

THE EFFECTS OF GUIDED SYSTEMATIC AEROBIC DANCE PROGRAMME ON THE SELF-ESTEEM OF ADULTS

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Abstract:

In our research we were seeking answers of the effects of guided, “age-needs specific,” systematic, group aerobic exercise programmes on the self-esteem and self-image of middle-aged women. Fifty three women (ages 48.6 ± 5.1) took part in the study who had not participated in any systematic fitness training and worked in intellectual occupations. We formed two groups, i.e., the experimental (EG) and the control (CG) group. Members of the experimental group ($n=25$) volunteered to participate in a one-year long aerobic dance programme. The remainder formed the control group ($n=28$). We measured self-esteem by the Rosenberg Self-Esteem Scale and self-image by the Tennessee Self-Image Scale. The results of the study showed significant improvements in body image for those middle-aged women who participated in the one-year long aerobic dance exercise programme, while the body images of the control group remained the same. This shows the important intervening role of satisfaction with body image of middle-aged women between systematic aerobic dancing and self-esteem. The one year long systematic aerobic dance programme had a positive effect on self-image, self-esteem, physical condition, and an evaluation of the environment of middle-aged women. On the basis of the results we may conclude that an improved body image can positively influence and stabilize self-esteem. Furthermore, we may assume that the improved self-esteem and self-image can contribute to an improvements of quality in the lives of middle-aged women and it may compensate for the negative effects of the menopausal period.

Key words: *middle-aged women, aerobic dance, self image, body image*

DIE EFFEKTE EINES KONTROLLIERTEN SYSTEMATISCHEN AEROBIC-TANZ-PROGRAMMES AUF DAS SELBSTWERTGEFÜHL BEI ERWACHSENEN

Zusammenfassung:

In diesem Beitrag geht es um ein Aerobic-Trainingsprogramm, das auf das spezifische Lebensalter abgestimmt wurde. Das Training wurde von Frauen mittleren Alters gruppenweise durchgeführt. Die Wirksamkeit des Programms wurde bezüglich des Selbstvertrauens und der Selbstbewertung der Probanden untersucht. Es nahmen 53 Beamtinnen teil, die vorher nicht regelmäßig Sport trieben. Ihr durchschnittliches Alter betrug $48,6 \pm 5$ Jahre. Zur Versuchsgruppe gehörten 25, zur Kontrollgruppe 28 Frauen. Das Trainingsprogramm erstreckte sich über den Zeitraum von einem Jahr. Die Selbstbewertung wurde durch die Skala von Rosenberg getestet. Bei der Messung des Selbstbildes wurde die Skala von Tennessee verwendet. Die Ergebnisse bezüglich der Meinung der Probanden über ihr Körperbild zeigten eine signifikante Verbesserung. Die Zufriedenheit mit ihrem Körperbild spielte eine bedeutende Vermittlungsrolle zwischen dem systematischen Aerobic-Training und der Selbstbewertung. Bei der Kontrollgruppe wurde diesbezüglich keine Veränderung festgestellt. Das einjährige Training hatte einen positiven Einfluss auf die Selbstbewertung: in Bezug auf das Selbstbild, das Selbstvertrauen, den physischen Zustand und ihr Verhältnis zur Umgebung. Das systematische Aerobic-Training hatte einen positiven Einfluss auf das Körperbild von Frauen mittleren Alters. Dadurch wurden die Selbstbewertung und das Selbstbild ebenfalls positiv beeinflusst.

Schlüsselwörter: *Frauen mittleren Alters, Aerobic-Tanz, Selbstbild, Körperbild*

Introduction

Nowadays, fitness training is often discussed from different points of view, more and more people believe that systematic fitness training is essential in preserving health. In prosperous states it can be observed that systematic fitness training is not only the private property of the younger generation, but also belongs to the older generation, who have opportunities to participate in such fitness training, befitting for their special needs as well as are well organized under expert guidance. As a matter of record, the results of much scientific research studies have already proved that systematic fitness training can serve as an excellent tool to slow down the process of aging and improve the quality of life because it has a positive effect on the cardio-respiratory, the neuromuscular, the metabolic and the immune systems as well as on mental health (Jordan, 1993; Shimamoto, Adachi, Takahashi, & Tanaka, 1998).

