

## Effect of moderate intensity continuous exercise on the life quality and physiological status of college Obese students

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**Abstract:** This study investigated the effects of Moderate Intensity Continuous Exercise (MICE) on the quality of life and physiological status of obese college students. Employing a Solomon Four-Group experimental design, the research involved 60 obese students from a state university in Negros Occidental. The Quality of Life Scale (QOLS) by John Flanagan measured life quality, while the Philippine Physical Fitness Test assessed physiological status. Descriptive statistics (mean, standard deviation) and inferential tests (independent and dependent t-tests at a 0.05 significance level) were used to analyze the data. Findings revealed that both the MICE (experimental) and Zumba (control) groups improved in life quality from “mostly satisfied” to “delighted” post-intervention. Physiological status, initially “above average” for both groups, improved to “good” in the MICE group but remained “above average” in the Zumba group. Although there were no significant differences in pretest or posttest scores between the groups, both interventions led to statistically significant improvements over time. The results suggest that MICE is comparably effective to Zumba in enhancing life quality and may offer superior benefits for physiological status. These findings support the integration of MICE into wellness programs for obese students as a viable and effective physical activity intervention.

**Keywords:** Life quality of college students, Moderate continuous exercise, Obese college students, Physiological status, Zumba exercise.

### 1. Introduction

Many college students suffer from overweight or obesity because of their unhealthy life choices and practices. As observed, some of them are very focused on studying and because of stress they eat a lot of unhealthy food which leads them to have a negative healthy lifestyle. According to Yue, et al. [1] two most significant causes of obesity among college students are unhealthy food choices and large meal intake. Another observation of the causes of obesity is the work and study load of the college students. Moreover, college students may live a stressful life because of their hectic schedules and multiple tasks in school [2]. Thus, these factors hesitate the college student to participate in regular exercise.

The moderate intensity continuous training has been proven to improve the cardiovascular endurance and other health-related fitness components [3]. Since the many studies had been conducted to see if moderate intensity continuous exercise is effective, it is on the assertion of the researcher to see if it can also improve the life quality of the college students. Furthermore, another exercise program will be tested in this study which is called the Zumba exercise. Likewise, it is believed that having regular physical exercise contributes to the students critical thinking, focus and memorization [4]. According to Williams, et al. [5] Zumba is one of the best-known fitness which includes a high and low-intensity intervals that would help to improve the cardiovascular endurance, balance, coordination, strength, and agility.

Furthermore, the college students are in the transition period of their life and they can be considered as the most stressful individuals at this moment [6]. According to Herbert [7] college students had experienced a serious mental, emotional, and behavioral problem for. The mentioned problems by the college students in terms of their mental health could lead to a poor quality of life. Poor life quality could lead to a metabolic diseases, joint and skeletal problems, cardiovascular diseases, and other health-related diseases.

In addition, the evolution of overweight and obese college students has increased for many years up to now [8]. Heart diseases, stroke, high blood pressure, diabetes, gout, and cancers are some diseases that is linked to overweight and obesity [9]. In addition, overweight and obesity also directly related to depression, stress and anxiety which lead to unhealthy quality of life of the college students [10]. The researcher believed that moderate intensity continuous exercise may create a difference in developing the life quality and physiological health of the college students. It is because this program can be easily performed without consuming time and effort to do it. That is why it is a premise of the researcher to use the moderate intensity continuous training as an intervention to improve the life quality and physiological health status of the college obese students.

## 2. Materials and Methods

### 2.1. Participants

The participants of the study were sixty college obese students at one of the State Universities and Colleges. Subjects of the study were selected using purposive sampling technique.

### 2.2. Design and Procedure

To achieve the objectives of the study, the researcher used the Solomon Four Groups Design. The Solomon four-group design is an experiment where participants get randomly assigned to either one of four groups that differ in whether the participants receive the treatment or not, and whether the outcome of interest is measured once or twice in each group [11]. The participants were assigned randomly in four groups. Moreover, only two groups received the pre-test and posttest assessment, and the other two groups received the posttest only. Two groups underwent the (MICE) moderate intensity exercise as experimental treatment while the other two groups used the Zumba exercise. Likewise, before the conduct of the experiment, the research has been presented and proposed to a local in-house review. Furthermore, the research proposal was approved following the possible ethical consideration by the local-inhouse review committee.

