



Individual differences in exercise intentions: The roles of stress and life satisfaction

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Abstract

Many individuals intend to exercise but fail to link this exercise-intention to actual exercise behavior. The aim of the current study was therefore, to examine the individual differences in exercise-intention and the roles of stress and life satisfaction in it. Measures of all three constructs were obtained by the questionnaire booklet which consists of Behavioral Regulation in Exercise Questionnaire, BREQ-2 (Markland & Tobin, 2004); Stress Questionnaire (International Stress Management Association-UK, 2013) and Satisfaction with Life Scale, SWLS (Diener et.al.,1985) from a sample of 110 professionals working in the state of Karnataka, India. Exercise-intention constituted the criterion variable whilst stress and life-satisfaction were treated as predictor variables. Multiple regression analyses were employed. Results shows that stress is a significant negative predictor of exercise-intention ($r = -.167$; $p < 0.05$), life-satisfaction is a significant positive predictor of exercise-intention ($r = .349$; $p < 0.01$) and a combination of stress and life-satisfaction predict significant variance in exercise-intention ($R^2 = .123$; $p < .001$). It was concluded that stress and life-satisfaction leads to individual differences in exercise-intention.

Keywords: exercise- intention, stress, life satisfaction

Introduction

Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness (Whaley et. al.2006) [21]. Regular physical activity is an important factor in the prevention of illness and promotion of physical and mental wellbeing. An increasing number of studies have documented multiple physical and psychological benefits of exercise for normal adults (Silverthorne et al., 2012; Hicks et al. 2011) [16, 8], as well as those with chronic illness such as cancer (Hicks et. al. 2011) [8] it supports rehabilitation from illness (Schindler et. al., 2010; Silver throne et.al., 2012) [15] and also exercise seems to be the most efficient strategy with respect to healthy aging (Awick e.t al. 2019; Sterbova et. al., 2009) [1, 17]. Although the benefits of exercise are becoming increasingly recognized, a great proportion of people do not exercise. Many individuals intend to exercise but fail to link this exercise-intention to actual exercise-behavior. This failure of conversion of exercise-intention into actual exercise behavior could be explained with the concept of "implementation intention". Implementation intentions (originally proposed by Gollwitzer 1990, 1993 as part of the model of action phases) [6, 7] are self-regulatory, strategic plans that specify when, where, and how to perform behavior. Research has found that when exercise intentions are supplemented with implementation intentions they are more likely to be enacted (Milne et. al., 2002) [3], exercise frequency enhanced, total time spent exercising increased, and fitness improvements also increased (Prestwich et. al., 2003) [14]. Psychological stress refers to the consequence of the failure of an organism – human or animal – to respond adequately to mental, emotional or physical demands, whether actual or imagined of their environment (Selye, 1956) [18].

Stress is detrimental to quality of life, exercise is beneficial and several researches reported that exercisers reported less stress, fewer depressive symptoms and greater satisfaction with physical functioning (Latimer et al. 2005; Hicks et al., 2011) [11, 8]. But during times of high stress individuals are less likely to follow through with an intention to maintain a healthy way of life. Perceived stress has, however, been found to reduce both the number of exercise sessions and the time spent exercising each week (Awick et. al., 2019; Jouper & Hassemen, 2008) [1, 10]. Life satisfaction is a cognitive and judgmental process and is defined as a global evaluation by the person of his or her life (Diener et. al., 1985) [4]. Health-promoting activities during leisure time, especially, exercise has found to have a significant influence on life satisfaction (Cheung et. al, 2009) [3]. Exercisers were found to be more satisfied with their life and happier than non-exercisers at all ages (Stubbe et. al., 2007) Several researches had reported the interplay of stress, life-satisfaction and exercise-intention with each other (Jouper & Hassmen, 2008) [10]. Schindler (2010) [15] in his study of relations among exercise patterns, life satisfaction, and Post Traumatic Stress Disorder related symptoms found that consistent vigorous exercise is indeed related to greater life satisfaction and to fewer symptoms of Post-Traumatic Stress Disorder. The direct relationship between physical activity and quality of life and the inverse relationship between stress and quality of life are noteworthy (Cheung et. al., 2009) [3]. On the basis of the empirical evidences and the theoretical background presented the current research aims to investigate the differences in exercise intentions and the roles of stress and life satisfaction in it. The study looked at three specific objectives with three corresponding hypotheses. The first objective was to study

roles of stress on exercise intentions, its corresponding hypothesis was, H_1 : *Stress will be negatively associated with the exercise intentions*. The second objective was to study the roles of life satisfaction on exercise-intentions, and its corresponding hypothesis was, H_2 : *Life Satisfaction will be positively associated with the exercise intentions*. The third objective was to study the interplay of combined roles of stress and life-satisfaction on exercise-intentions and its corresponding hypothesis was, H_3 : *A combination of Stress and Life Satisfaction will predict significant variance in the Exercise Intentions*.

