IJPSR (2019), Volume 10, Issue 11 **(Research Article)**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 02 March 2019; received in revised form, 29 May 2019; accepted, 14 July 2019; published 01 November 2019

ASSESSING THE EFFECT OF FARTLEK TRAINING ON PERCEIVED WELLNESS OF UNIVERSITY STUDENTS OF SAUDI ARABIA: A RANDOMIZED CONTROLLED TRIAL

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Keywords:

Wellness, Fartlek-training, Perceived, University students

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ABSTRACT: Wellness is described as positive health of an individual as indicated by the quality of life and a sense of well-being. This research aimed to assess the effect of supervised fartlek training on Perceived Wellness of University Students of Saudi Arabia. A sample of forty students enrolled in various courses of KFUPM was selected for the study; the mean age was 18.52 ± 0.599 years. Two groups were formed randomized into intervention (n=20) employed 16 weeks of supervised whistled fartlek training program and control group (n = 20) carried out their daily task and did not participate in any exercise program. The training session was conducted twice a week, and the duration of each session lasted for 45 min. All students were administered the Perceived Wellness Survey to assess their wellness. Subjects involved in regular physical activity for last 6 months were included for the study; obese students (BMI≥ 30 kg/m^2) and who are on serious illness and medication, suffered cardio-vascular problems were excluded. At baseline demographic data for all the participants were collected, including age, height, weight, how often engaged in physical activity. The statistical tool employed was an analysis of covariance to find out if any significant difference between groups after 16 weeks of supervised training. Wellness factors exhibited higher mean scores on the post-intervention group. Significant differences were observed after 16 weeks of fartlek training on psychological, emotional, physical, and spiritual wellness. Wellness composite scores improved significantly in the intervention group. Fartlek training program effectively improved the total wellness of undergraduate students.

INTRODUCTION: Wellness is a "holistic, self-driven process involving personal lifestyle and multiple dimensions of well-being and is a way of living that values health, balance, and the minimization of unhealthy behaviors" [1, 2]. The holistic dimensions are physical, psychological, emotional, intellectual, spiritual, social, occupational, and environmental [3, 4, 5].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.10(11).5051-56

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(11).5051-56

Perceived wellness refers to the individual's overall evaluation of health as an indicator of general physical and mental status [6]. According to Spurr *et al*., 2012 [4,] physical wellness explains the health habits, preventive health care services, and levels of physical activity. The intellectual dimension defined academic performance, critical thinking, and activities supporting the development of intellectual capabilities [7].

The emotional wellness communicated to feel and control their emotions [8], and social dimension connected to sharing, caring and maintaining the relationships with family members and peers and the spiritual dimension described their personal belief and purpose of life, distinct from faith and

religion [4]. The wellness literature emphasizes definite features like lifestyle behaviors that go beyond basic health and self-responsibility of wellness [9, 10] the multi-dimensionality of wellness [11, 12] and the development of better quality of life [13, 14]. Wellness research revealed the prevalence of unhealthy behaviors among college students, which demonstrated increased concerns related to weight gain [15] and a decline in the frequency of vigorous physical activity [16].

College is often considered prime time for individuals to begin their self-discovery and normally improve personal and professional development. As students matriculate into college, they frequently experience significant changes to their physical, mental, emotional, and spiritual well-being [17]. These changes can cause stress among the undergraduate students with academic pressures and adjustment concerns [18], interpersonal concerns [19], difficulties of integrating into the new environment, and time management. Other stressors include greater personal responsibility, limited family, and social support. This new lifestyle can negatively impact students' health and well-being. While looking at the reviews, to our knowledge, very few research works have been done in the educational settings about wellness in Saudi Arabia. Thus, keeping in mind, the researchers proposed a study to assess the effect of fartlek training on perceived wellness of university students.