The mental health of middle-aged women is influenced by particular biological, psychological, and social factors, as, for example, the hormonal changes due to the menopause, changes in roles of motherhood and womanhood, the lack of something to live for, dissatisfaction with one's body image. Self-esteem of middle-aged women can further be impaired by signs of ageing and hormonal and physical changes due to age (for example: weight gain); the young, slender female ideal, propagated by the mass-media also has a strong negative impact (Kovacs, Jakob, & Koop, 2001). At the same time, the work of Hunter and Sundel (1989) revealed that middle age is more a positive period than negative and the majority of middle-aged people are self-confident. The recognition that physical and mental development and health are inseparable progresses slowly. According to Ivan (2001) as a corollary of advancing age of an individual more and more harm, loss and challenge appears thus for this reason more befitting adaptability is required. As a result of this, a person has to adjust to the social and physical demands of his/her environment. The results of Rosenberg and Pearlin (1978) showed a correlation between positive (flexible) self-image and adaptability. The accelerating pace of our world also demands a faster and more resilient adjustment to life. Those whose self-images are stable and tend to be positive can tolerate better the stress of new challenges. Our reactions to challenge depend on self-respect - of what we think of ourselves - on our perception of self-worth and effectiveness. According to Atkinson, Smit and Bemm (2001), the self-image of a well-adjusted person is in harmony with his/her thoughts, experiences and behaviour: those who do not have a rigid self-image have the ability to grow with new experiences and thoughts. Stimuli (stress stimulus) cause responses in the

psychosomatic system. Consequently, there is a close connection between systematic fitness training and adjustment, thus presumably supervised group fitness training may have a positive effect upon the development of self image.

Extensive research was conducted to find the relationship of body image to physiological health and self image. Kovacs and associates (2001) found in their research study that dissatisfaction with body image is the central question, especially of middle-aged women. As a person's motor activity is indispensable in the formation of body image, so in later life cycles motor activity is also a successfully useful developmental tool, as was proven by a large number of studies. In Bartlewski's study (Bartlewski, Van-Raalte, & Brewer, 1996), female college students who took part in a semester-long aerobic dance course had decreased body anguish and their body awareness grew. At the same time, there were no significant changes in the non-participating group. They concluded that participation in aerobics enhances body image for female college students. However, Asci, Kin, & Kosar, (1998) found no correlation between self-esteem and body image in an eight-week long aerobic dance programme of female college students, in comparison with their control group. With all probability the time span of the study was too short, especially if one takes into account the age of the subjects. Li (1994) compared the self-esteem of physically active and inactive female college students and found significantly better results pertaining to body-attractiveness in the active group. The Body-I Relation Questionnaire (Cash, Novy, & Grant, 1994) analysis showed a significantly higher health orientation among the physically active people, as compared to the inactive. Minarikova and Fialova (1997) examined the effects of body image on the development of lifestyle. Their results showed that tuning into physical appearance, figure and fitness are strong motivating factors for a woman of any age in developing an active lifestyle. The significant deviations amongst different groups show the connections between activity levels and personal lifestyle and satisfaction with one's own body, attitudes toward fitness and appropriate nourishment. Loland (1998) examined the correlations between body image and physical activity among active and inactive Norwegian men and women. He examined the apparent differences in body image for 1,555 people between the ages of 18 and 67. He divided the participants into inactive, low, medium, and high activity male and female groups. Women were less satisfied with their body image than men in all four groups. The medium and high activity groups valued their body image more than the low and inactive groups. Skinar, Bullen, & Cheek (1986) examined the effect of endurance development on female body awareness

using 20–30 year old women who took part in a running programme. The results at the end of the programme showed that self-esteem improved with the bodily awareness of the subjects. The results of Rani and Roa's study (1994) showed significantly better body image of an adult yoga group than members of the control group. Thogersen, Fox, & Ntoumans, (2002) examined the role of systematic fitness training in connection with self-esteem, with 239 Danish female participants, amongst whom 88 were between the ages of 51 and 55. He measured self-esteem with the Rosenberg Test. The results showed that systematic fitness training enhances self-assurance and in this process satisfaction with one's body (physique, body weight, health) plays a prominent intermediary part. For a more befitting physical condition, figure and body weight bring about the better self-esteem, self-assurance. At the same time the better figure, health and condition are the outcome of physical activity.

After comparing the relationship between various physical activities and body image, we turned our attention to the examination of body image and body weight pertinent to women over the age of 50. The results of Judisch-Berg's research study (1995) showed that 96% of over-weight women and 46% of average weight women were dissatisfied with their own body image. This data justifies the 1998 results of Loland (1998), who found that women in general are dissatisfied with their body image. Frederick and Shaw (1995) studied the compelling force of body image to participation in aerobic exercise, in connection with young women. Their results showed that in certain cases body image compels a person to participate in free time activity; however body image is not a retarding force in preventing participation either.

Self-esteem (self assurance) is closely connected to the activity of a person and to the success of her/his functioning. It also depends on other people's respect and opinions of her/him. A negative self-image presumes low self-esteem. A positive self-image presents itself as self assurance and good self-knowledge. According to Rogers (1970) women who perceive themselves as strong and competent look at the world differently than women who perceive themselves as weak and clumsy.