#### 2.2.1. Pre-experimental Phase

The researcher asked permission from the office the vice-president of the academic affairs of one of the state university in the province of Negros Occidental to use the selected college students to be the subject the study and ask for an approval to conduct the experimental study inside the school. Furthermore, all subjects had undergone a medical check-up from the university physicians to make sure the safety and wellness of the subjects before the intervention takes place.

Also, parental consent for joining the exercise program was secured in the process and all subjects with the signed parental consent was to be only allowed to join in the experiment. Moreover, subjects of the study were grouped according to their pre-existing body mass index. Participants were group as experimental, control group, experimental posttest only, and control posttest only group. They have undergone a pre-test in their life quality using the standardized test.

#### 2.2.2. Experimental Phase

The four groups have undergone an exercise program for 4 days a week, Mondays, Tuesdays, Thursdays, and Fridays for 5 weeks. According to Lardieri [12] a four-day exercise per week is an optimal amount of physical activity to maintain a healthy heart, according to new research.

### 2.2.3. Post-Experimental Phase

After, the 5-weeks intervention, the subjects have undergone a post-test using the same standardized test that was in the pre-test. The data gathered from the responses of the respondents be check, record, and tabulate using the exact statistical tools. The SPSS was used in the compute the data. Furthermore, the researcher asked a total of twelve subjects from the four groups as participants for a focus group discussion. They were interviewed via online meeting platform and were asked about their experiences with regards to the exercise intervention program. Likewise, ethical consideration on anonymity and confidentiality was given emphasis in the study. The subjects were provided an eligibility form which includes parental consent and medical doctor's approval. It was stipulated in the parental consent that the personal background information of the subjects will remain confidential and will not be included in the book. Only the subject with parental consent, was be included in the conduct of the experiment.

### 2.2.4. Analysis

To determine the life quality and physiological status of the participants, mean and standard deviation were used for descriptive statistic and for inferential statics, the researcher used the t-test independent sample. All inferential tests were be set at a 0.05 alpha level of significance.

## 3. Result

### 3.1. Life Quality and Physiological Status in the Pretest and Posttest of the Control and Experimental Groups

Table 1 shows that the life quality of the control group before the intervention is “mostly satisfied” ( $M = 4.93$ ,  $SD = 0.27$ ), while for experimental group is “mostly satisfied” too ( $M = 4.88$ ,  $SD = 0.92$ ). Moreover, in terms of physiological status, the control group is at “above average” ( $M = 4.45$ ,  $SD = 0.39$ ), and for experimental group is at “above average” too ( $M = 4.74$ ,  $SD = 0.78$ ). Furthermore, the life quality of the control group after the intervention is “delighted” ( $M = 6.49$ ,  $SD = 0.33$ ), and for experimental group is also “delighted” ( $M = 6.70$ ,  $SD = 0.48$ ). In addition, the physiological status of the control group after the intervention is “above average” ( $M = 4.80$ ,  $SD = 0.58$ ) and the experimental group is “good” ( $M = 5.07$ ,  $SD = 0.45$ ).

**Table 1.**

Mean and Standard Deviation of the Life Quality and Physiological Status in the Pretest and Posttest of the Control and Experimental Groups.

| Group                       | Pretest |                     |                      | Posttest |               |      |
|-----------------------------|---------|---------------------|----------------------|----------|---------------|------|
|                             | Mean    | Description         | SD                   | Mean     | Description   | SD   |
| <i>Life Quality</i>         |         |                     |                      |          |               |      |
| Control                     | 4.93    | Mostly satisfied    | 0.27                 | 6.49     | Delighted     | 0.33 |
| Experimental                | 4.88    | Mostly satisfied    | 0.92                 | 6.70     | Delighted     | 0.48 |
| <i>Physiological Status</i> |         |                     |                      |          |               |      |
| Control                     | 4.45    | Above average       | 0.39                 | 4.80     | Above average | 0.58 |
| Experimental                | 4.74    | Above average       | 0.78                 | 5.07     | Good          | 0.45 |
|                             |         | Life Quality        | Physiological Status |          |               |      |
| Scale                       |         | Description         | Description          |          |               |      |
| 6.01-7.00                   |         | Delighted           | Excellent            |          |               |      |
| 5.01-6.00                   |         | Pleased             | Good                 |          |               |      |
| 4.01-5.00                   |         | Mostly Satisfied    | Above Average        |          |               |      |
| 3.01-4.00                   |         | Mixed               | Average              |          |               |      |
| 2.01-3.00                   |         | Mostly Dissatisfied | Below Average        |          |               |      |
| 1.01-2.00                   |         | Unhappy             | Poor                 |          |               |      |
| 0.00-1.00                   |         | Terrible            | Very Poor            |          |               |      |

