

**The contribution of self-efficacy and outcome expectations  
towards the prediction of exercise adherence**



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Thesis presented in partial fulfilment of the requirements for the degree of  
Master of Arts (Counselling Psychology) at the University of Stellenbosch

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**December 1999**

## STATEMENT

I, the undersigned, hereby declare that the work contained in this thesis is my own original work, and that I have not previously in its entirety or in part submitted it at any university for a degree.

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## ABSTRACT

This study examined the capacity of Bandura's (1977) self-efficacy theory to predict exercise adherence. A selected group of fitness club members was assessed on the Physical Self-Efficacy Scale, an Adherence Efficacy Scale and an Outcome Expectancy Scale, of which the last two both have been designed specifically for this study. The dependent variable, exercise adherence, was assessed by monitoring the frequency of visits to the gymnasium. Stepwise multiple regression analysis was conducted to test the hypotheses. Results indicated that physical self-efficacy was the only significant predictor of exercise adherence. The results however differed for the gender groups. Whereas physical self-efficacy was the only significant predictor for female participants, male participants' adherence was predicted by adherence efficacy. These results partly confirm the self-efficacy theory of Bandura (1977). It also underlines the importance of assessing different dimensions of self-efficacy in adherence research.

## OPSOMMING

Hierdie studie was 'n ondersoek na die vermoë van Bandura (1977) se self-effektiwiteitsteorie om oefenvolharding te voorspel. 'n Geselekteerde groep van gimnasiumlede is gemeet op die Physical Self-Efficacy skaal, 'n Adherence Efficacy skaal en 'n Outcome Expectancy skaal. Die laaste twee is spesifiek vir die doel van hierdie studie ontwikkel. Die afhanklike veranderlike, oefenvolharding, is gemeet deur die frekwensie van besoeke aan die gimnasium te monitor. Stapsgewyse meervoudige regressie-ontleding is uitgevoer om die hipoteses te toets. Die resultate het aangedui dat fisieke self-effektiwiteit die enigste beduidende voorspeller van oefenvolharding was. Die resultate het egter verskil tussen die geslagsgroepe. Waar fisieke self-effektiwiteit die enigste beduidende voorspeller vir vroulike deelnemers was, is mans se oefenvolharding voorspel deur volhardingseffektiwiteit. Hierdie resultate ondersteun die self-effektiwiteitsteorie van Bandura (1977) gedeeltelik. Dit beklemtoon ook die belangrikheid om, betreffende navorsing oor oefenvolharding, die verskillende dimensies van self-effektiwiteit te bepaal.

This work is the result of a research project which is of the same extent as that required for master's theses.

The Department of Psychology has an arrangement that the report of the research may take the form of an article which is ready for submission for publication to a scientific journal.

## **ACKNOWLEDGEMENTS**

I would like to thank the following people:

- Mr HR Steel, my supervisor
- The management and staff of the University of Stellenbosch Gymnasium
- My family, for their support and interest
- Esmé, for her love and patience

Above all I would like to thank God for inspiring me.

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## RESEARCH PROBLEM

The contribution of physical activity and exercise to physical and mental health is widely acknowledged. Many studies have shown the effect of physical activity on depression, anxiety, neuroticism, self-consciousness and self-esteem (Berger, 1994; Moses, Steptoe, Mathews & Edwards, 1989; Smoll, Smith, Barnett & Everett, 1993; Stein & Motta, 1992). These research studies all indicated improvements in short and long term mental health due to physical exercise.

Participation in sport and exercise is despite these benefits, not as high as would be expected. A sedentary lifestyle is the rule rather than the exception. Roberts (quoted in Steyn, Goslin & Piek, 1991) has suggested that up to 80% of youth between the ages of twelve and seventeen years quit their participation in sport. The reality in the so-called sport crazy South Africa is also far removed from popular views. Brown (1995) claims that only 14 to 28% of South Africans actually participate in a sport. Other sources (Van Blerk, 1994) have this figure as low as 10%.

Although people often start an exercise program or physical activity highly motivated, their resolutions are seldom carried through. Drop-out in exercise programmes shows a negative trend in the course of time and the overall trend is that 50% of participants in a specific program will discontinue their exercising within six months of starting or renewing a program (Dishman, 1982, 1988).

Various research studies in the area of exercise adherence and the prediction of exercise behaviour have been undertaken (Courneya & McAuley, 1994; Douthitt, 1994; Theodorakis, 1994; Theodorakis, Doganis, Bagiatis & Gouthas, 1991). Factors that have previously been explored as possible predictors of exercise behaviour are personal and situational factors (Sallis et al., 1989), attitude (Bentler & Speckart, 1979; Merriman, 1993), enjoyment (Wankel, 1993), perceived romantic appeal and perceived athletic competency (Douthitt, 1994), as well as skill development and excitement (Chambers, 1991). There was however criticism against atheoretical research. Biddle (1997) found that between 1979 and 1991, only half of the studies on exercise adherence and motivation, tested a specific

theory. In recent years, researchers have begun to focus on cognitive and social-cognitive approaches to predict exercise behaviour (Biddle, 1997; Roberts, 1992). Theories that are applied are self-efficacy (Bandura, 1977, 1982), reasoned action (Fishbein & Ajzen, 1975), planned behaviour and perceived behavioural control (Ajzen, 1991).

### **Self-efficacy**

The concept of self-efficacy is defined by Bandura (1977) as the conviction of a person that he or she can successfully perform a desired behaviour. According to the model, this conviction has an effect on the initiation, persistence and success of the task behaviour. Although there is no single variable that comes to the fore as the only predictor of exercise behaviour, the self-efficacy model of Bandura is theoretically sound and its superiority over other models of prediction has already been shown (Dishman, 1994b; Duncan & McAuley, 1993; Dzewaltowski, Noble & Shaw, 1990). According to O'Leary (1985) this theory has been used to explain a wide variety of health behaviours such as weight control, cessation of smoking and adherence to preventive health programs.

Self-efficacy beliefs vary on three different dimensions and this has implications for operational definitions as well as measurement of the concept (see Fig 1.1). The dimensions are *level*, *generality*, and *strength* (Bandura, 1977). The level of efficacy refers to the degree of difficulty in the task demand. Generality indicates whether people judge themselves capable in a wide area of activities or only in certain areas of functioning. The depth of generality could be specific, intermediate or general. Efficacy beliefs also vary in strength. Strong beliefs will prolong in adversity while weaker beliefs will fade away more easily. According to Bandura (1997), researchers must make use of conceptual analysis and expert knowledge to determine how these three dimensions culminate in a specific domain.