Most of the studies investigating the effect of physical activity focused on the changes in physical performance and the health condition of middle-aged women. There is a relatively low number of studies which are aimed at investigating how regular physical activity influences self-image, self-evaluation and self-esteem and their relationships in middle-aged women. Self-esteem is a stable parameter characterizing the psychological and mental health condition of people. However, self-esteem can also be altered. Self-image and self-evaluation are more flexible parameters, which can be altered

by different influencing factors, for example, by physical activity. Theoretically, there is a correlation between self-image and self-esteem, but it does not necessarily mean that they have a significant relationship. We hypothesized that physical activity positively alters the self-image and the self-esteem as well, because it can be assumed that the alteration of self-image influences the self-esteem, too. It can also be assumed that aerobic dance, which is carried out in a group, influences not only the total self-image and the body image, but the other components of self-image as well.

Therefore the aim of this research was to investigate the effects of a professionally guided, age-needs-specific, systematic group aerobic dance exercise programme on the self-image and self-esteem of middle-aged women.

Methods

Subjects

Fifty-three healthy women (age: 48.6 ± 5.1 , height: 162.7 ± 5.4 cm, weight: 67.5 ± 11.4 kg) took part in the study. They had a sedentary occupation and were employed in the same company and none of them previously took part in any regular physical activity programme. We divided them into two groups. The experimental group (EG) consisted of 25 subjects who agreed to take part in an hour-long aerobic dance programme three times a week for one year (age: 48.9 ± 5.6 , height: 163.2 ± 5.9 cm, weight: 65.9 ± 10.2 kg). Twenty-eight subjects could not take part in the aerobic programme for several reasons (age: 48.3 ± 5.2 , height: 162.1 ± 5.0 cm, weight: 68.8 ± 13.4 kg). These subjects formed the control group (CG). There were no significant differences between the groups in terms of age, weight, or height. Because the baseline values of self-esteem and self-image for both groups were similar, it is very probable that the grouping of the subjects on the basis of their own decision did not influence the results. The subjects signed an informed consent before testing and doing the aerobic programme.

Aerobic dance programme

The programme consisted of one-hour low-impact exercises. The instructional choreography took place with couplings of arm and leg coordination (contra-lateral, criss-crossing, horizontal changes, rhythmical tasks), moving to different directions in space by responding to verbal and visual instructions. The tempo of the applied music was 130-140 bit/minute, when the focus was on influencing the cardio-respiratory system, and 120-128 bit/minute when muscle strength was aimed at being improved. The intensity of the aerobic dance programme was determined at 55-75% of maximum heart rate.

Testing

The Rosenberg Self-esteem Scale (1965). Rosenberg presented his short, ten-item scale for measuring self-esteem for the first time in the 1960s in his work with adolescents. It has since been used for decades because of its reliability and validity. Every item is composed of four statements. From the four possible answers one had to be chosen. The two extremes of choices are total agreement (zero points) and total disagreement (three points). The points from each item were added together and the subjects were rated to one of the following four categories on the basis of their total points: 1. very high self-esteem (0-2 points); 2. high self-esteem (3-5 points); 3. normal self-esteem (6-10 points); 4. low self-esteem (above 10 points).

Tennessee Self-image Test. We used the 100-statement Tennessee scale to examine self-image applied to the Hungarian population (Dévai & Sipos, 1986). Ninety items of this scale give the total self-image (TS) scale: body image (BI), moral self-image (MS), individual self-image (IS), family self-image (FS), social self-image (SS). The self-evaluation (SE) scale has 10 items (Table 1).

A person had to mark one of five numbers in accordance with the statement most appropriate for herself. The two extremes of choices were totally true (5 points) and totally untrue (1 points). We calculated the numerical values of the sub-dimensions, then added them up and so received the numerical value of the total self-image. We compared the means of the different groups to the standard values of this validated test.

The subjects were tested prior and after the aerobic dance programme after brief instruction.

The subjects were assured that their names would be anonymous and their results would not be available to other people.

Statistical procedures

The mean and standard deviation (SD) were computed for the variables. Because of the limited sample size all the variables were tested with Shapiro-Wilk's W test for normality. A non-parametric statistical procedure, Friedman's ANOVA, was used to compare the means for any significant difference. Pearson product-moment correlation was used to find the relationship between the variables. The probability level for statistical significance in all tests was set at $p < 0.05$.

Results

Comparing the means of self-image

Before the measurement there were no significant differences between the means of the experimental and the control groups in their self-image parameters (Table 2). In the experimental group 3, 15 and 6 subjects belonged to the low, medium and high self-image category, respectively (Table 1). In the control group the subject distribution in the low, medium and high category was 2, 20 and 2, respectively.