### 3.2. Life Quality and Physiological Status in Posttests of the Control and Experimental Post-test Groups

Table 2 shows that the life quality in the posttests of the control group is “delighted” ( $M = 6.52$ ,  $SD = 0.24$ ), while the experimental posttest-only group surveyed “delighted” ( $M = 6.88$ ,  $SD = 0.13$ ) which uses the moderate intensity continuous exercise. Moreover, control groups posttests after the Zumba intervention physiological status are “above average” ( $M = 4.98$ ,  $SD = 0.33$ ), while experimental group posttest after the intervention is “good” ( $M = 5.17$ ,  $SD = 0.24$ ).

**Table 2.**

Mean and Standard Deviation of the Life Quality and Physiological Status in Posttests of the Control and Experimental Posttest-Only Groups.

| Group                      | Posttest            |                      |      |
|----------------------------|---------------------|----------------------|------|
|                            | Mean                | Description          | SD   |
| Life Quality               |                     |                      |      |
| Control                    | 6.52                | Delighted            | 0.24 |
| Experimental Posttest-only | 6.88                | Delighted            | 0.13 |
| Physiological Status       |                     |                      |      |
| Control                    | 4.98                | Above average        | 0.33 |
| Experimental Posttest-only | 5.17                | Good                 | 0.24 |
| Life Quality               |                     | Physiological Status |      |
| Scale                      | Description         | Description          |      |
| 6.01-7.00                  | Delighted           | Excellent            |      |
| 5.01-6.00                  | Pleased             | Good                 |      |
| 4.01-5.00                  | Mostly Satisfied    | Above Average        |      |
| 3.01-4.00                  | Mixed               | Average              |      |
| 2.01-3.00                  | Mostly Dissatisfied | Below Average        |      |
| 1.01-2.00                  | Unhappy             | Poor                 |      |
| 0.00-1.00                  | Terrible            | Very Poor            |      |

### 3.3. Difference in the Life Quality and Physiological Status Between the Pretests of the Control Group and Experimental Groups

Table 3 shows that there is no significant difference in the life quality between the pretests of the control and experimental groups ( $t(28) = 0.211$ ns,  $p = 0.83$ ). It also shows that there is no significant difference in the physiological status between the pretests of the control and experimental groups ( $t(28) = 1.291$ ns,  $p = 0.21$ ).

**Table 3.**

Independent t-test Result of Life Quality and Physiological Status Between the Pretests of the Control and the Experimental Groups.

| Groups:                     |      |      |                     |    |      |
|-----------------------------|------|------|---------------------|----|------|
| Group                       | Mean | SD   | t                   | df | Sig. |
| <i>Life Quality</i>         |      |      |                     |    |      |
| Control                     | 4.93 | 0.27 | 0.211 <sup>ns</sup> | 28 | 0.83 |
| Experimental                | 4.88 | 0.92 |                     |    |      |
| <i>Physiological Status</i> |      |      |                     |    |      |
| Control                     | 4.45 | 0.39 | 1.291 <sup>ns</sup> | 28 | 0.21 |
| Experimental                | 4.74 | 0.78 |                     |    |      |

**Note:** \*  $p < 0.05$  significant @5% alpha level.

ns  $p > 0.05$  not significant @5% alpha level.

### 3.4. Difference in the Life Quality and Physiological Status Between the Pretests and Posttests of the Control Group and Experimental Groups

Table 4 shows that there is a significant difference in the life quality between the pretests and posttest of the control group ( $t(14) = 13.260^*$ ,  $p = 0.000$ ) and experimental group ( $t(14) = 2.544^*$ ,  $p = 0.023$ ).