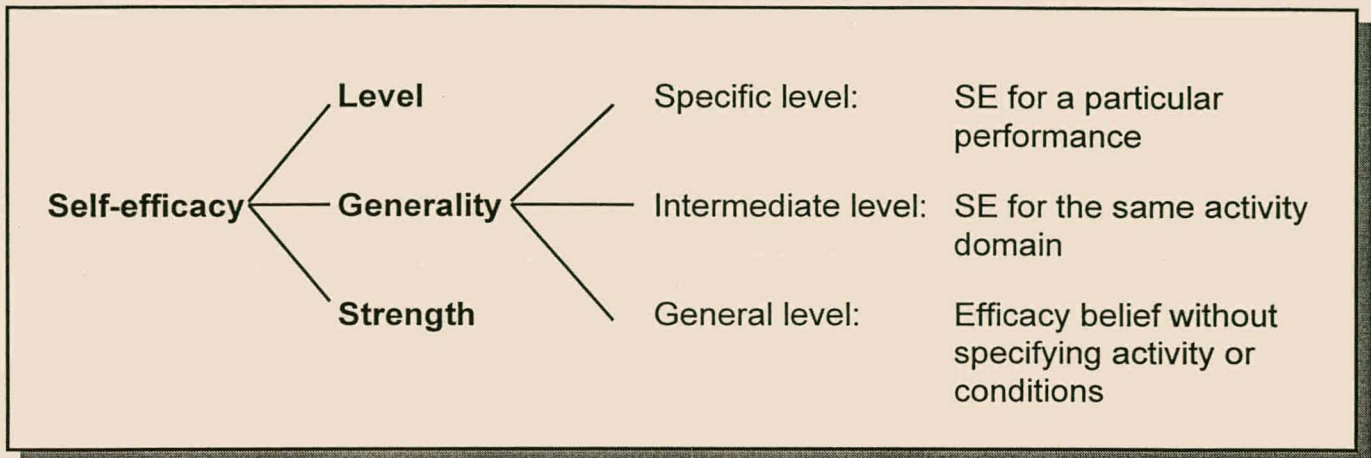


Figure 1.1 The multidimensionality of self-efficacy belief systems

Current research on self-efficacy and exercise behaviour has a few shortcomings in certain areas. Firstly, the research studies usually focus on achievement rather than adherence to exercise (Feltz, 1992). The current tendency in sport psychology is to diversify, adding to the traditional focus of elite participation also that of health-promoting exercise, lifestyle development and leisure participation. To keep in step with this trend, self-efficacy should be studied as a tool to improve healthy behaviour. The focus should be on the influence of self-efficacy on motivation rather than skill.

Biddle and Mutrie (cited in Biddle, 1997) identified issues in exercise self-efficacy that need further investigation. They were:

- the impact of self-efficacy on different physical activity settings
- the integration of self-efficacy and attribution theories
- the nature and extent of gender differences in self-efficacy
- the impact of self-efficacy in situations of prolonged effort
- the longevity of self-efficacy beliefs
- the independence or convergence of self-efficacy with other psychological constructs.

Bandura (1977, 1982) stressed the importance of micro-analysis during assessment of self-efficacy. General or contextless measures of efficacy have weaker predictive

value. Recent studies on self-efficacy however fail to measure the construct in depth (McAuley, 1992).

Lastly, a phenomenon in recent adherence research, is that instruments measuring self-efficacy are aimed at assessing a person's judgement of whether he or she will continue exercising, even with the prospect of certain barriers (Desharnais, Bouillon, & Godin, 1986; Dzewaltowski et al., 1990; Steenkamp, 1994). The instruments actually measure expectations of self-efficacy and in terms of the dimensions of efficacy beliefs, are only on the strength dimension. As far as could be ascertained no research in exercise adherence thus far has examined the influence of self-efficacy as a function of the person's physical self-efficacy. A person's belief that he or she has the physical ability to be successful in the demands of his or her exercise program (generality of self-efficacy beliefs) is an unknown factor in adherence research. Ryckman, Robbins, Thornton and Cantrell (1982) stressed the importance of assessing each aspect of self-efficacy independently. Furthermore, if efficacy is measured according to the types of subskills required to complete the task, the ability of self-efficacy to predict adherence will most likely be considerably stronger (McAuley, 1992). In view of this and Bandura's (1977; 1982) and McAuley's (1992) plea for micro-analysis of self-efficacy, research in this area is needed.

### **Outcome expectations**

An important aspect of Bandura's theory is the differentiation of self-efficacy and outcome expectancy. Bandura defines outcome expectancy as a person's expectation that a specific behaviour will lead to a certain outcome (Bandura, 1977). The difference in the two constructs is explained by the fact that a person can believe that what he does will lead to certain outcomes (outcome expectancy), but he may doubt his ability to successfully execute the behaviour (self-efficacy). Figure 1.2 shows the relationship between efficacy beliefs and outcome expectations. Note that efficacy beliefs can vary in level, strength, and generality. The expected outcomes may be physical, social or self-evaluative.



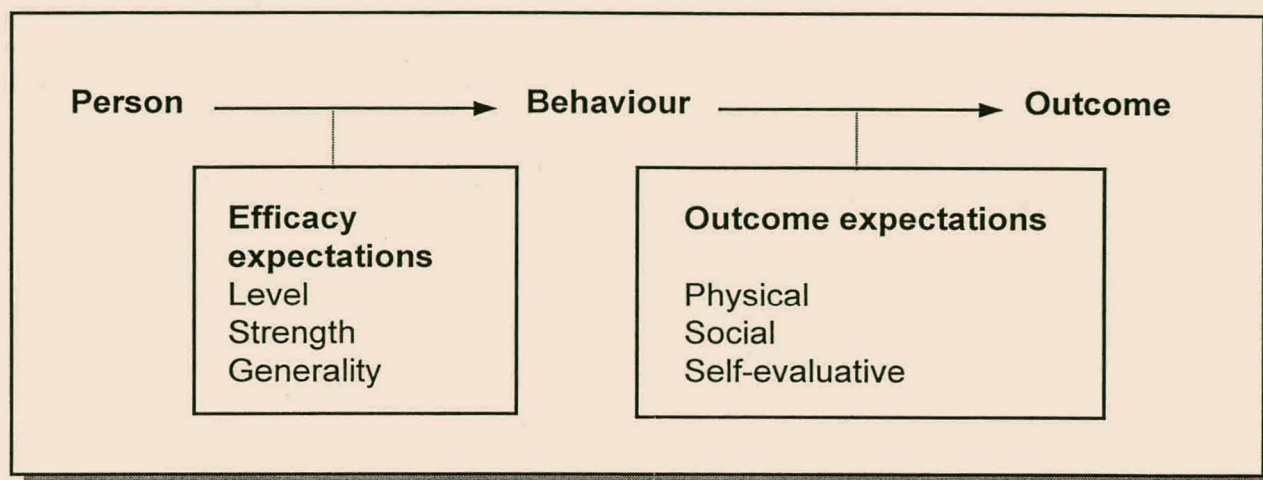


Figure 1.2 The relationship between self-efficacy and outcome expectations.

