

The Problems and Effects of Physical Fitness of Aerobic Dance Leaders

Surumpa Charoensuk Kaewwong¹, Chulaporn Sota^{2,4}, Kasom Chanawong²,
Jirawan Tanwattanakul³

¹Doctor of Exercise and Sport Sciences Program

²College of Scholars, Thailand

³Faculty of Nursing, Khon Kaen University

⁴Research and Training Center for enhancing Quality of Life of Working Age People

E-mail: katen_17@hotmail.co.th, chusot@kku.ac.th, spakvi@kku.ac.th, kasom@cas.ac.th, jirtan@kku.ac.th

Abstract--- Exercise leaders were the key for healthy behavior. However, it was found that those the aerobic dance leaders in the community had studied aerobic dance from aerobic dance videotapes which were purchased and learnt by themselves. Therefore, the researchers are interested in studying the problems and effects of physical fitness of aerobic dance leaders. The samples were obtained by volunteers who were undergraduate students for 30 students perform physical fitness tests and focus group. The t-test dependent was used to analyzed the data, and the value of the statistical significance was set at the level of 0.05. The physical fitness of female aerobic dance leaders, it was found that after the aerobic dance leaders training program, they has weight loss and decreased percentage of the subcutaneous fat, more grip strength, leg strength, flexibility, vital capacity, and $\dot{V}O_2\max$ than before training. The physical fitness of male aerobic dance leaders, it was found that they have more percentage of the subcutaneous fat, flexibility, vital capacity, and $\dot{V}O_2\max$ than before training. The qualitative findings by the Focus Group, it was found that the important issues problems and obstacles in aerobic dance and being aerobic dance leaders is they were afraid of being teased as being a third gender, so most did not do aerobic dance. The researchers promote and developed participants to find their own aerobics patterns by offering aerobics in various forms, such as Thai aerobics. Conclusion, It can be seen that the aerobic dance leaders has a good attitude, skill and ability to aerobic dance leaders.

Keywords --- Aerobic dance leaders, Physical fitness, Focus group.

I. INTRODUCTION

Inadequate physical activity was cause of death from chronic non-communicable diseases.^{1,2} The reported that over the past 10 years, about one in three Thai people had inadequate physical activities. Thais had a chronic non-communicable disease mortality rate of 71 percent of all deaths. The 11,129 people, who had inadequate physical activity, had risk factors to the deaths and attributed to the health burden.² The National Sport Development Plan No. 6 (2017-2021), which the strategic goals were to have sports volunteer and exercise leaders who were ready to help or provide sports and physical activity for the local community.³ From the policy of the government agency mentioned above, exercise leaders were the key for healthy behavior because their roles and missions were related to the change of the behaviors of health for themselves, family and community. The fitness leader is a person who comes to coach people for the proper exercise as

the principles without the danger on their health because it might be harmful to the health instead of support. The wrong exercise can affect the body terribly.

Aerobic exercise which is very popular is musical rhythmic exercise or aerobic dance. In Thailand, there are many campaigns that encourage people to aware of health and perform aerobic exercise. For instance, department store, activity space, public park, even government and private organization provide specific locations for exercising. However, it was found that those the aerobic dance leaders in the community had studied aerobic dance from aerobic dance videotapes which were purchased and learnt by themselves.⁴ These raised the question that what the quality and characteristics of the aerobic leader should be. If the aerobic leader have the wrong knowledge, can the exerciser get the benefit?

According to the researcher thinks that the university students are the group of people who are interested in exercising and have the capacity to be the fitness leaders. Therefore, the researchers are interested in studying the problems and effects of physical fitness of aerobic dance leaders. The students who took the aerobic dance leaders program can use their knowledge and experience to be their career or to develop themselves and people in the community. They can also make money for themselves and be the model of training fitness leaders in others group latter.

II. METHODOLOGY

The sample group was the participants in the training course who were the undergraduate students from three departments including sport sciences, public health, and physical education at Roi Et Rajabhat University for 30 people in total. Moreover, the number of sample group have been calculated from the pilot study by using WINPEPI Course Version 11.65 to calculate the size of population. Also, the researcher added the size of population for 20% to protect the withdrawal of sample group during the experiment. The inclusion criteria was that the participants haven't been aerobic dance leaders before, and the exclusion criteria was that the participants couldn't attend the research study as the whole schedule.