Moreover, table 4 also shows that there is a significant difference in the physiological status between the pretests and posttests of the control group ( $t(14) = 7.510^*$ ,  $p = 0.000$ ). On the other hand,

there is no significant difference in the physiological status between the pretests and posttests of the experimental group ( $t(14) = 1.570$ ns,  $p = 0.139$ ).

**Table 4.**

Paired t-test Results of Life Quality and Physiological Status Between the Pretests and Posttests of the Control and the Experimental Groups.

| Group                | Test     | Mean | SD   | t                   | df | Sig   |
|----------------------|----------|------|------|---------------------|----|-------|
| Life Quality         |          |      |      |                     |    |       |
| Control              | Pretest  | 4.93 | 0.27 | 13.260*             | 14 | 0.000 |
|                      | Posttest | 6.49 | 0.33 |                     |    |       |
| Experimental         | Pretest  | 4.88 | 0.92 | 2.544*              | 14 | 0.023 |
|                      | Posttest | 6.70 | 0.48 |                     |    |       |
| Physiological Status |          |      |      |                     |    |       |
| Control              | Pretest  | 4.45 | 0.39 | 7.510*              | 14 | 0.000 |
|                      | Posttest | 4.80 | 0.58 |                     |    |       |
| Experimental         | Pretest  | 4.74 | 0.78 | 1.570 <sup>ns</sup> | 14 | 0.139 |
|                      | Posttest | 5.07 | 0.45 |                     |    |       |

Note: \*  $p < 0.05$  significant @5% alpha level

ns  $p > 0.05$  not significant @5% alpha level

### 3.5. Difference in the Life Quality and Physiological Status Between the Posttests of the Control Group and Experimental Groups

Table 5 shows that there is no significant difference in the life quality between the posttests of the control group and experimental group ( $t(28) = 1.450$ ns,  $p = 0.16$ ). Likewise, it shows that there is no significant difference in the physiological status between the control and experimental groups ( $t(28) = 1.415$ ns,  $p = 0.17$ ).

**Table 5.**

Independent t-test Result of Life Quality and Physiological Status Between the Posttests of the Control and the Experimental Groups.

| Group                | Mean | SD   | t                   | df | Sig  |
|----------------------|------|------|---------------------|----|------|
| Life Quality         |      |      |                     |    |      |
| Control              | 6.49 | 0.33 | 1.450 <sup>ns</sup> | 28 | 0.16 |
| Experimental         | 6.70 | 0.48 |                     |    |      |
| Physiological Status |      |      |                     |    |      |
| Control              | 4.80 | 0.58 | 1.415 <sup>ns</sup> | 28 | 0.17 |
| Experimental         | 5.07 | 0.45 |                     |    |      |

Note: \*  $p < 0.05$  significant @5% alpha level

ns  $p > 0.05$  not significant @5% alpha level

### 3.6. Difference in the Life Quality and Physiological Status Between the Posttests of the Control Posttest Only-Group and the Experimental Posttest-Only Groups

Table 6 shows that there is a significant difference in the life quality between the posttests of control and experimental group posttest-only groups ( $t(28) = 5.106^*$ ,  $p = 0.000$ ). Moreover, it also reveals that there is no significant difference in the physiological status between the posttests of the control and experimental posttest-only group ( $t(28) = 1.718$ ns,  $p = 0.097$ ).

**Table 6.**

Independent t-test Result of Life Quality and Physiological Status Between the Posttests of the Control Only Group and the Experimental Posttest-Only Groups.

| Group                       | Mean | SD   | t                   | df | Sig.  |
|-----------------------------|------|------|---------------------|----|-------|
| <i>Life Quality</i>         |      |      |                     |    |       |
| Control Posttest Only       | 6.52 | 0.24 | 5.106*              | 28 | 0.000 |
| Experimental Posttest Only  | 6.88 | 0.13 |                     |    |       |
| <i>Physiological Status</i> |      |      |                     |    |       |
| Control Posttest Only       | 4.98 | 0.33 | 1.718 <sup>ns</sup> | 28 | 0.097 |
| Experimental Posttest Only  | 5.17 | 0.24 |                     |    |       |

Note: \*p<0.05 significant @5% alpha level

ns p>0.05 not significant @5% alpha level

### 3.7. Physiological Status Between the Pretest of the Control Group and the Posttest of the Control Posttest-Only Group

Table 7 shows that there is a significant difference in the life quality between the pretest of the control group and the posttest of the control posttest-only group ( $t(28) = 17.164^*$ ,  $p = 0.000$ ). Moreover, it also shows that there is a significant difference in the physiological status between the pretest of the control group and the posttest of control posttest-only group ( $t(28) = 4.013^*$ ,  $p = 0.000$ ).