MATERIALS AND METHODS:

Participants: For this study, forty undergraduate students enrolled from various courses at King Fahd University of Petroleum and Minerals (KFUPM), Dhahran were randomly selected. Subjects were invited to voluntarily participate in this study. Subjects regularly doing physical activity for the last 6 months were included, and the obese students (BMI≥ 30 kg/m^2) and students who are on serious illness and medication, suffered cardio-vascular problems were excluded.

Study Design: Two groups randomized as intervention (n=20) and control (n=20) were formed. The intervention groups performed 16 weeks of supervised fartlek training protocol, and the control group was instructed to continue their daily routine and no exercise program. The duration of the training program was 45 min per session twice a week. Both groups were administered Perceived Wellness Survey [8] in the classroom settings before and after 16 weeks of the intervention program. Participation in the survey was entirely voluntary, and written informed consent was taken from each participant. The participants have assured the confidentiality of the data, and the ethical approval was obtained from the Research Committee, Deanship of Scientific Research, KFUPM (IN141041).

Measures: Perceived Wellness Survey [8] was employed to measure students' perceived wellness. The subjects were given the English version of multi-dimensional Perceived Wellness Survey which has 36-items scored on a 6-point Likert scale, 1- "Very strongly disagree" to 6- "Very strongly agree." The scale measures the physical, social, emotional, intellectual, psychological, and spiritual dimensions of well-being. The higher scores reveal greater wellness in each of the sub-scales. PWS established high internal reliability (alpha =.91) and consistency in the sub-scales.

Sample items from each dimension include, "I am always optimistic about my future" (psychological), "I sometimes think I am a worthless individual" (emotional), "I will always seek out activities that challenge me to think and reason" (intellectual), "My friends will be there for me when I need help" (social), "My physical health is excellent" (physical), and "I believe that there is a real purpose for my life" (spiritual). Wellness Composite score was calculated by using the formula, Wellness Magnitude/Wellness Balance.

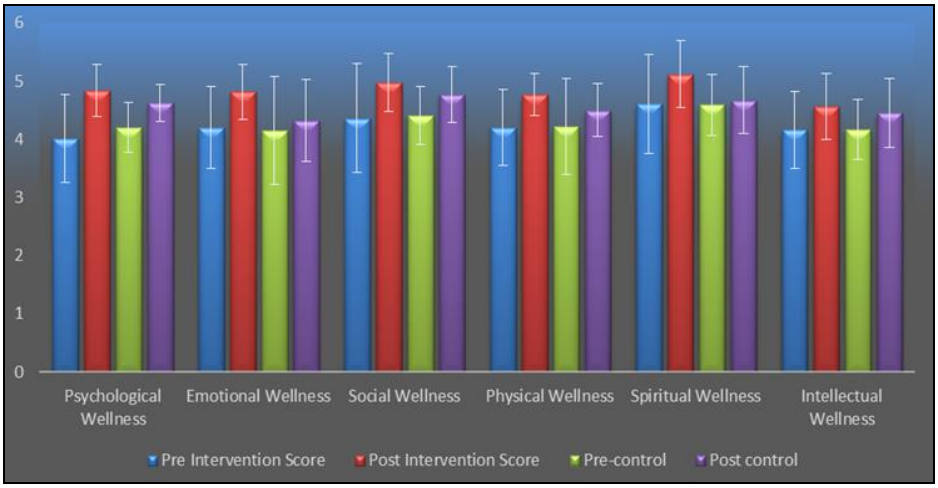
Intervention: Under the scholars' supervision, 16 weeks of whistle fartlek training, [20] programs were given to the intervention group. Fartlek training starts with 10 min of warm-up, then a pyramid session of running at varied speed for 4 min, 3 min, 2 min, 1 min then 2 min, 3 min and 4 min with 1 min jogging/walking recovery between every varied run. When whistle blown participants run fast until the next whistle, and it continues in each pyramid session. Training session concludes with 10 min of cooling down exercises. The training was conducted on a synthetic track, and logbook was maintained for attendance.