The experimental group, having finished the one-year regular aerobic dance programme, showed significantly elevated values of total self-image in the pre-post comparison (Table 2). All subjects, except one, improved their scores. Eight of them moved to a higher category, so that none of them remained in the low category and the number of

Table 1. The standard values of the Tennessee test, without the extremely low and extremely high values

	Body-image	Moral self-image	Individual self-image	Family self-image	Social self-Image	Total self-Image
Low	49-57	55-62	52-60	56-64	49-58	274-310
Medium	58-76	63-79	61-77	65-81	59-76	311-384
High	77-85	80-88	78-86	82-89	77-85	385-421

Table 2. Mean and standard deviation (SD) of self-image variables: body image (BI), moral self-image (MI), individual self-image (II), family self-image (FI), social self-image (SI), total self-image (TI) and self-evaluation (SE)

		EG							CG						
		BI	MI	II	FI	SI	TI	SE	BI	MI	II	FI	SI	TI	SE
Pre	mean	58.8	79.2	66.1	78.7	71.2	353.6	19.4	57.1	77.7	64.2	75.5	70.8	344.7	21.2
	SD	13.7	5.2	11.1	8.8	9.7	37.7	4.7	10.0	7.3	9.2	7.7	6.9	32.3	5.2
Post	mean	67.7*	82.3*	72.3*	80.3	75.4*	378.1*	17.3*	57.1†	78.0†	66.5†	76.6†	73.1*	350.0†	19.6†
	SD	12.1	4.3	9.3	7.4	8.6	33.0	4.9	9.4	8.4	9.2	8.0	6.8	33.2	6.3

* significant difference in pre-post comparison ($p < 0.05$)

† significant difference between the experimental and control group ($p < 0.05$)

subjects in the high category increased from 6 to 10 (Figure 1). Also, we found significantly higher values in the self-image sub-dimensions (Table 2). The self-image parameters for the control group did not change significantly, except for the social self-image (Table 2). Concerning the total self-image parameter one half of the group increased and half of it decreased their scores. Two subjects moved to a lower, whereas one moved to a higher category (Figure 2).

The self-evaluation (SE) mean of the experimental group decreased by 12.3 % and the difference between the pre and post measurement values was significant. In the control group the mean of SE also decreased, but only by 8.1 % and the difference was not significant (Table 2).

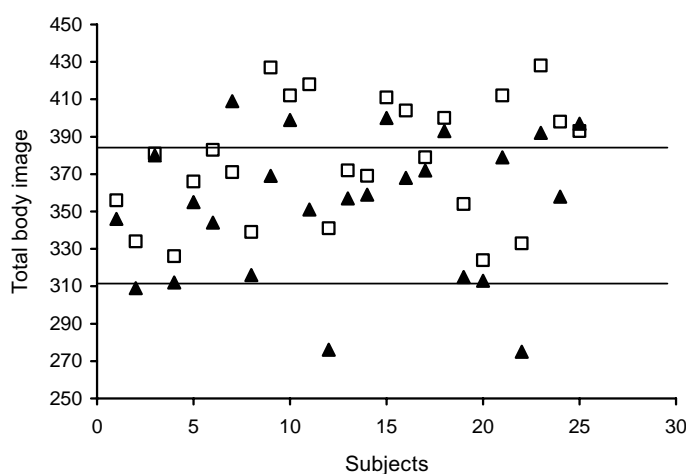


Figure 1. Total self-image score for each subject in the experimental group before and after measurement. The triangles represent scores obtained at the first test and squares denote the scores at the second test. The two lines in the coordinate system divide the space in three categories, i.e. low, medium and high. Note that the squares move upwards indicating the increase of the total self-image for each subject, and as a consequence the mean increased significantly.

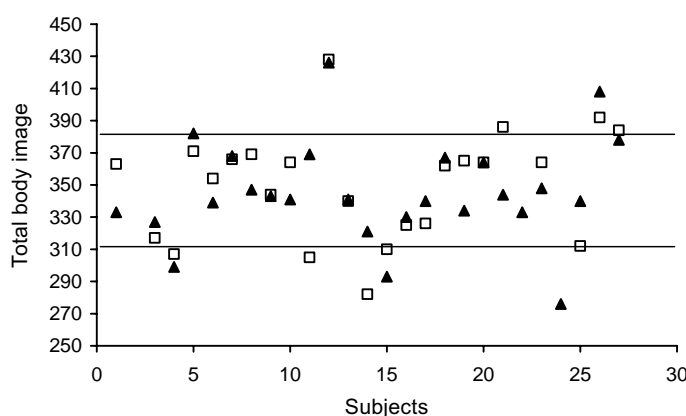


Figure 2. Total self-image score for each subjects in the control group before (triangles) and after (squares) measurement. The two lines in the coordinate system divide the space in three categories, i.e. low, medium and high. Note that the squares move upwards and downwards indicating no systematic alteration in total self-image. Namely, the mean remained almost unchanged.