Research process: 1) Before training, the participants were tested for their physical fitness using the physical fitness test of the Sport Authority of Thailand⁵ starts with the measurement of blood pressure, weight and high, % body fat, grip strength, leg strength, sit and reach, vital capacity, and $\dot{V}O_2\text{max}$ respectively from the lecturer team of Sports Science Department, the Faculty of Liberal Arts and Science, Roi Et Rajabhat University. 2) Focus group by the participants exchanged and learnt experiences in aerobic dance and being aerobic dance leaders. The participants can present its problems and obstacles. The note-taking method, interviews, and audio/ video recordings. 3) The sample group attended the aerobic dance leaders training program according to the course. 4) After training, the participants will be tested for physical fitness from the lecturer team of Sports Science Department, the Faculty of Liberal Arts and Science, Roi Et Rajabhat University and focus group again. Ethics has been considered by the Ethics Screening Committee No. HE612180 from Khon Kaen University.

The researcher analyzed the data by using the computer course to find percentage (%), mean (\bar{X}), standard deviation (S.D.), and using t-test dependent to compare the results of compare the effects of aerobics dance leader's physical fitness by SPSS Statistics 19.0 for Windows and determine the statistical significance at the level of 0.05.

III. RESULTS

Part 1 The physical fitness test of participants in aerobic dance leaders training program

General information, it shows that the aerobic dance leaders as 19 females, 11 males. They are aged 21-22 years and department in 12 sports science, 7 public health and 11 physical education.

TABLE 1. Compares the results of physical fitness of female aerobic dance leaders before and after the aerobic dance leaders training program

| Lists | Sample Group | n | \bar{X} | S.D. | t | p |
|---|--------------|----|-----------|-------|-------|-----|
| Body Weight rate (kg) | Before | 19 | 56.21 | 7.60 | 3.85 | .00 |
| | After | 19 | 54.90 | 6.87 | | |
| Subcutaneous Fat (%) | Before | 19 | 30.99 | 5.01 | 6.20 | .00 |
| | After | 19 | 28.30 | 4.16 | | |
| Grip Strength (cm ³ /body weight) | Before | 19 | .52 | .08 | -2.25 | .04 |
| | After | 19 | .57 | .13 | | |
| Leg Strength (cm ³ /body weight) | Before | 19 | 1.69 | .45 | -2.77 | .01 |
| | After | 19 | 1.93 | .50 | | |
| Flexibility (cm) | Before | 19 | 8.74 | 6.52 | -2.07 | .05 |
| | After | 19 | 11.11 | 5.93 | | |
| Vital Capacity (cm ³ /body weight) | Before | 19 | 54.96 | 12.85 | -2.77 | .01 |
| | After | 19 | 60.62 | 11.01 | | |
| $\dot{V}O_2\text{max}$ (ml/kg/minute) | Before | 19 | 29.64 | 6.19 | -4.31 | .00 |
| | After | 19 | 37.06 | 7.04 | | |

*P<0.05

Table 1, it is found that after the aerobic dance leaders training program, they has weight loss and decreased percentage of the subcutaneous fat, They have more grip strength, leg strength, flexibility, vital capacity, and $\dot{V}O_2\text{max}$ than before training with the statically significance.

Table 2, it is found that after the aerobic dance leaders training program, they have more percentage of the subcutaneous fat, flexibility, vital capacity, and $\dot{V}O_2\text{max}$ than

before training with the statically significance. However, they have weight loss, grip strength, and leg strength, decreased no statically significance.

TABLE 2. Compares the results of physical fitness of male aerobic dance leaders before and after the aerobic dance leaders training program

| Lists | Sample Group | n | \bar{X} | S.D. | t | p |
|---|--------------|----|-----------|-------|-------|-----|
| Body Weight rate (kg) | Before | 11 | 70.64 | 10.04 | 1.20 | .26 |
| | After | 11 | 69.88 | 8.54 | | |
| Subcutaneous Fat (%) | Before | 11 | 17.15 | 4.13 | 5.03 | .00 |
| | After | 11 | 14.90 | 4.98 | | |
| Grip Strength (cm ³ /body weight) | Before | 11 | .65 | .16 | 1.03 | .33 |
| | After | 11 | .61 | .09 | | |
| Leg Strength (cm ³ /body weight) | Before | 11 | 2.35 | .97 | .79 | .45 |
| | After | 11 | 2.17 | .75 | | |
| Flexibility (cm) | Before | 11 | 11.58 | 9.08 | -1.62 | .14 |
| | After | 11 | 12.64 | 9.02 | | |
| Vital Capacity (cm ³ /body weight) | Before | 11 | 55.44 | 10.61 | -4.63 | .00 |
| | After | 11 | 65.00 | 9.19 | | |
| $\dot{V}O_2\text{max}$ (ml/kg/minute) | Before | 11 | 35.75 | 3.43 | -3.43 | .00 |
| | After | 11 | 43.73 | 7.93 | | |