Statistical Analysis: Descriptive statistics were calculated for baseline scores of demographic characters, perceived wellness factors intervention, and control groups. Normality of the data was checked through Shapiro Wilks test. ANCOVA was used to find out if any significant difference between groups after 16 weeks of intervention training. For statistical analyses, SPSS-16 software was used. A $p<0.05$ was considered statistically significant.

RESULTS: Table 1 expressed the mean and standard deviation (pre and post) scores of wellness factors of intervention and control group.

TABLE 1: MEAN AND STANDARD DEVIATION OF PRE-AND POST-SCORES OF INTERVENTION AND CONTROL GROUP

Factors	Pre-Intervention Score	Post-Intervention Score	Pre-Control	Post-Control
Wellness Composite Score	22.498 ± 0.020	25.639 ± 0.174	22.764 ± 0.189	24.214 ± 0.163
Psychological Wellness	4.016 ± 0.754	4.841 ± 0.447	4.208 ± 0.428	4.625 ± 0.314
Emotional Wellness	4.200 ± 0.704	4.816 ± 0.474	4.158 ± 0.928	4.325 ± 0.701
Social Wellness	4.366 ± 0.934	4.975 ± 0.505	4.416 ± 0.497	4.775 ± 0.484
Physical Wellness	4.208 ± 0.653	4.766 ± 0.364	4.216 ± 0.823	4.500 ± 0.458
Spiritual Wellness	4.608 ± 0.857	5.116 ± 0.577	4.592 ± 0.528	4.675 ± 0.578
Intellectual Wellness	4.166 ± 0.660	4.558 ± 0.567	4.166 ± 0.515	4.458 ± 0.594



	Psychological Wellness	Emotional Wellness	Social Wellness	Physical Wellness	Spiritual Wellness	Intellectual Wellness
pre	4.016 ± 0.754	4.200 ± 0.704	4.366 ± 0.934	4.208 ± 0.653	4.608 ± 0.857	4.166 ± 0.660
post	4.841 ± 0.447	4.816 ± 0.474	4.975 ± 0.505	4.766 ± 0.364	5.116 ± 0.577	4.558 ± 0.567
pre	4.208 ± 0.428	4.158 ± 0.928	4.416 ± 0.497	4.216 ± 0.823	4.592 ± 0.528	4.166 ± 0.515
post	4.625 ± 0.314	4.325 ± 0.701	4.775 ± 0.484	4.500 ± 0.458	4.675 ± 0.578	4.458 ± 0.594

FIG. 1: MEAN AND STANDARD DEVIATION OF WELLNESS FACTORS INTERVENTION AND CONTROL GROUP

TABLE 2: ANALYSIS OF COVARIANCE AFTER 16 WEEKS OF FARTLEK TRAINING

			Baseline Scores (pre)		After 16 weeks of intervention (post)			
Factors	**Group**	**N**	**M**	**SD**	**M**	**SD**	**F (1,37)**	**p-value**
Psychological	Intervention	20	4.016	0.754	4.841	0.447	4.684	0.037*
Wellness	Control	20	4.208	0.428	4.625	0.314		
Emotional	Intervention	20	4.200	0.704	4.816	0.474	9.176	0.004*
Wellness	Control	20	4.158	0.928	4.325	0.701		
Social	Intervention	20	4.366	0.934	4.975	0.505	1.084	0.305
Wellness	Control	20	4.416	0.497	4.775	0.484		
Physical	Intervention	20	4.208	0.653	4.766	0.364	4.886	0.033*
Wellness	Control	20	4.216	0.823	4.500	0.458		
Spiritual	Intervention	20	4.608	0.857	5.116	0.577	6.699	0.014*
Wellness	Control	20	4.592	0.528	4.675	0.578		
Intellectual	Intervention	20	4.166	0.660	4.558	0.567	0.333	0.568
Wellness	Control	20	4.166	0.515	4.458	0.594		

*Statistically significant

Table 2 demonstrated ANCOVA results which revealed that significant differences between intervention and control groups after 16 weeks of fartlek training in the following factors; psychological wellness ($F_{1,37}$ = 4.684, p = 0.037), emotional wellness ($F_{1,37}$ = 9.176, p = 0.004), physical wellness ($F_{1,37}$ = 4.886, p = 0.033) and spiritual wellness ($F_{1,37}$ = 6.699, p = 0.014). There was no statistically significant differences observed in the post intervention scores on social wellness ($F_{1,37}$ = 1.084, p = 0.305) and intellectual wellness ($F_{1,37}$ = 0.333, p= 0.568).