**Table 7.**

Independent t-test Result of Life Quality and Physiological Status Between the Pretest of the Control Group and the Posttest of the Control Posttest-Only Group.

| Group                                | Mean | SD   | t       | df | Sig.  |
|--------------------------------------|------|------|---------|----|-------|
| <i>Life Quality</i>                  |      |      |         |    |       |
| Pretest Control Group                | 4.93 | 0.27 | 17.164* | 28 | 0.000 |
| Posttest Control Posttest-Only Group | 6.52 | 0.24 |         |    |       |
| <i>Physiological Status</i>          |      |      |         |    |       |
| Pretest Control Group                | 4.45 | 0.39 | 4.013*  | 28 | 0.000 |
| Posttest Control Posttest-Only Group | 4.98 | 0.33 |         |    |       |

Note: \* p<0.05 significant @5% alpha level

ns p>0.05 not significant @5% alpha level

### 3.8. Independent t-test Result of Life Quality and Physiological Status Between the Posttests of the Experimental Group and the Experimental Posttest-Only Group

Table 8 shows that there is no significant difference in the life quality between the posttests of the experimental group and the experimental posttest-only group ( $t(28) = 1.381^{\text{ns}}$ ,  $p = 0.178$ ). Likewise, there is no significant difference in the physiological status between the posttests of the experimental group and the experimental posttest-only group ( $t(28) = 0.759^{\text{ns}}$ ,  $p = 0.454$ ).

**Table 8.**

Independent t-test Result of Life Quality and Physiological Status Between the Posttests of the Experimental group and the Experimental Posttest-Only Group.

| Group                       | Mean | SD   | t                   | df | Sig.  |
|-----------------------------|------|------|---------------------|----|-------|
| <i>Life Quality</i>         |      |      |                     |    |       |
| Experimental                | 6.70 | 0.48 | 1.381 <sup>ns</sup> | 28 | 0.178 |
| Experimental Posttest-Only  | 6.88 | 0.13 |                     |    |       |
| <i>Physiological Status</i> |      |      |                     |    |       |
| Experimental                | 5.07 | 0.45 | 0.759 <sup>ns</sup> | 28 | 0.454 |
| Experimental Posttest-Only  | 5.17 | 0.24 |                     |    |       |

Note: \* p<0.05 significant @5% alpha level.

ns p>0.05 not significant @5% alpha level.

### 3.9. Independent *t*-test Result of Life Quality and Physiological Status Between the Posttests of the Control group and the Control Posttest-Only Group

Table 9 shows that there is no significant difference in the life quality between the posttests of the control group and the control posttest-only group ( $t(28) = 0.298$ ns,  $p = 0.768$ ). Likewise, it reveals that there is no significant difference in the physiological status between the posttests of the control group and the control posttest-only group ( $t(28) = 1.066$ ns,  $p = 0.295$ ).

**Table 9.**

Independent *t*-test Result of Life Quality and Physiological Status Between the Posttests of the Control group and the Control Posttest-Only Group.

| Group                             | Mean | SD   | t                   | df | Sig.  |
|-----------------------------------|------|------|---------------------|----|-------|
| Life Quality                      |      |      |                     |    |       |
| Control Posttest                  | 6.49 | 0.33 | 0.298 <sup>ns</sup> | 28 | 0.768 |
| Posttest of Control Posttest-Only | 6.52 | 0.24 |                     |    |       |
| Physiological Status              |      |      |                     |    |       |
| Control Posttest                  | 4.80 | 0.58 | 1.066 <sup>ns</sup> | 28 | 0.295 |
| Posttest of Control Posttest-Only | 4.98 | 0.33 |                     |    |       |

Note: \*  $p < 0.05$  significant @5% alpha level.

ns  $p > 0.05$  not significant @5% alpha level.