*P<0.05

Part 2 Focus group discussion of participants in aerobic dance leaders training program

The qualitative findings by the Focus Group from interviews with participants of the aerobic dance leaders training program found that there were important issues:

1) Aerobic dance experience and being aerobic dance leaders. The participants of the training program commented that they had fun to do aerobic dance and knew the dance moves and the names of dance moves when attending training. Moreover, they also learned to socialize by making new friends and have more friends from different departments. They had meetings with friends, seniors and juniors who come to aerobic dance together which some people have never done aerobics before. As can be seen from the data, the participants said: "This is the first time for me to attend the aerobic dance leaders training program." And when they were the aerobic dance leaders at the first time, they felt excited, pressured, and were afraid of unable dance. However, when they did dancing regularly, they felt joyful, enjoyable, and it was challenging. They could use both thought, memory, and rhythms in dancing.

2) Problems and obstacles in aerobic dance and being aerobic dance leaders. The participants of the aerobic dance leaders training program gave an overall opinion that they were tired, and they had pains and aches on their body. They forgot dance moves, and they can't dance in time and their dances were not in the correct rhythm. Also, they were afraid of being teased as being a third gender. As can be seen from the data, the participants said: "will be teased by friends as the third gender, and this made me and most male friends did not do aerobic dance."

3) Methods for solving problems and obstacles in aerobic dance and being aerobic dance leaders. The participants of the aerobic dance leaders training program gave an overall opinion that they often practiced listening and counting the music rhythms. Before dancing, they were concentrated and stayed focused. When they were dancing incorrectly or they can't remember the moves, they must repeat the same dance move until they remember the new one. If they lead simple

dance moves, the people will be able to follow the dance moves correctly. The leaders can give smiling and speak to create fun atmosphere of dancing, so the followers won't get stressed. As can be seen from the data, the participants said: "We can often practice, practice dancing as usual or practice in front of the mirror and find errors and improve dancing."

4) The development guidelines of being aerobic dance leaders. The participants of the aerobic dance leaders training program gave an overall opinion that the leaders should work hard to gain more experiences. They should try to find various songs or think of new dance moves to combine in aerobic dance that make dancing practice fun. As can be seen from the data, the participants said: "I will use my leadership as an aerobic dance leader to improve in my career or apply to use with people in my village to motivate them exercise." and "I must work hard, practice, and make better than ever, then distribute to community that have never had an aerobic dance exercise before."

5) Suggestions for aerobic dance and being aerobic dance leaders. The aerobic dance leaders must have the courage to lead aerobic dance and be friendly as the leaders. They must also entertain and make the participants enjoy aerobic dance. As can be seen from the data, the participants said: "I practiced dancing in front of the mirror, so I could look at myself, and I also looked at my friends and the followers regularly."

IV. DISCUSSION

Part 1 The physical fitness test of participants in aerobic dance leaders training program

The physical fitness of the participants in the aerobic dance leaders training program, found that all lists of physical fitness test have been improved after training in which female participants. For male participants, it was found that the subcutaneous fat, flexibility, vital capacity, and $\dot{V}O_2\text{max}$ higher than before training. It shows that the results were caused by the aerobic dance that uses energy. Thus, the muscles were exerted to move according to the music rhythm throughout the duration of the activity. Therefore, it increases the heart rate and muscle functions, so it increases the endurance performance of the respiratory and circulatory systems.^{6,7,8,9,10} As a result, weight loss and the subcutaneous fat was reduced as the body used more energy.^{6,11} Aerobic dance patterns with body movements, both the upper and lower parts of the body. The aerobic dance is a movement by using body weight as the resistance. This aerobic dance makes the muscles stronger. This may be a result of increased nervous system function.^{7,12} But research into the intensity of aerobic dance activity may not be enough to develop muscle strength in young men. It may be that all participants have never been an aerobics dance leader before, thus focusing on developing aerobic dance leader skills.