(Bandura, 1997)

It is important to note that self-efficacy beliefs and outcome expectations can both exist in a person's mind before behaviour is undertaken. According to Bandura (1997), both can be determinants of behaviour. Desharnais, Bouillon and Godin (1986) and Rodgers and Brawley (1996) have however shown that the contribution of outcome expectations is independent of the contribution of self-efficacy.

Rodgers and Brawley (1991) proposed a methodological model to measure outcome expectations in participation motivation. This approach takes into account both outcome value and outcome likelihood to determine outcome expectancy. Another distinction of this approach is the differentiation of proximal and distal outcomes. According to Rodgers and Brawley (1991) the concept of outcome expectancy is largely unexamined and the above mentioned approach allows for a way in which this concept can be examined.

There is conflicting evidence of the influence of outcome expectations on exercise adherence. Dzewaltowski et al. (1990) reported that although self-efficacy significantly predicted adherence, outcome expectations did not add significantly towards predicting adherence. On the other hand, Desharnais et al. (1986) found that both outcome expectancy and self-efficacy have predictive value, but that low rather than high outcome expectancy determined adherence. Desharnais et al.

(1986) concluded that continued participation in exercise will improve, when participants' outcome expectations are lowered and their self-efficacy is raised. There is however a need for empirical evidence.

### **Exercise behaviour and adherence**

Traditional research in sport psychology has focused on performance, structured types of exercise or team related sports. The importance of psychology in non-competitive physical activity, exercise and other health-related behaviour, has led to the acceptance of a more comprehensive term, namely sport and exercise psychology (Biddle, 1997). More research is needed in the area of personal fitness and the development of a healthy lifestyle.

The aim of this study was to investigate adherence to intended exercise behaviour, specifically in the area of personal fitness. This will to some extent lessen the effect of social support, motivation and instructional factors that may be present in structured and team sport exercise programs. These factors may influence adherence efficacy (Duncan & McAuley; 1993). Oldridge (1981) believes that a critical sign of adherence is continuing with exercise in an unsupervised situation. Another factor that influenced research results is that samples that were taken were often currently active people or those with a past history of activity (Dishman, 1994a).

According to Courneya and McAuley (1994), how the term physical activity is defined and operationalized, poses a major problem in studying the determinants of physical activity. The most common index of adherence to exercise has been attendance or frequency. Intensity (Dzewaltowski et al., 1990) and duration have also been used to assess exercise adherence. There is however growing support for the health benefits of moderate intensity exercise (Dishman, 1994a; Moses et al., 1989). Considering the current study's focus on personal fitness and health behaviour, rather than on performance, the assessment of physical activity was done by measuring frequency of participation and not intensity or duration. For the purpose of this study, continued, regular attendance, implicated adherence to the exercise program.

It is important to note that people have different needs and different views of what sufficient exercise is. Focusing merely on frequency of participation without taking into account a person's intended exercise frequency, will not give a true reflection of adherence. As an example a person who intends to exercise twice a week and keeps to it, is adhering to his or her exercise program just as well as someone who intends to and eventually exercises five times a week. This study measured the participant's intended exercise frequency as well as the actual frequency in order to get a true measure of adherence.

Most studies on adherence make use of self-report measures to assess exercise participation (Dishman, 1994b). The problem that this method has, is that no verification of the adherence data is possible. The current study made use of external means to gather adherence data.

## **RESEARCH GOALS**

The current research is based on the supposition that self-efficacy and outcome expectations have a separate and concerted effect on exercise adherence. The aim of the research was to determine the contribution of self-efficacy and outcome expectations towards the prediction of continued participation in exercise behaviour.

### **Secondary goals:**

1. To determine the contribution of self-efficacy towards the prediction of exercise adherence.
2. To determine the contribution of outcome expectations towards the prediction of exercise adherence.
3. To determine the possible interaction or relationship between the two constructs and by doing so, further explaining the efficacy model.
4. To determine whether there is a difference in prediction value between a person's adherence efficacy and physical self-efficacy.



## **RESEARCH METHOD**

### **Participants**

The target group was new members of the University of Stellenbosch gymnasium. The criteria that were used to define new members were persons who joined the club or renewed their membership during the month prior to the study. Participants who were previously members of another gymnasium, were excluded from the sample. The final sample consisted of 84 participants (43 male, 41 female) and all were current students at the university.

### **Research design**

The study is a survey design and took on the form of a prospective prediction design. The independent variables (physical self-efficacy, adherence self-efficacy and outcome expectations) were measured by the three scales that will be discussed below. The dependent variable (exercise adherence) was measured by monitoring the number of sessions that a participant visited the gymnasium.

Variables that were controlled by exclusion were:

- the possible effect of previous and current adherence to exercise
- the possible effect of supervised exercise programs
- the factors that prevent normal exercising at the gymnasium such as illness, injury and travel.

### **Measurement instruments**

#### **Physical self-efficacy scale (PSE)**

The PSE was developed by Ryckman et al. (1982) and measures a person's perceived physical competence and confidence that the person can display the physical skill to others. In terms of the dimensions of efficacy beliefs, the PSE assesses self-efficacy on the intermediate level of generality. The instrument is

based on the assumption that people's expectations of their own efficacy have an influence on their cognitive, affective, and behavioural patterns (Corcoran & Fisher, 1994).

The PSE contains 22 items with two subscales, perceived physical ability (PPA) and physical self-presentation confidence (PSPC), which add to form the global physical self-efficacy scale. The questionnaire is in the form of a six point Likert scale with eleven items that are scored in reverse. Scores are added to obtain the subscale scores and the global score. A higher score on the three subscales indicates higher self-efficacy.

The reliability of the PSE is high with alpha-coefficients for internal consistency at 0,74 for the PSPC, 0,84 for the PPA and 0,81 for the global PSE. Ryckman et al. (1982) also found a test-retest reliability over six weeks of 0,85 for the PPA, 0,69 for the PSPC and 0,80 for the PSE.

The construct validity of the PSE was investigated by Ryckman et al. (1982) by correlating the scores from the PSE with the Tennessee Physical Self-Concept subscale, the Self-Consciousness Scale and the Texas Social Behavior Inventory. The PSE correlated most strongly with the Tennessee Physical Self-Concept subscale and the correlation with the PPA was 0,43 ( $p < 0,001$ ) and with the PSPC 0,52 ( $p < 0,001$ ). This investigation also revealed satisfactory discriminant validity of the two subscales as well as good concurrent validity.

### **Adherence Self-efficacy scale (AES)**

This self-efficacy scale was developed by Garcia and King (1991) for a study of long-term exercise behaviour. The instrument consists of 15 items that were based on previous research in similar populations. The 15 items were chosen according to recommendations by self-efficacy theorists and they were all specific to the behaviour under study, namely exercise adherence. Participants rate their confidence that they would exercise under certain potential conflicting situations such as when tired or when their schedule is hectic. In terms of the dimensions of efficacy beliefs, the AES assesses self-efficacy on the strength dimension. The

items are all answered by a confidence rating of 0-100% in increments of ten. The average of the fifteen items gives the adherence self-efficacy score for the individual. For the purpose of this study, the questionnaire was changed to a six point Likert scale.