Table 3. Means and standard deviation (SD) of self-esteem and comparison of the means of the experimental (EG) and control group (CG)

	EG		CG	
	Pre	Post	Pre	Post
Mean	12.3	7.8*	11.1	10.5†
SD	4.7	4.2	3.7	3.2

* significant difference in pre and post comparison ($p < 0.05$)

† significant difference between the experimental and control group ($p < 0.05$)

Comparing EG and CG the means of the experimental group were higher than the means of the control group in total self-image and its components. There were significant differences between the means of the two groups in body image, moral self-image, individual self-image, family self-image and total self-image. We did not find any significant difference in the social self-image component. Concerning self-evaluation, the means were lower for the experimental group as compared to the control group. The means of the two groups differed significantly.

Comparing means of self-esteem

There were no significant differences between the means of the experimental and the control groups in the first test. After one year the experimental group decreased their scores by 53.7 % which was a significant change. The control group also decreased their self-esteem values, but only by 8.1 %. The difference is not significant. Comparing the two groups we found a significant difference in the self-esteem means in the second test.

Correlations between total self-image, self-evaluation and self-esteem.

There was a significant correlation between the total self-image and body image in both groups before and after the measurement. Also, we found a significant correlation between the total self-image and self-esteem in EG and CG before and after the experiment. Concerning the relationships between self-evaluation and total self-image the correlation was only significant in the case of CG. In EG no correlation was found between self-evaluation and total self-image in the first test, but the relationship became significant after the measurement (Table 4).

Self-evaluation and self-esteem did not show any correlation at the beginning of the measurement in either EG or CG (Figure 3). After the measurement there was no correlation between the two parameters in CG, but

Table 4. Correlation between total self-image (TI), body image (BI), self-evaluation (SE) and self-esteem (Sest). The numbers represent the correlation coefficients (r). Insignificant correlation coefficients are not indicated in the table. Bold numbers represents r values for experimental group. The correlation between parameters is significant at $p < 0.05$

		TI	BI	SE	Sest
TI	Pre		0.73	-0.44	-0.71
	Post		0.72	-0.76	-0.65
BI	Pre	0.79			-0.46
	Post	0.77		-0.43	-0.54
SE	Pre				
	Post	-0.72			
Sest	Pre	-0.77	-0.69		
	Post	-0.90	-0.75	0.58	

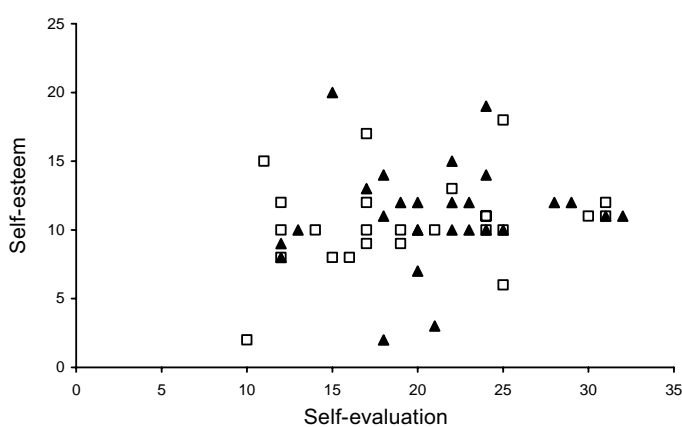


Figure 3. Relationship between self-evaluation and self-esteem in the control group before and after measurement. The triangles represent scores obtained at the first test and squares denote the scores at the second test. There is no significant correlation between the two parameters at either before or after the measurement.

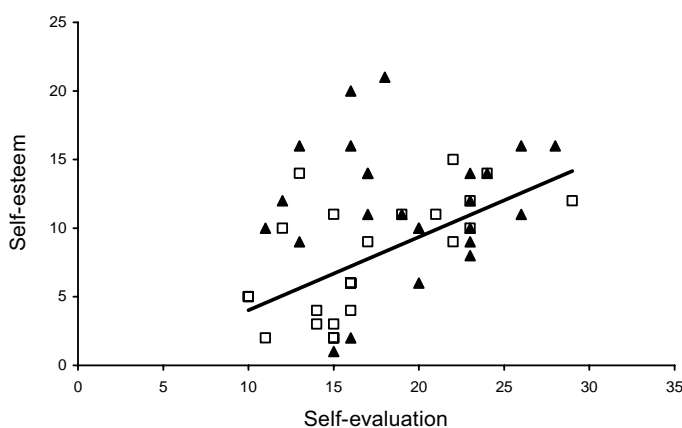


Figure 4. Relationship between self-evaluation and self-esteem in the experimental group before and after measurement. The triangles represent scores obtained at the first test and squares denote the scores at the second test. There is no significant correlation between the two parameters at the first test. However, the relationship became significant having executing one year, regular aerobic dance programme. The regression line indicates significant correlation ($p < 0.05$).

in EG the relationship became significant ($r = 0.58$, $p < 0.05$) (Figure 4).

Discussion and conclusions

An individual's self-concept is in harmony with many manifestations of her/his behaviour, it is in close harmony with the total sum of her/his personality. Those people who consider themselves unworthy have tendencies to act accordingly. Those persons whose self-images are far from reality evaluate others and also important life situations unrealistically. Those people who have deviant self-images do not behave in accordance with social expectations.