Part 2 Focus group discussion of participants in aerobic dance leaders training program

From the research, it was found that the important issues problems and obstacles in aerobic dance and being aerobic dance leaders is they were afraid of being teased as being a third gender, so most did not do aerobic dance. They had pains

and aches on their body. They forgot dance moves, and they can't dance in time and their dances were not in the correct rhythm. The solution is to practice listening and counting the music rhythms. Before dancing, they were concentrated and stayed focused. To promote and develop the trainees to find their own aerobic dance styles. The researcher introduced aerobic dance in various forms such as Thai boxing aerobic or aerobic with resistance exercise (new body) for participants to experience aerobic dance in various forms. Thus, the trainees can develop and adapt these forms to their dance styles. In addition, the participants development guidelines of being aerobic dance leaders by developing a career and bringing dance to people in the community who were exercising or in a community that didn't have exercise.

V. CONCLUSION

It can be seen that the participants in the aerobic dance leaders training program has a good attitude, skill and ability to aerobic dance leaders.

VI. RECOMMENDATION

There should be support and promote to have aerobic leaders in the community, by participants in aerobic dance leaders training program should have basic knowledge of physiology like the students in Sports Science, Public health, Physical Education, Nursing, Medicine, Physical Therapy and so on or the volunteers who are ready to receive the training throughout the duration of the course.

ACKNOWLEDGEMENT

We would like to thanks the Research and Training Center for enhancing Quality of Life of Working Age People, all volunteers and all related person, those involved in this research.

REFERENCES

- [1] World Health Organization, Health Topics: Physical Activity, Retrieved 2017 Jun 8, from http://www.who.int/topics/physical_activity/en/, 2012.
- [2] The Committee of Development Master Plan for Promoting National Physical Activity, Department of Health, Ministry of Public Health. Master Plan for Physical Activity Promotion (2018-2030), Retrieved 2017 Dec 20, from <http://dopah.anamai.moph.go.th/?p=1515>, 2017.
- [3] Ministry of Tourism and Sports, The sixth National Sports Development Plan (2017-2021), Retrieved 2017 Jun 8, from http://mots.go.th/ewt_dl_link.php?nid=8409, 2017.
- [4] A. Pinitniyom, "Characteristics of the aerobic dance leaders," M.S. thesis, Faculty of Graduate Studies, Mahidol University, Bangkok, Thailand, 2007.
- [5] Ministry of Tourism and Sports, "Physical Fitness Test," Bangkok: Express Transportation Organization of Thailand Press, 2005.
- [6] M. F. Ahmad and M. A. A. Rosli, "Effects of Aerobic Dance on Cardiovascular Level and Body Weight among Women," *International Scholarly and Scientific Research & Innovation*, vol. 9, issue 12, pp. 874-882, 2015.
- [7] E. T. Howley and D. L. Thompson, "Fitness professional's handbook," 6 ed., United States of America: Human Kinetics, 2012.
- [8] S. A. Plowman and D. L. Smith, "Exercise physiology for health, fitness, and performance," 4 ed., China: Lippincott Williams and Wilkins, 2014.
- [9] J. S. Lee, C. G. Kim, T. B. Seo, H. G. Kim, and S. J. Yoon, "Effects of 8-week combined training on body composition, isokinetic strength, and cardiovascular disease risk factors in older women," *Aging Clin Exp Res*, vol. 27, issue 2, pp. 179-186, 2015.

- [10] S. Kumar and Priyanka, “The effect of Zumba & aerobics exercise training on physical fitness variables - A study,” *IJPESH*, vol. 3, issue 5, pp. 275-276, 2016.
- [11] R. N. Ativie, A. A. Aigbiremolen, P. E. Ohwin, A. J. Okemuo1, O. M. Odigie, J. Agono1, and J. C. Igweh, “Modulations of 8-Week Aerobic Dance Exercise on Selected Anthropometric Indicators in Overweight and Obese Females,” *JALSI*, vol. 16, issue3, pp. 1-8, 2018.
- [12] M. Ismail, “The Effects of Mixed Exercise (ABOXERCISE) on Cardiovascular Endurance, Muscular Endurance and BMI level in 30- to 40- Year-Old Obese Males,” *Pertanika J. Soc. Sci. & Hum*, vol. 26, issue 3, pp. 1519-1527, 2018.