### **Outcome expectancy scale (OES)**

This scale was developed specifically for the current study. No known instrument exists that measure outcome expectations for exercise participation. In a previous study that assessed outcome expectations, Dzewaltowski et al. (1990) made use of a free-response format to determine participants' intended outcomes. The items of the outcome expectancy scale that were used for the current research, were derived from selected outcomes that Rodgers and Brawley (1991) identified in a pilot study. Participants have to choose one or more outcome expectations that are applicable to them. Each outcome is then evaluated on the likelihood that it would be reached and the value that the participant attaches to it. According to Rodgers and Brawley (1991), outcome likelihood and outcome value are two distinct and measurable variables in assessing outcome expectancy. Both variables were assessed in the current research.

Following the suggestion by Rodgers and Brawley (1991), the likelihood scale was measured on a response continuum of 100% because this gives participants a better sense of probability. The value scale is in the form of a six point Likert scale.

### **Measurement of exercise adherence**

Exercise frequency was assessed by using the gymnasium's computer access system. The number of sessions that a member visited the gymnasium was checked on a weekly basis for six weeks to ascertain exercise frequency. To incorporate a person's intended behaviour, an item to measure intended exercise frequency was included in the questionnaire. The frequency of exercise sessions at the gymnasium was then compared to the actual exercise frequency and expressed as a percentage of adherence (for example a person who intended to exercise four times in a week but in reality only exercised three times, will have an adherence index of  $\frac{3}{4}$  or 75%).

This method has the advantage of expressing adherence as a continuum rather than a dichotomy of adherers or dropouts. By dichotomising the group as adherers or dropouts, a great deal of information may be lost and this also prevents comparison between studies with different time frames (Dishman, 1982). A follow-up was done on participants who did not keep up with their intended exercise frequency. This identified and eliminated confounding variables such as illness and other factors that might have had an influence on exercise adherence.

### **Procedure**

Permission to complete the proposed research was obtained from the management of the University of Stellenbosch gymnasium. The nature of the questionnaires is such, that it required little self-disclosure and did not offend sensitive participants.

Voluntary members received a questionnaire that included information on the research, instructions and the three scales, namely the Physical Self-efficacy Scale, the Adherence Efficacy Scale and the Outcome Expectancy Scale as well as an item to indicate intended exercise. The members completed the forms and handed them back at the gymnasium. Participants who responded to the questionnaire took part in the study without further direct contact with the researcher. Adherence was under surveillance for the following six weeks. Subsequently, a follow-up on participants who did not exercise at all in any one week, was done. Participants who had a valid reason for not exercising (e.g. sickness, travel) would have been excluded from the study. For this sample however, participants who did not exercise in any one week gave laziness, too little time and no motivation as reasons for not exercising. No one was therefore excluded from the study.

## RESULTS

Descriptive statistics of the individual scores on the different scales and subscales, were computed for the total sample. These statistics are reported in Table 1. Multiple regression analysis was conducted to test the hypotheses formulated in the previous section. All statistical analyses were done using SPSS for Windows, Version 8.0.

Table 1  
Means and standard deviations for all variables

Variable	sex	N	Mean	SD
Age	male	43	20,65	1,94
	female	41	20,41	2,39
Adherence efficacy	male	43	65,5349	11,7257
	female	41	63,7073	11,2988
Perceived physical ability	male	43	43,5814	5,9130
	female	41	39,7561	9,1427
Physical self-presentation confidence	male	43	53,3953	5,5940
	female	41	49,3415	6,9556
Physical self-efficacy	male	43	96,9767	9,5904
	female	41	89,0976	13,8831
Outcome expectancy	male	43	24,2041	8,1579
	female	41	24,0296	7,1788
Exercise adherence	male	43	0,5787	0,4220
	female	41	0,5001	0,4353

Ordinary multiple regression analysis is performed by entering all the independent variables into the regression model simultaneously. In stepwise regression analysis independent variables are selected for inclusion in the regression model. The analysis starts by selecting the best predictor of the dependent variable. Additional independent variables are selected in terms of the incremental explanatory power they can add to the regression model. Independent variables are added as long as their partial correlation coefficients are statistically significant. A stepwise multiple regression analysis was conducted to evaluate the contribution of physical self-efficacy, adherence efficacy, outcome expectancy and the joint contribution of self-efficacy and outcome expectancy in predicting exercise adherence for the total group. The results of the analysis are reported in Table 2.

Table 2  
Results of the stepwise multiple regression analysis for the total group

Model summary					
R	0,364				
R square	0,133				
Adjusted R square	0,122				
Std. Error of estimate	0,4008				

ANOVA					
Sources of variation	df	Sum of squares	Mean square	F	Sig. F
Regression	1	2,013	2,013	12,528	0,001
Residual	82	13,175	0,161		

Coefficients					
	Unstandardized coefficients		Std. coefficients	t	Sig. of t
	B	Std. Error	Beta		
(Constant)	-0,624	0,332		-1,881	0,064
Physical self-efficacy	0,013	0,004	0,364	3,539	0,001

Excluded variables					
Variable	Beta in	t	Sig. of t	Partial Correlation	Collinearity statistics Tolerance
Adherence efficacy	0,126	1,044	0,300	0,115	0,721
Outcome expectancy	-0,032	-0,279	0,781	-0,031	0,821
Self-efficacy + outcome expectancy	-0,071	-0,279	0,781	-0,031	0,163

Only physical self-efficacy (standardized beta = 0,36) emerged as a significant predictor of exercise adherence, accounting for 13% of the variance in exercise adherence ( $F[1,82] = 12,53$ ,  $p=0,001$ ).

In the second analysis the same independent variables were included except that the subscales of the PSE namely physical self-presentation confidence and perceived physical ability replaced the previously entered physical self-efficacy. The results of the analysis are reported in Table 3.

Table 3

Results of the stepwise multiple regression analysis for the total group with subscales entered

Model summary					
R	0,327				
R square	0,107				
Adjusted R square	0,096				
Std. Error of estimate	0,4066				
ANOVA					
Sources of variation	df	Sum of squares	Mean square	F	Sig. F
Regression	1	1,629	1,629	9,848	0,002
Residual	82	13,560	0,165		
Coefficients					
	Unstandardized coefficients		Std. coefficients	t	Signif. of t
	B	Std. Error	Beta		
(Constant)	-0,554	0,352		-1,576	0,119
Physical self-presentation confidence	0,021	0,007	0,327	3,138	0,002
Excluded variables					
Variable	Beta in	t	Sig. of t	Partial Correlation	Collinearity statistics Tolerance
Adherence efficacy	0,196	1,801	0,075	0,196	0,890
Outcome expectancy	0,056	0,521	0,604	0,058	0,948
Self-efficacy + outcome expectancy	0,180	1,220	0,226	0,134	0,500
Perceived physical ability	0,188	1,594	0,115	0,174	0,765

In this analysis PSPC, a subscale of PSE was the only significant predictor of exercise adherence. It explained 10,7% of the variance in exercise adherence ( $F[1,82] = 9,848, p=0,002$ ).

