>
<td>35)</td>
<td>Weight _____</td>
<td></td>
</tr>
</tbody>
</table>

**List Of Contacts For Support (If Needed).**

Ethan McGuirk (Conductor of this study): 083-3015920. Email: Ethan-mcguirk@hotmail.com

GROW (Mental Health Organisation): 1850474474

Mental Health Ireland: 01-2841166

Reachout (A web based service that helps people improve their own mental health and well being): Reachout.ie

Samaritans (emotional support helpline): 1850609090