DISCUSSION: Education of health and wellness to college students are considered as a valid indicator of future health. Promoting a healthy transition into adulthood during college may be a useful approach to increasing wellness; thus, universities have a unique opportunity to influence students' overall wellness. This research aimed to assess the effect of 16 weeks of supervised fartlek training on Perceived Wellness of University Students of Saudi Arabia.

Wellness has six distinct interrelated components [21,] and the results revealed that undergraduate students of KFUPM improved their physical, psychological, emotional, and spiritual wellness factors after 16 weeks of fartlek training. Of the six factors of perceived wellness examined in the current study, physical wellness may be the one of greatest relevance due to its reputation as the most stable component. The results were consistent with the findings reported that physical training established the quality of life and greater perception of physical health [22, 23, 24]. Wellness concept was initiated to improve overall health and physical fitness and knowledge concerning health behavior can affect the quality of life [25, 26].

The emotional dimension estimates the perception of self, self-image, and self-esteem. Emotional wellness communicates to our feelings, expressions, and control of emotions [17]. The findings were compatible with earlier research results, which explained that physical activity in any form improved emotional health[27, 28]. The psychological-dimension epitomizes a state of optimism and positive expectation towards life. Many studies reported that physical training attained psychological benefits [29, 30, 31].

Kilpatrick *et al.*, 2005 [32] reported physical activities to be beneficial to physiological and psychological health; improve emotional health, and create psychological benefits [30] also confirmed the positive effect of exercise on psychological-health [33]. The quality of life has improved significantly, along with the duration of physical activity [34]. Regular engagement in moderate-vigorous exercise / physical activities protects mental and physical health [35].

Spiritual wellness refers to an individual's belief system, their values, and a sense of purpose in life [36] separate from religion, sense of right or wrong, personal beliefs [4]. The results exhibited that the spiritual wellness of the students improved with training, and many studies validated with our findings. Quality of life and psychological health has significantly improved with people who are physically more active and holds better spirituality [34]. In a study, Patneaude [37] explained spiritual wellness plays an important role in the lives of college students and the decisions they make daily regarding the other dimensions of wellness. Students are active in nurturing spirituality in a variety of ways such as volunteer activities for personal and social helping, personal reflection, and prayer.

The present study observed that students did not demonstrate any significant increase in intellectual and social wellness factors after 16 weeks of fartlek training. Intellectual wellness dimension estimates the perception of individuals who are engaged in an optimal amount of intellectual activity and social wellness emphases on providing social support-including the issue of bullying, interaction in the social environment and maintenance of proper relations with their peers and family [4]. In our previous study, we observed that KFUPM students were poor in socializing skills and took time to make friends [38].

CONCLUSION: Based on the findings of this study, 16 weeks of the supervised fartlek training program was effective to improve perceived wellness of KFUPM undergraduate students. The results demonstrated a substantial gain in the perception of physical, psychological, emotional, and spiritual wellness after the training. These results are encouraging, which can bring some

positive, healthy lifestyle changes in university students with specially designed training programs.

ACKNOWLEDGEMENT: The authors acknowledge the support provided by the Deanship of Scientific Research at King Fahd University of Petroleum & Minerals (KFUPM) under Research Grant IN141041.

CONFLICT OF INTEREST: Nil

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How to cite this article:
Antony VC and Tomar R: Assessing the effect of fartlek training on Perceived Wellness of University Students of Saudi Arabia: A randomized controlled trial. Int J Pharm Sci & Res 2019; 10(11): 5051-56. doi: 10.13040/IJPSR.0975-8232.10(11).5051-56.