To examine the unexpected differences in mean scores between males and females on the PSE and its subscales, a t-test (independent samples test) was conducted (see Table 4). It revealed that men scored significantly higher on PSE ( $t[82] = 3,039, p=0,003$ ), PPA ( $t[82] = 2,288, p=0,025$ ) and PSPC ( $t[82] = 2,950, p=0,004$ ).

Table 4

t Tests for equality of means comparing PSE, PPA and PSPC scores of males and females

Group	n	M	SD	df	t	p
<b>Physical self-efficacy</b>				82	3,039	0,003
male	43	96,9767	9,5904			
female	41	89,0973	13,8831			
<b>Perceived physical ability</b>				82	2,288	0,025
male	43	43,5814	5,9130			
female	41	39,7561	9,1427			
<b>Physical self-presentation confidence</b>				82	2,950	0,004
male	43	53,3953	5,5940			
female	41	49,3415	6,9556			

Further regression analyses were conducted to investigate the possible differences in predictor variables between the gender groups. Stepwise multiple regression analysis was again used to determine the contribution of PSE, adherence efficacy, outcome expectancy and the joint contribution of self-efficacy and outcome expectancy in predicting exercise adherence. The results for males are reported in Table 5.



Table 5  
Results of stepwise multiple regression analysis for males (subscales not entered)

Model summary					
R	0,453				
R square	0,205				
Adjusted R square	0,186				
Std. Error of estimate	0,3809				

ANOVA					
Sources of variation	df	Sum of squares	Mean square	F	Sig. F
Regression	1	1,533	1,533	10,566	0,002
Residual	41	5,948	0,145		

Coefficients					
	Unstandardized coefficients		Std. Coefficients	t	Sig. of t
	B	Std. Error	Beta		
(Constant)	-0,489	0,334		-1,466	0,150
Adherence efficacy	0,016	0,005	0,453	3,251	0,002

Excluded variables					
Variable	Beta in	t	Sig. of t	Partial Correlation	Collinearity statistics Tolerance
Physical self-efficacy	0,238	1,442	0,157	0,222	0,695
Outcome expectancy	-0,096	-0,624	0,536	-0,098	0,831
Self-efficacy + outcome expectancy	0,086	0,509	0,614	0,080	0,695

Surprisingly, adherence efficacy (standardized beta = 0,453) emerged as the only significant predictor of exercise adherence. It accounted for 20% of the variance in exercise adherence ( $F[1,41] = 10,566, p=0,002$ ). As with the total group, the subscales of the PSE were also entered into the analysis. It revealed that adherence efficacy was, exactly as when the subscales were not entered, again the only significant predictor. This analysis is reported in Table 6.

Table 6  
Results of stepwise multiple regression analysis for males (subscales entered)

Model summary					
R	0,453				
R square	0,205				
Adjusted R square	0,186				
Std. Error of estimate	0,3809				

ANOVA					
Sources of variation	df	Sum of squares	Mean square	F	Sig. F
Regression	1	1,533	1,533	10,566	0,002
Residual	41	5,948	0,145		

Coefficients					
	Unstandardized coefficients		Std. Coefficients	t	Sig. of t
	B	Std. Error	Beta		
(Constant)	-0,489	0,334		-1,466	0,150
Adherence efficacy	0,016	0,005	0,453	3,251	0,002

Excluded variables					
Variable	Beta in	t	Sig. of t	Partial Correlation	Collinearity statistics Tolerance
Perceived physical ability	0,196	1,202	0,236	0,187	0,720
Physical self-presentation confidence	0,158	1,045	0,303	0,163	0,850
Outcome expectancy	-0,096	-0,624	0,536	-0,098	0,831
Self-efficacy + outcome expectancy	0,086	0,509	0,614	0,080	0,695

The analysis reported in Table 6 revealed the same results as the analysis reported in Table 5. The only difference was that the excluded variables in the second analysis included the subscales perceived physical ability and physical self-presentation confidence and not physical self-efficacy.

The same procedure was also followed for the female group. First, the independent variables were entered without the subscales. The results are reported in Table 7.

Table 7

Results of the stepwise multiple regression analysis for females (subscales not entered)

Model summary					
R	0,320				
R square	0,103				
Adjusted R square	0,080				
Std. Error of estimate	0,4176				

ANOVA					
Sources of variation	df	Sum of squares	Mean square	F	Sig. F
Regression	1	0,778	0,778	4,459	0,041
Residual	39	6,800	0,174		

Coefficients					
	Unstandardized coefficients		Std. Coefficients	t	Sig. of t
	B	Std. Error	Beta		
(Constant)	-0,395	0,429		-0,921	0,363
Physical self-efficacy	0,010	0,005	0,320	2,112	0,041

Excluded variables					
Variable	Beta in	t	Sig. of t	Partial Correlation	Collinearity statistics Tolerance
Adherence efficacy	-0,109	-0,602	0,551	-0,097	0,712
Outcome expectancy	0,038	0,229	0,820	0,037	0,862
Self-efficacy + outcome expectancy	0,094	0,229	0,820	0,037	0,139

As in the analysis for the total group, physical self-efficacy (standardized beta = 0,320) again emerged as the only significant predictor of exercise adherence. It accounted for 10% of the variance in exercise adherence ( $F[1,39] = 4,459, p=0,41$ ).

In the last analysis the same independent variables were included except that the subscales of PSE, namely PSPC and PPA, replaced the previously entered PSE. The results of the analysis are reported in Table 8.

Table 8

Results of the stepwise multiple regression analysis for females (subscales entered)

Model summary					
R	0,323				
R square	0,105				
Adjusted R square	0,082				
Std. Error of estimate	0,4171				

ANOVA					
Sources of variation	df	Sum of squares	Mean square	F	Sig. F
Regression	1	0,792	0,792	4,553	0,039
Residual	39	6,786	0,174		

Coefficients					
	Unstandardized coefficients		Std. Coefficients	t	Sig. of t
	B	Std. Error	Beta		
(Constant)	-0,498	0,472		-1,055	0,298
Physical self-presentation confidence	0,020	0,009	0,323	2,134	0,039

Excluded variables					
Variable	Beta in	t	Sig. of t	Partial Correlation	Collinearity statistics Tolerance
Adherence efficacy	0,006	0,039	0,969	0,006	0,925
Outcome expectancy	0,139	0,918	0,365	0,147	0,998
Self-efficacy + outcome expectancy	0,173	0,866	0,392	0,139	0,577
Perceived physical ability	0,111	0,641	0,526	0,103	0,772

Similar to the analysis of the total group when the subscales of the PSE were entered, physical self-presentation confidence (standardized beta = 0,323) emerged as the only significant predictor of exercise adherence. It explained 10% of the variance in exercise adherence ( $F[1,39] = 4,553, p=0,039$ ).