Low self-image signals that a person is dissatisfied with herself/himself, has little value for her/his traits and her/his capabilities. She/he sees herself/himself unattractive in the eyes of others, yet in spite of this she/he has a hard time of acknowledging her/his mistakes. She/he primarily depends on the evaluation of others, accepts the opinion of her/his surroundings and behaves according to these expectations. Her/his self-esteem is low; she/he suffers from lack of self confidence and is therefore afraid of changes, unfamiliar situations, tasks and has no trust in her/his success. All these are hindrances in establishing relationships to be a part of peer groups. These factors often produce stress, dejection, depression and/or unbalanced emotional conditions.

High self-image indicates that an individual has a good opinion of herself/himself and that she/he is satisfied with her/his characteristics. She/he holds her/his capabilities in high esteem and assumes others also to do the same. In her/his self-evaluation she/he does not depend solely on her/his surroundings; she/he acknowledges justified criticism.

Positive self-image indicates good self-knowledge. It signals that the individual has befitting (adequate) self-assurance, is not afraid of new challenges and is not deterred by unexpected situations. She/he aims at succeeding and does not spare work to achieve it. She/he has no problems with social adjustment. She/he has incentives to live for, is open and honest, feels good about herself/himself, accepts and likes herself/himself, acknowledges and accepts her/his own physical and mental limitations, has ethical standards and, generally, has a cheerful prospective on life.

The outward and inward echoes of self-image contain five domains, or dimensions of self-image, as follows: body image (physique, health, physical condition); moral self-image (the typical moral behaviours of an age group); individual self-image (endowments,

abilities, self-assurance, will power, perseverance); family self-image (the importance of a family for a person, her/his position in a family); social self-image (relation to work, to society, to fellow man).

The subjects recruited in this study, belonging to either the experimental group or control group, had positive self-image on average because they showed an average score of the medium category. Consequently, we could not experience any negative effects of ageing that might have been expected. However, we found seven subjects in both groups who belonged to the low category or had a very low score in the medium category. We expected that these subjects in the experimental group would increase their score and change their self-image category which would result in a significant improvement in self-image on average.

The total self-image score, which is the aggregate of the score of the self-image components (domains), increased significantly in the experimental group and remained unchanged in the control group, as had been hypothesized. All the subjects in the experimental group, except one, increased their score at the end of the experiment, and none of them belonged to the low category. Furthermore, 41.1 % of the subjects achieved scores of the high category. Concerning the evaluation of the Tennessee Self-image Test, the medium or high category reflect good or excellent self-confidence.

Also, it could be expected that the greatest change might occur in the body image due to the applied aerobic dance programme, which reflects a positive change in self-estimation concerning physique, health and physical condition. According to our results, body image improved more than moral, individual and social self-images of the sub-dimensions of self-image. The body image contributed to the improvement of total body image by 15.1 percent. Beside the body image, individual self-image shows marked improvement (9.4 %) which is realized in a higher esteem of abilities, self assurance, will power and persistence. The applied aerobic dance programme did not significantly change the family self-image. With all probability, interpersonal relationships within a family are more complexly organized than the methods and scope of our research could reach. It is also possible that any positive change, in this context, requires a longer time span, thus change may come later, as opposed to immediate changes in the other dimensions of self-image. At the end of the aerobic dance programme, the mean of total self-image of the experimental group came very close to the border of the high category. The one-year long, systematic aerobic programme brought about a positive alteration in the self-image of middle-aged women; their self-confidence grew in the evaluation of their own physical conditions, their abilities and their environment. Our result is in agreement with the results of

Loland (1998), Skinar, Bullen and Cheek, (1986), Rani and Roa (1994), and Minarkova and Fialova (1997), who also found a better evaluation of body image by the participants of systematic fitness training than by the non-participants.

In harmony with the results of the study of Frederic and Show (1995) with young women, we also found, that body image may be a driving force for middle-aged women to take part in fitness training in certain cases. Fortunately, it is not a deterrent force for participation. Members of our experimental group were volunteers and at the time of the first measuring we did not find any significant differences between the means of body images of the experimental and the control group.

Concerning the effective duration of exercising, which is needed for significant improvement, the results of our study are in accordance with the results of Bartlewski and associates (1996), who found significant improvement in the body image of college students due to a one-semester aerobic dance programme. It seems that at least four-to-six-month regular physical activity is needed to improve self-image. This assumption is supported by the findings of Ascii and associates (1998) who reported no significant change in self-image and self-esteem by applying an eight-week-long aerobic dance programme for female college students. We may also be allowed to conclude that middle-aged and elderly people need a longer period of time of exercising to improve their self-image because the adaptation process is probably slower for them than for young adults. The body image of the control group did not change significantly in our study which confirms our assumption that participation in aerobics for middle-aged women can enhance body image and improve self-confidence and satisfaction. Despite not studying the effect of the interruption or termination of aerobic dance programme, it is important to mention that the positive alterations due to physical activity do not remain unchanged. It is very probable that the increased self-image returns to the basic level when exercising is stopped, as Hamman and associates (Hamman, Longridge, Mekjavic, & Dickinson, 1995) found when studying the effect of physical training on balance abilities.