## 4. Discussion

The study examined the effectiveness of Moderate Intensity Continuous Exercise (MICE) and Zumba on the quality of life and physiological status of obese college students in Negros Occidental during the academic year 2023–2024. Sixty (60) obese college students participated, with standardized instruments used to measure life quality and physiological status. Data analysis involved descriptive statistics and *t*-tests at a 0.05 significance level.

The result shows that both control and experimental group has the same life quality status before the intervention. It implies that some of the college obese students are mostly satisfied with their well-being. Moreover, in terms of the physiological status of the control and experimental group, it reveals that both groups have the same status in terms of their cardiovascular endurance, flexibility, muscular strength, and body composition. This may imply that even the students are obese physically, they still manage to have a somehow healthy health-related components before the intervention starts.

Furthermore, the result reveals that in terms of life quality posttest, both control and experimental group experience the same life quality status after the attending to the Zumba and moderate intensity continuous exercise. Moreover, obese college students under the moderate intensity continuous exercise program moderate-intensity continuous exercise revealed that they were delighted with their life because of joining the intervention. Furthermore, in terms of the physiological status of the college obese students who undergone Zumba and moderate intensity continuous exercise, it reveals that the posttest of the two groups is different, the posttest of experimental group which undergone the moderate intensity continuous exercise program is much higher than the control group which undergone the Zumba exercise.

In addition, the result also implies that control and experimental groups life quality are significantly the same before the start of the intervention. This may also indicate that both groups are mostly satisfied with their life quality regardless of their weight classifications. Furthermore, the result may also imply that before the start of the intervention, both control and experimental groups has relatively the same physiological status. This may indicate that all college students with obesity may have the same lower level of health-related fitness components than those with a normal weight.

The results may imply that both control and experimental groups had an improvement with their life quality after the intervention. This means that moderate intensity continuous exercise is as effective as the Zumba exercise in developing the life quality of the obese college students. However, college obese students who joined in the moderate intensity continuous exercise doesn't show significant development in their physiological status than those who joined in Zumba exercise program.

Moderate intensity continuous exercise may have the same degree of effectiveness as compared to Zumba exercise in improving the life quality of the college obese students. Moreover, Zumba and moderate intensity continuous exercise program has an impact in developing the physiological status of the college obese students especially to the cardiovascular endurance, muscular strength, flexibility, and body composition.

Considering that both Zumba and moderate intensity continuous exercise is an effective program to develop the life quality of obese college students, the result may still imply that Zumba exercise has different development impact as compared to moderate intensity continuous exercise in terms of the life quality. Moreover, the result in terms of the physiological status development of the posttest-only group reveals that obese college students under the Zumba exercise program have the same progression phase with the obese college students under the moderate continuous exercise program.

Also, result may imply that college obese students before the Zumba exercise have different life quality status than students who have finished the whole duration of the Zumba exercise intervention. Furthermore, the results denote that in terms of the cardiovascular endurance, flexibility, muscular strength and body composition, the Zumba exercise is an effective way to improve those mentioned health-related fitness components.

In addition, the result may imply that regardless of the groupings of the obese college students, if they participate in the moderate intensity continuous exercise program, can develop their quality of life significantly. Furthermore, the result reveals that physiological status of obese college students which were grouped under experimental group has the same development with the obese college students under the experimental posttest-only group after the intervention program using the moderate intensity continuous exercise. Lastly, a longer than 5-weeks exercise program will have a greater difference in the development of the college obese students.

The result also may imply that the Zumba exercise program develops quality of life of the college obese students even they are doing the exercise program on different group of people. On the other hand, status of obese college students under the Zumba exercise physiological status posttest result is likewise the same with the posttest-only group of obese college students who had undergone the same Zumba exercise program. This may imply that regardless of the groupings and social factors, the Zumba exercise program is an effective program for obese college students to improve their physiological health.

## 5. Conclusion

In connection to the findings of the study, the following conclusion were formulated:

1. The result highlight the effectiveness of the intervention in improving participants' life quality and overall well-being. The fact that both the Zumba and MICE groups initially had a high level of life quality satisfaction suggests that the participants were already in a positive state before the intervention. However, the significant improvement to a 'delighted' level in both groups after the intervention indicates that the intervention had a meaningful and positive impact on their well-being. This suggests that the intervention was successful in enhancing their overall quality of life and satisfaction.