Finally, for exploratory reasons the individual items of the Outcome Expectancy Scale were correlated with exercise adherence. The results are reported in Table 9.

Table 9

Pearson correlations between the items of the Outcome Expectancy Scale and exercise adherence

		OES 1	OES 2	OES 3	OES 4	OES 5	OES 6	OES 7	OES 8
OES 1	Pearson R	–							
	Sig.								
OES 2	Pearson R	0,539	–						
	Sig.	0,000							
OES 3	Pearson R	0,635	0,361	–					
	Sig.	0,000	0,001						
OES 4	Pearson R	0,505	0,366	0,332	–				
	Sig.	0,000	0,000	0,002					
OES 5	Pearson R	0,472	0,388	0,376	0,513	–			
	Sig.	0,000	0,000	0,000	0,000				
OES 6	Pearson R	0,558	0,523	0,350	0,518	0,489	–		
	Sig.	0,000	0,000	0,001	0,000	0,000			
OES 7	Pearson R	0,488	0,380	0,383	0,349	0,416	0,453	–	
	Sig.	0,000	0,000	0,000	0,001	0,000	0,000		
OES 8	Pearson R	0,265	0,422	0,214	0,574	0,416	0,306	0,231	–
	Sig.	0,015	0,000	0,051	0,000	0,000	0,005	0,035	
Exer adh.	Pearson R	0,155	0,097	0,116	-0,056	0,095	0,238	0,036	-0,016
	Sig.	0,159	0,379	0,295	0,610	0,391	0,030	0,746	0,885

The Pearson correlation coefficients revealed that only item 6 (“attaining a sense of accomplishment”) had a significant correlation with exercise adherence ( $r = 0,238$ ,  $p < 0,030$ ). The significant intercorrelations of the items of the OES indicate that there is good internal consistency in this instrument.

To conclude, the stepwise multiple regression analysis indicated that PSE, PSPC and adherence efficacy were the sole predictors for respectively the total group, female group and male group.

## DISCUSSION

The results of this study partly confirm Bandura's (1977) self-efficacy theory. It is also consistent with existing literature that have found efficacy beliefs to significantly influence exercise behaviour. Although efficacy beliefs do show a significant prediction value, outcome expectations did not reveal any significant results. Stepwise regression analyses also indicated that outcome expectations did not account for any unique variance in exercise adherence over and above that of physical self-efficacy. It does however correspond with research of Desharnais et al. (1986) that self-efficacy is a more central determinant of adherence than outcome expectations. Dzewaltowski (1989) reported that outcome expectations did not significantly add to self-efficacy beliefs' prediction of participation. In this study the combined effect of self-efficacy and outcome expectancy was also not significant.

Rodgers and Brawley (1991) made a distinction between proximal and distal outcomes when outcome expectations were assessed. They suggested that there is a clear difference in motivational value between proximal and distal outcomes. One explanation for the current study failing to find any contribution from outcome expectations could be that no methodological distinction was made between proximal and distal outcomes. Illustrating this is the fact that a single item in the Outcome Expectancy Scale ("Attaining a sense of accomplishment"), did show a significant relation to exercise adherence. "Attaining a sense of accomplishment" is a secondary or distal outcome and it could be true that for this sample a secondary outcome or outcomes may have influenced adherence.

The Outcome Expectancy scale was designed specifically for this study. Although it was based on similar scales used in previous studies and in the often used value-likelihood format, there is no standardised instrument to assess outcome expectations in adherence research. This makes comparisons between adherence research studies difficult. In this regard Dzewaltowski et al. (1990) suggested that different methods of assessing outcome expectations should be compared in the future, to determine whether the inconsistent results are due to a measurement

problem. One such problem could be the fact that expectations should be realistic rather than strong to have a positive influence on adherence. This study and research by Desharnais et al. (1986) made provision for this measurement problem by hypothesising that a low rather than high outcome expectation would predict adherence. However, It does not account for persons who for a given outcome, attached a low or moderate value but felt that the outcome is very likely. This questions the traditional value-likelihood or expectancy-value model for assessing outcome expectations as proposed by Rodgers and Brawley (1991).

Dzewaltowski (1989) proposed that, in defiance of Bandura's (1977) theory, outcome expectations may not be differentiated from efficacy beliefs after all:

All individuals may value and expect some reward from exercise, and for that reason differences across the multiple outcomes of exercise may not serve to discriminate between individuals who vary in the amount of days they exercise. Alternatively, outcome expectations and their evaluation may not operate in a multiplicative function to influence exercise. Outcome expectations may operate independently, such that the belief in any one valued outcome provides enough incentive to allow the other cognitive mechanisms to mediate the number of days exercised per week (p. 264).

The prediction of exercise adherence has been explored in a number of ways including using self-efficacy and outcome expectations. Up to now however, researchers have used adherence efficacy as the only dimension of self-efficacy beliefs to explain exercise behaviour. Part of the aim of this study was to investigate the prediction value of physical self-efficacy compared to the currently used adherence efficacy. It was hypothesised that physical self-efficacy would have a greater predictive power than adherence efficacy. This hypothesis was supported when the total group was taken into account (there were different results for gender groups; this will be discussed later). As reported earlier, multiple regression analysis indicated that physical self-efficacy was the sole predictor of exercise adherence. Adherence efficacy did not significantly contribute to the prediction of exercise



adherence. Ryckman et al. (1982) found that persons with higher perceived physical self-efficacy had a higher self-esteem, were less self-conscious and anxious, had an internal locus of control, were more sensation-seeking, and showed a tendency to engage in adventurous physical activities. Furthermore, these persons saw themselves as physically competent and reported more varied and extensive sports experience. It could be concluded from these results that for this sample, physical self-efficacy is a better predictor of adherence than adherence efficacy. At the very least it gives a new dimension to the prediction of exercise adherence through self-efficacy.

When the subscales were entered, physical self-presentation confidence, a subscale of physical self-efficacy, was the only variable to show significant results. The implication of this result could be that confidence in the presentation of physical skills (exercise) played a more decisive role in adherence than perceived ability.

The differences in gender groups correspond with results found by Sumerlin, Berretta, Privette and Bundrick (1994). They found that men scored significantly higher on the Physical Self-efficacy scale as well as the Perceived Physical Ability scale and the Physical Self-presentation scale. Godin and Shepard (1985) found men scoring higher only on PSE and the PSPC subscale. These differences could be due to gender-related cultural expectations (Rodin, 1992 quoted in Hart, Leary and Rejeski, 1989).

Apart from the significant difference in scores between males and females, there was also a different significant predictor for each group. This makes the results more difficult to explain. For men adherence efficacy was the best predictor while PSE (and PSPC when subscales were entered) was the best predictor for females.