The significant decrease of means of self-esteem in the experimental group denotes that significant improvements took place in self-estimation. At the onset of this study the mean self-esteem of the group was low (above 10 points) and at the end of the aerobic dance programme it was normal (7.8 points) which reflects a realistic self-esteem, i.e. the subjects evaluated themselves more objectively.

In accordance with the results of Thorgensen's study (2002), we also found that a positive change of body image positively affects one's complex self-image. In our study the significant correlation between body image and self-esteem indicates

that rising values of body image go hand in hand with improvements of self-assurance. It can be ascertained that satisfaction with body image plays a significant intervening part between systematic fitness training and self-esteem. So, the possible negative effects of hormonal and physical changes due to age may be counterbalanced by systematic fitness training, because one feels healthier, more attractive, more self-confident and with these feelings one's self-assurance may improve.

In conclusion, the prolonged (one-year long) aerobic dance training had positive effects on the total self-image of middle-aged women. The applied aerobic dance programme enhanced not only the body image, but it also influenced the individual, social and moral self-image, too, which

can be attributed to the specificity of aerobic dance. Namely, the participants exercise in a group that allows the individuals to compare themselves to the others and they may have positive feedback from others and the coach as well. It seems that aerobic dance is one of the best physical activity tools which can increase self-confidence and satisfaction of middle-aged women in general and it may counterbalance the negative effect of ageing. A positive change in self-image influenced positively the more stable self-esteem indicating increased self-confidence and a more realistic self-evaluation which is also indicated by the significant relationship between the self-evaluation (self-criticism) and the self-esteem that can also be attributed to an aerobic dance programme.

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UČINCI VOĐENOG, SUSTAVNOG TRENINGA AEROBIKE NA SAMOPOŠTOVANJE ODRASLIH OSOBA

Sažetak

Uvod

Većina istraživanja o utjecaju tjelesne aktivnosti usmjerena je na promjene u motoričkoj izvedbi te na zdravstveni status žena srednje dobi. Relativno je malo istraživanja kojima je cilj istražiti kako redovita tjelesna aktivnost utječe na sliku o sebi, samovrednovanje i samopoštovanje te na međusobne odnose tih koncepata na uzorku žena srednje dobi. Samopoštovanje je stabilna karakteristika koja opisuje psihološko i mentalno zdravlje ljudi. Slika o sebi i samopoštovanje fleksibilne su karakteristike koje je moguće mijenjati pod utjecajem različitih faktora, kao što je, na primjer, tjelesna aktivnost. Teorijski gledano, postoji povezanost između slike o sebi i samopoštovanja, no nije nužno da se radi o značajnoj povezanosti. Pretpostavljamo da tjelesna aktivnost pozitivno utječe na promjenu slike o sebi i samopoštovanja, kao što je moguće pretpostaviti da poboljšanje slike o sebi također utječe na samopoštovanje. Također je moguće pretpostaviti da program aerobike, koji se provodi u grupama, utječe ne samo na ukupnu sliku o sebi i na sliku vlastitog tijela, već i na ostale komponente slike o sebi.

Cilj je rada bio istražiti učinke stručno vođenog, sustavnog grupnog programa aerobike, prilagođenog potrebama ciljane dobne skupine, na sliku o sebi i na samopoštovanje žena srednje dobi.

Metode

Ispitanici. Pedeset i tri zdrave žene (dob: $48,6 \pm 5,1$, visina: $162,7 \pm 5,4$ cm, težina: $67,5 \pm 11,4$ kg) sudjelovale su u istraživanju. Njihov režim života bio je sjedilački. Uzorak je podijeljen u dvije skupine. Eksperimentalna skupina (EG) sastojala se od 25 ispitanica koje su dobrovoljno vježbale aerobiku tri puta tjedno po jedan sat u razdoblju od jedne godine (dob: $48,9 \pm 5,6$, visina: $163,2 \pm 5,9$ cm, masa: $65,9 \pm 10,2$ kg). Dvadeset i osam ispitanica iz nekoliko razloga nije se moglo uključiti u program vježbanja aerobike, (dob: $48,3 \pm 5,2$, visina: $162,1 \pm 5,0$ cm, masa: $68,8 \pm 13,4$ kg). To su bile ispitanice kontrolne skupine (CG).

Varijable. Kako bi se prikupili podaci o samopoštovanju i slici o sebi, ispitanice su prije i nakon trenažnog programa popunile upitnike samoprocjena.