Methods

The current study employed both cross-sectional and co-relational design with stress and life satisfaction conceptualized as predictor variables, and exercise intentions was treated as a criterion variable. The sample consisted of 110 professionals who were working in Karnataka state, aged between 23 years to 65 years. The study was undertaken using non random sampling techniques such as convenience and snowball sampling. An informed consent sheet and the socio-demographic sheet that included the participant's age, gender, marital status, location, occupation and qualification was prepared. The current study used Behavioral Regulation in Exercise Questionnaire, BREQ-2 (Markland & Tobin, 2004) [12], Stress Questionnaire designed by International Stress Management Association, UK (2013) [9] and The Satisfaction with Life scale (SWLS) (Diener et. al., 1985) [4] to access the variables (refer Appendix I- A, B, C). All the three tools have high reliability and validity. The data was collected online through Google Forms, a questionnaire was constructed for the purpose which includes the informed consent, socio-demographic details followed by the all the three tools. The collected data was scored and interpreted based on the norms specified. The data for all the variables (exercise-intention, stress and life-satisfaction) was put into SPSS-16.0 for further analysis.

Results

The sample of the study was 110 professionals including males 49 (44.5%) and females 61 (55.5%) aged between 23yrs-65yrs ($M=44.76$, $SD=12.62$) working in the Karnataka State of India. Descriptive Analysis of the total sample ($N=110$) shows that the mean score for criterion variable i.e. exercise intention, $M=43.56$, $SD=24.45$ reflects that the participants has the high intention to indulge into the physical activity; for the first predictor variable stress, the $M=9.85$, $SD=4.74$ and for the second predictor variable, life-satisfaction $M=23.26$, $SD=6.15$, which reflect that participants are experiencing low level of stress and are quite satisfied with their life (refer Table-1). This goes in consistent with the expectation that exercise-intention is high with low stress and high feelings of wellness and satisfaction with life (see figure A). After that Pearson product-moment correlation coefficient was carried out between the exercise-intention, stress and life-satisfaction variables, to establish the direction and magnitude of association between them (refer table 2). The correlation coefficient between criterion variable, exercise-intention and the first predictor variable, stress was calculated to be $r = -.167$; $p < 0.05$ which clearly indicate the significant negative

correlation between them, which means that increase in the level of stress will lead to decrease in intention to indulge in exercise. Whereas correlation coefficient between criterion variable, exercise-intention and the second predictor variable, life-satisfaction was calculated to be $r = .349$; $p < 0.01$, which clearly indicate the significant positive correlation between them, which means that as the feeling of satisfaction with life increases in individual, it subsequently lead to an increase in their intention to indulge in exercise. Results shown by the Pearson product-moment correlation coefficient seems to provide support for H_1 =*stress will be negatively associated with the exercise intentions* and for H_2 =*life satisfaction will be positively associated with the exercise intentions*. Then multiple regression analysis was performed to establish the combined effect of stress and life-satisfaction on exercise intention (see table 3). Multiple regression analysis reflects that both the predictor variables, stress and life satisfaction together predicted 12.3% of the variation in the exercise-intention ($R^2 = 0.123$). The predictor variable life satisfaction is found to be significantly related to the exercise-intention ($\beta = .369$, $t = 3.401$, $p = .001$), which means that for every increase of 1 on the life-satisfaction exercise-intention increases by .369 (refer table 3). Thus, the stronger predictor of variations in exercise-intention is found to be life-satisfaction. Results shown by multiple regression analysis are providing support for H_3 =*combination of stress and life satisfaction will predict significant variance in exercise-intention*.