Support for the finding that adherence efficacy did not play a significant role in the prediction of adherence for women, is found in research by Poag and McAuley (1992). They examined the relationship between goals, efficacy, importance and



exercise behaviour and found that although adherence efficacy predicted intensity of exercise, it was not related to the frequency of participation.

In order to determine the construct validity of the PSE scale, Ryckman et al. (1982) compared it with the Taylor Manifest Anxiety Scale that assesses overt symptoms of anxiety. The study found that participants with low physical self-efficacy were highly anxious; moreover, although there was no relation with the subscale PPA, PSPC was significantly related to the anxiety scale.

The significant role that PSPC played in the prediction of adherence for females, could imply that females with good physical self-presentation confidence will more likely adhere to their intended exercise regimen than females who are not so confident (and more anxious). It could further imply that women are more conscious of their physical-self or that physical-self plays a bigger role in exercise adherence than in men. As suggested earlier, this could be due to gender-related cultural expectations. Gender-related socialization could also explain why adherence efficacy predicted adherence for men and not women. Men who scored high on adherence efficacy could have seen adhering to an intended exercise program as a “test” of their male character.

Lirgg, George, Chase and Ferguson (1996) investigated the impact of conception of ability and sex-type of task on self-efficacy. Their finding was that both sex-type of task and conception of ability negatively influenced self-efficacy of females. They further found that males were not influenced by these two factors. Lirgg et al. (1996) suggested that a possible explanation could be that males have more experience with physical tasks and are consequently more confident in their abilities. Conversely, an explanation for the role that PSPC played in women's adherence could be that women saw exercising at the gymnasium as a predominantly male task and that they had a low perception of their ability.

In conclusion, the results of the current study have certain practical and theoretical implications. Firstly, self-efficacy and outcome expectancy are theories within the

social learning theory. It can therefore be influenced, changed and even created. This fact has implications for the exercise and fitness industry. If self-efficacy beliefs are consistently shown as a positive contributor towards participation, then exercise programs must employ elements that will enhance efficacy beliefs, for instance, by altering participants' expectations and self-efficacy at the start of an exercise program.

Secondly this study lends further support and explanation of the self-efficacy theory. Although for this sample, physical self-efficacy was found to be a better predictor than adherence efficacy, it does not in any way implicate that adherence efficacy should be ignored in adherence research. Where physical self-efficacy is an indication of efficacy beliefs on the generality dimension, adherence efficacy indicates efficacy on the strength dimension.

Lastly it is clear that a standardized instrument for assessing outcome expectations based on the self-efficacy theory is needed. Without it, no comparative studies are possible.

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## **Appendix A Measurement Instruments (English)**

### English Questionnaire

Section A	Adherence self-efficacy scale (AES)
Section B	Physical self-efficacy scale (PSE)
Section C	Outcome expectancy scale (OES)
Section D	Item to measure intended exercise frequency

This questionnaire is part of a research study on the factors that influence exercise behaviour. By taking part you can contribute to research in the fitness industry. Participation in this study is voluntarily and entails that you complete the questionnaire honestly. The completed questionnaire will be collected from you again. The questionnaire should not take longer than 15 minutes to complete. All the information will be handled as **strictly confidential**.

Name or Membership number: \_\_\_\_\_

Sex:  male  female

Age: \_\_\_\_\_ years

Were you a member of any other gymnasium during the past year?  Yes  No

**SECTION A**

Read each statement below and decide how much you agree or disagree with each of them.

Cross (✕) the appropriate box on the right.

I could exercise:	strongly agree	agree	slightly agree	slightly disagree	disagree	strongly disagree
1. when tired.						
2. during or following a personal crisis.						
3. when feeling depressed.						
4. when feeling anxious.						
5. during bad weather.						
6. when slightly sore from the last time I exercised.						
7. when on vacation.						
8. when there are competing interests (like my favourite TV show).						
9. when I have a lot of work to do.						
10. when I have not reached my exercise goals.						
11. when I don't receive support from my family/friends.						
12. when I have not exercised for a prolonged period of time.						
13. when I have no one to exercise with.						
14. when my schedule is hectic.						
15. when my exercise workout is not enjoyable.						

**SECTION B**

Read each statement below and decide how much you agree or disagree with each of them.  
 Cross (x) the appropriate box on the right.

	strongly agree	agree	slightly agree	slightly disagree	disagree	strongly disagree
1. I have excellent reflexes.						
2. I am not agile and graceful.						
3. I am rarely embarrassed by my voice.						
4. My physique is rather strong.						
5. Sometimes I don't hold up well under stress.						
6. I can't run fast.						
7. I have physical defects that sometimes bother me.						
8. I don't feel in control when I take tests involving physical dexterity.						
9. I am never intimidated by the thought of a sexual encounter.						
10. People think negative things about me because of my posture.						
11. I am not hesitant about disagreeing with people bigger than I.						
12. I have poor muscle tone.						
13. I take little pride in my ability in sports.						
14. Athletic people usually do not receive more attention than I.						
15. I am sometimes envious of those better looking than myself.						
16. Sometimes my laugh embarrasses me.						
17. I am not concerned with the impression my physique makes on others.						
18. Sometimes I feel uncomfortable shaking hands because my hand is clammy.						
19. My speed has helped me out of some tight spots.						
20. I find that I am not accident prone.						
21. I have a strong grip.						
22. Because of my agility, I have been able to do things that many others could not do.						

Ryckman, Robbins, Thornton and Cantrell (1982)



## SECTION C

The following is a list of goals or benefits that you may want to receive from participation in exercise.

- a. Please rate the **value** that you attach to each goal or benefit.
- b. Now also rate the **probability** that you will attain this goal.

Cross (\*) the appropriate boxes.

### 1. Increase fitness

Value that I attach to this goal through exercise:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely Very likely

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

### 2. Improve appearance

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely Very likely

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

### 3. Increase strength

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely Very likely

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

### 4. Improve self-confidence

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely Very likely

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

### 5. Learn new skills

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely Very likely

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

### 6. Attaining a sense of accomplishment

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely Very likely

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

**7. Weight control**

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely 

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

 Very likely

**8. Improve social life**

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely 

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

 Very likely

**9. Other goals (if any):** \_\_\_\_\_

Value that I attach to this goal:

Little value 

1	2	3	4	5	6
---	---	---	---	---	---

 Great value

Likelihood that I will attain this goal through exercise:

Very unlikely 

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

 Very likely

OES

**SECTION D**

How many times **per week**, during the next six weeks, do you intend to exercise at the gymnasium?

Cross (x) the appropriate boxes.