The Rosenberg Self-esteem Scale (1965). Deset čestica za procjenu samopoštovanja Rosenberg je prvi put primijenio šezdesetih godina 20.st. na uzorku adolescenata. Svako pitanje čine četiri tvrdnje, od kojih ispitanik odabire jednu. Dvije predstavljaju ekstremni izbor, točnije potpuno slaganje (nula bodova) i potpuno neslaganje (tri boda). Sumiraju se bodovi na svim česticama, a potom se na temelju dobivenog rezultata ispitanik klasificira u jednu od četiri

kategorije 1. vrlo visoko samopoštovanje (0-2 boda); 2. visoko samopoštovanje (3-5 bodova); 3. normalno samopoštovanje (6-10 bodova); 4. nisko samopoštovanje (iznad 10 bodova).

Tennessee Self-image Test. Devetnaest čestica ove skale daje ukupnu sliku o sebi (TS), a čine je: tjelesna slika o sebi (BI), moralna slika o sebi (MS), individualna slika o sebi (IS), obiteljska slika o sebi (FS), socijalna slika o sebi (SS). Skala samovrednovanja (SE) ima 10 čestica. Osoba mora označiti jedan od pet brojeva sukladno tome koja je tvrdnja najbolje opisuje. Dva ekstremna izbora jesu: potpuno točno (5 bodova) i potpuno netočno (1 bod). Izračunate su vrijednosti po subskalama, zatim su zbrojene i na taj je način dobivena numerička vrijednost procjene ukupne slike o sebi. Aritmetičke sredine obiju grupa uspoređene su s normativnim vrijednostima ovog standardiziranog instrumenta.

Rezultati

U eksperimentalnoj skupini, koja je završila jednogodišnji program redovitog vježbanja aerobike, dobiveno je značajno povećanje vrijednosti procjene ukupne slike o sebi u odnosu na inicijalno testiranje. Kod svih ispitanica, osim kod jedne, dobiveno je povišenje rezultata. Osam ih se pomaknulo u višu kategoriju tako da nijedna nije ostala u kategoriji osoba s niskim samopoštovanjem, a broj ispitanica u kategoriji visokog samopoštovanja se povećao sa 6 na 10. Utvrđene su i statistički značajno više vrijednosti na subskalama slike o sebi. Parametri slike o sebi kod ispitanica kontrolne skupine nisu se statistički značajno promijenili, izuzev socijalne slike o sebi. Uzevši u obzir parametar ukupne slike o sebi, kod polovice ispitanica kontrolne skupine došlo je do povećanja, a kod druge polovice do smanjenja vrijednosti samoprocjena. Dvije ispitanice pomaknule su se iz niže u višu kategoriju.

Nije utvrđena statistički značajna razlika između eksperimentalne i kontrolne skupine u prvom mjerenju. Nakon godinu dana, u eksperimentalnoj skupini došlo je do pada rezultata za 53,7%, što je statistički značajna promjena. Kod ispitanica kontrolne grupe također je došlo do sniženja vrijednosti u procjeni samopoštovanja, ali samo za 8,1%. Dobivena promjena nije statistički značajna. Aritmetičke sredine dviju skupina statistički su se značajno razlikovale u drugoj točki mjerenja.

Na temelju rezultata dobivenih prvim mjerenjem, samovrednovanje i samopoštovanje nisu se pokazali povezanim ni u jednoj od skupina. Nakon jednogodišnjeg perioda, tj. na temelju podataka dobivenih drugim mjerenjem, povezanost tih koncepata pokazala se statistički značajnom u eksperimentalnoj skupini ($r = 0,58$, $p < 0,05$), što u kontrolnoj skupini i dalje nije bio slučaj.

Rasprava i zaključak

Jednogodišnji program vježbanja aerobike ima pozitivne učinke na ukupnu sliku o sebi kod žena srednje dobi. Primijenjeni program vježbanja aerobike kod ispitanica je poboljšao sliku o sebi, no također je utjecao i na individualnu, moralnu i socijalnu sliku o sebi, što se može pripisati specifičnosti aerobike. Naime, ispitanicama eksperimentalne grupe bilo je omogućeno da, vježbajući u skupini, usporede sebe s ostalima, a mogle su i dobiti pozitivne povratne informacije od ostalih sudionica

programa i od trenera. Čini se da je program aerobike jedan od najboljih alata tjelesne aktivnosti koji može povećati samopouzdanje i zadovoljstvo žena srednje dobi općenito te ublažiti negativan učinak starenja. Pozitivna promjena slike o sebi djelovala je pozitivno na samopoštovanje, što je dovelo do višeg samopouzdanja i realističnijeg samovrednovanja, što je indicirano značajnom povezanošću samovrednovanja (samokritičnosti) i samopoštovanja, a što se također može pripisati vježbanju aerobike.

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