Discussion

Several researchers have detected associations between exercise-intention, stress and life satisfaction (Cheung et. al. 2009; Bastug & Duman, 2010; Latimer et al. 2005) [3, 2, 11]. The aim of the current study was to investigate individual differences in exercise intentions and the roles of stress and life satisfaction in it. Stress is found to have bi-directional relationship with exercise; on one hand exercise is found to reduce stress (Latimer et al. 2005; Hicks et al. 2011) [11, 8]; on the other hand, stress is found to reduce exercise-intention (Awick et. al. 2019; Jouper & Hassmen, 2008) [1, 10]. In consistent with the previous researches, current study also found significant negative correlation between stress and exercise-intention ($r = -.167$; $p < 0.05$). This inverse relationship between stress and exercise-intention can be explained with the help of *Tense-Energy Model (TEM)* (Thayer 1996, 2001) [19, 20]. The tense-energy model divides tension and energy into dichotomies; tense – calmness and energy – tiredness. Combining dichotomies produces four sub-categories: *tense energy* (high stress and high energy), *calm energy* (low stress and high energy), *tense tiredness* (high stress and low energy), and *calm tiredness* (low stress and low energy) (refer figure B). According to the Tense-Energy Model, in the *calm energy* state, a person experiences low stress and high energy, thus physical activities are not avoided, and exercises are performed with focused attention. Thus, low stress is found to be associated with increased exercise-intention. On the other hand, if a person is in *tense tiredness* state, he/she will be experiencing high stress and will feel low energy to indulge in any physical activity or exercise. Thus, high stress is associated with decreased

exercise-intention. The tense-energy model maintained that the purpose of healthy exercise is to reach the calm energy state (high energy –low stress) and a psychological feeling of wellness (mood improvements). Thayer (1996) ^[19] suggest that exercise, both more vigorous physical activities such as jogging and swimming as well as low intensity exercise as yoga and tai chi may be used to reduce stress and increase energy, to reach a state of calm energy. Previous literatures have shown bi-directional positive relationship between life-satisfaction and exercise-intention; on one hand, involvement in physical activity is found to increase ones' satisfaction with life (Bastug & Duman ,2010; Gomes et.al., 2010)on the other hand, life-satisfaction is also found to enhance exercise intentions(Sterbova, 2009, Schindler, 2010). In consistent with previous researches, current study also found that exercise-intention is correlated significantly and positively with life-satisfaction ($r = .349$; $p < 0.01$).The impact of Life-satisfaction on exercise-intention could also be explained with the help of Tense Energy Model (TEM) (Thayer, 2001) ^[20]. According to Tense Energy Model, when an individual is in *calm energy state* (low stress and high energy) he feels satisfied and contented with his/her life and the willingness to indulge in physical exercise is increased. Therefore, life-satisfaction is found to have positive significant impact on the individual's exercise-intention. In consonant with previous researches (Jouper & Hassmen, 2008; Cheung et. al. 2009) ^[10, 3], current study was able to show that the combination of stress and life-satisfaction has significant impact on the exercise-intention ($R^2 = .123$ $F = 7.476$; $p < .001$), it reflects that combination of stress and life satisfaction explain 12.3% of the variation in the exercise-intention of the participants. This could also be explained with the help of Thayer's (2001) ^[20] Tense Energy Model (TEM), really good moods such as happiness and enjoyment have high energy and low stress, whereas bad moods such as anxiety and depression have high stress and low energy (TEM; Thayer, 1996, 2001) ^[19, 20]. According to Thayer (2001) ^[20], in the *calm state*, in which individual experiences the combination of low stress and high feelings of life-satisfaction intention to exercise is high. Therefore, the combination of life-satisfaction and low stress is found to exert significant impact on the exercise-intention.

Limitations and Directions for Future Research

The current study had few limitations, the sample consists of participants with wide age range from 23 years to 65 years. Age may exert influence on the experience and concept of life-satisfaction and level of stress. Also the sample consists of people from different professions who may have different job-related and/or organizational stress and different aspirations or achievements leading to differences in the levels of stress and life-satisfaction as well. This should be taken into consideration in future researches, which can be conducted with the same age- group either the younger, middle-aged or older group of participants and with the people from same professional background. A reason that suggests that these problems are not widespread in the study because the findings depicted by the current study are found to be consistent with previous researches. Additional research could be done to further examine the reasons for exercise-intentions failure and whether less rigid exercise plans enhance the likelihood of the

implementation of that exercise regime OR whether light physical activities / leisure-time activities as exercise has greater chances of being implemented.

Implications of the study

Despite the above mentioned limitations, the present study contributes to the exercise- intention literatures, by analyzing the impact of stress and life-satisfaction on exercise-intention among professionals. Results were found to be consistent with the previous researches (Latimer et. al. 2004, 2005; Jouper & Hassmen, 2008 ; Cheung et. al. 2009; Baştug & Duman, 2010; Gomes et.al., 2014) ^[11, 10, 3, 2, 5], which have shown that there will be an inverse relationship between exercise-intention with stress; whereas life- satisfaction is found to exert positive influence on the exercise-intention. Practical implications of the study suggest that the exercise-intention can be enhanced by lowering the level of stress and enhancing life-satisfaction. The present study suggests that usually individuals' exercise plans backfire thus; organizations could promote the benefits of exercise and provide outlets for exercise, without giving employees the added pressures of setting exercise goals.

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