<b>Week 1</b> 28 Sep- 3 Oct	<b>less than once</b>	1	2	3	4	5	6	7 or more
<b>Week 2</b> 5 Oct- 10 Oct	<b>less than once</b>	1	2	3	4	5	6	7 or more
<b>Week 3</b> 12 Oct- 17 Oct	<b>less than once</b>	1	2	3	4	5	6	7 or more
<b>Week 4</b> 19 Oct- 24 Oct	<b>less than once</b>	1	2	3	4	5	6	7 or more
<b>Week 5</b> 26 Oct- 31 Oct	<b>less than once</b>	1	2	3	4	5	6	7 or more
<b>Week 6</b> 2 Nov- 7 Nov	<b>less than once</b>	1	2	3	4	5	6	7 or more

Thank you for your time

Enquiries: Dawie Malherbe ☎ 887 4362

## **Appendix B**

### **Measurement Instruments (Afrikaans)**

#### **Afrikaanse Vraelys**

- Afdeling A Adherence self-efficacy skaal (AES)
- Afdeling B Physical self-efficacy skaal (PSE)
- Afdeling C Outcome expectancy skaal (OES)
- Afdeling D Item om beplande oefenfrekwensie te meet.



Hierdie vraelys is deel van 'n navorsingstudie oor die faktore wat oefentendense beïnvloed. Deur deel te neem kan u 'n waardevolle bydrae lewer tot navorsing in die fiksheidsbedryf. Deelname aan hierdie studie is vrywillig en behels slegs dat u die vraelys eerlik invul. Die vraelys sal weer by u afgehaal word. Die invul van die vraelys behoort nie langer as 15 minute te neem nie. Al die inligting in hierdie vraelys word **streng vertroulik** hanteer.

Naam of Lidnommer: \_\_\_\_\_

Geslag:

Ouderdom: \_\_\_\_\_ jaar

Was u gedurende die afgelope jaar lid van 'n ander gimnasium?

**AFDELING A**

Lees telkens die stelling en besluit in hoe mate u daarmee saamstem of verskil.  
Maak 'n kruisie (✗) in die toepaslike blokkie aan die regterkant.

Ek kan oefen:	stem sterk saam	stem saam	stem effens saam	verskil effens	verskil	verskil sterk
1. wanneer ek moeg is.						
2. tydens of na 'n persoonlike krisis.						
3. wanneer ek bedruk voel.						
4. wanneer ek angstig is.						
5. tydens slegte weer.						
6. wanneer ek effens seer is van die laaste oefensessie.						
7. wanneer ek met vakansie is.						
8. wanneer daar ander interessante dinge is om te doen (soos my gunsteling TV program).						
9. wanneer ek baie werk het om te doen.						
10. wanneer ek nie my oefendoelwitte bereik het nie.						
11. wanneer ek nie ondersteuning van my familie/vriende kry nie.						
12. wanneer ek vir 'n geruime tyd nie geoefen het nie.						
13. wanneer ek niemand het om mee saam te oefen nie.						
14. as my dagprogram woensdag is.						
15. wanneer my oefensessie nie genotvol is nie.						

<b>AFDELING B</b>
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Lees telkens die stelling en besluit in hoe mate u daarmee saamstem of verskil.  
Maak 'n kruisie (x) in die toepaslike blokkie aan die regterkant.

	stem sterk saam	stem saam	stem effens saam	verskil effens	verskil	verskil sterk
1. Ek het uitstekende reflekse.						
2. Ek is nie rats en grasieus nie.						
3. Ek word selde verleë oor my stem.						
4. My liggaamsbou is redelik sterk.						
5. Soms sukkel ek om druk goed te hanteer.						
6. Ek kan nie vinnig hardloop nie.						
7. Ek het fisiese gebreke wat my soms hinder.						
8. Ek voel nie in beheer wanneer ek toetse aflê wat fisieke behendigheid vereis nie.						
9. Ek voel nooit geïntimideer deur die idee van 'n seksuele ervaring nie.						
10. Mense dink negatiewe dinge van my vanweë my postuur.						
11. Ek huiwer nie om van mening te verskil met mense wat groter as ek is nie.						
12. Ek het 'n swak spiertonus.						
13. Ek is selde trots op my vermoëns in sport.						
14. Atletiese persone kry nie gewoonlik meer aandag as ek nie.						
15. Ek is soms afgunstig teenoor ander wat beter lyk as ek.						
16. Die manier hoe ek lag maak my soms verleë.						
17. Ek is nie besorg oor die indruk wat my liggaamsbou op ander maak nie.						
18. Soms voel ek ongemaklik om hand te skud omdat my hand klam is.						
19. My spoed het my al uit 'n paar moeilike situasies gehelp.						
20. Ek is nie ongelukbehep nie.						
21. Ek het 'n sterk greep.						
22. My ratsheid het my al in staat gestel om te doen wat baie ander nie kon doen nie.						

Ryckman, Robbins, Thornton and Cantrell (1982)



## AFDELING C

Hieronder is 'n lys van doelwitte of voordele wat u moontlik uit u oefeningdeelname sou wou kry.

- a. Beoordeel asseblief die **waarde** wat u aan elke doelwit of voordeel heg.
- b. Beoordeel nou ook die **waarskynlikheid** dat u die doelwit sal behaal.

Maak 'n kruisie (\*) in die toepaslike blokkies.

### 1. Verbeter fiksheid

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik

Hoogs waarskynlik



### 2. Verbeter voorkoms

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik

Hoogs waarskynlik



### 3. Verhoog krag

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik

Hoogs waarskynlik



### 4. Verbeter selfvertroue

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik

Hoogs waarskynlik



### 5. Leer nuwe vaardighede aan

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik

Hoogs waarskynlik



### 6. Behaal 'n gevoel van bevrediging

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik

Hoogs waarskynlik



**7. Massa kontrole**

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik 

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
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 Hoogs waarskynlik

**8. Verbeter sosiale lewe**

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik 

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
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 Hoogs waarskynlik

**9. Ander doelwitte (indien enige):** \_\_\_\_\_

Waarde wat ek aan die doelwit heg:

Min waarde 

1	2	3	4	5	6
---	---	---	---	---	---

 Groot waarde

Waarskynlikheid dat ek die doelwit deur oefening sal behaal:

Baie onwaarskynlik 

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

 Hoogs waarskynlik

OES

**AFDELING D**

Hoeveel keer per week, vir die volgende ses weke, is u van voorneme om by die gimnasium te oefen?

Maak 'n kruisie (x) in die toepaslike blokkies.

<b>Week 1</b> 28 Sep- 3 Okt	minder as een keer	1	2	3	4	5	6	7 of meer
<b>Week 2</b> 5 Okt- 10 Okt	minder as een keer	1	2	3	4	5	6	7 of meer
<b>Week 3</b> 12 Okt- 17 Okt	minder as een keer	1	2	3	4	5	6	7 of meer
<b>Week 4</b> 19 Okt- 24 Okt	minder as een keer	1	2	3	4	5	6	7 of meer
<b>Week 5</b> 26 Okt- 31 Okt	minder as een keer	1	2	3	4	5	6	7 of meer
<b>Week 6</b> 2 Nov- 7 Nov	minder as een keer	1	2	3	4	5	6	7 of meer

Baie dankie vir u moeite

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