2. This result suggests that the intervention had a positive impact on the physiological well-being of participants, especially in the MICE group. The fact that both groups had above-average physiological status before the intervention indicates that the participants were already in a relatively good state. However, the improvement to a 'good' level in the MICE group after the intervention, along with the Zumba group maintaining their above-average status, indicates that the intervention contributed positively to their physiological health. This highlights the effectiveness of the intervention in enhancing participants' physiological well-being, particularly in the context of the MICE group.
3. This result indicates that both interventions, Zumba and MICE, were successful in significantly enhancing participants' life quality to a 'delighted' level. The fact that both groups reached this highly positive and satisfied state in the posttest demonstrates the effectiveness of the interventions. It suggests that the

interventions had a meaningful impact on improving participants' overall well-being and life satisfaction. This outcome underscores the success of the interventions in positively influencing participants' perceptions of their quality of life, contributing to their overall sense of well-being and satisfaction.

4. This suggests that both interventions had a positive impact on the physiological well-being of their respective groups, with the MICE intervention yielding slightly better results in terms of physiological status. These findings underscore the effectiveness of the interventions in improving participants' physiological health and highlight the potential benefits of tailored interventions for specific health outcomes."

5. The result suggests that, prior to any interventions, both groups were comparable in terms of life quality and physiological well-being. These findings establish a baseline equivalence between the Zumba and MICE groups, which is important for interpreting the effects of any subsequent interventions on these variables.

6. The significant improvement in physiological status within the Zumba group but not within the MICE group suggests that the Zumba intervention had a more pronounced impact on participants' physical health. However, it is noteworthy that both groups experienced significant improvements in life quality post-intervention, indicating overall positive outcomes from both interventions. Overall, these findings suggest that while both interventions were effective in enhancing life quality, the Zumba intervention had a more comprehensive impact by also improving physiological status, highlighting the nuanced effects of different intervention strategies on participants' well-being.

7. The statement suggests that both the Zumba and MICE interventions led to comparable improvements in life quality and physiological status, as evidenced by the lack of significant differences between the posttests of these groups. This indicates that both interventions were similarly effective in enhancing these aspects across both groups. From a practical standpoint, this implies that both interventions can be considered equally viable options for improving life quality and physiological status. It also suggests that the specific activities or techniques used in each intervention may have had similar impacts on participants, leading to comparable outcomes. However, it is important to note that while the overall improvements were similar, there may still be nuances in how each intervention affected individual aspects of life quality and physiological status. Further analysis or exploration of specific elements within these domains could provide deeper insights into the comparative effectiveness of the interventions.

8. The result suggests that the interventions or treatments applied to these groups had an impact on their life quality, leading to measurable differences between the control and experimental groups after the intervention. This finding is crucial as it demonstrates the effectiveness of the interventions in influencing participants' perceptions of their well-being. The fact that there was a significant difference in life quality post-intervention indicates that the interventions had a meaningful impact on improving this aspect of participants' lives. It also implies that the interventions were successful in achieving their intended goals, as reflected in the measurable differences between the control and experimental groups. This underscores the importance of carefully designing and implementing interventions to target specific outcomes, such as improvements in life quality, and highlights the value of evaluating these interventions through rigorous research methods.

9. This result suggests that the intervention implemented with the Zumba group led to significant improvements in both life quality and physiological status. The fact that there was a significant difference between the pretest and posttest of the Zumba group indicates that the intervention had a measurable impact on enhancing these aspects of participants' well-being. These findings highlight the effectiveness of the Zumba intervention in improving overall well-being and physical health. The fact that improvements were observed in multiple outcome measures, such as life quality and physiological status, underscores the comprehensive impact of the intervention on participants' health and well-being. Overall, this result reinforces the positive impact of the Zumba intervention and emphasizes the importance of incorporating such interventions to enhance various aspects of participants' lives.

10. The findings highlight the need for further investigation or potential modifications to the intervention approach used with the MICE group. It's possible that the intervention's duration, intensity, or specific components may need adjustment to achieve more noticeable improvements in life quality and physiological status.

Overall, this result underscores the importance of continuous evaluation and refinement of intervention strategies to ensure their effectiveness in producing meaningful outcomes for participants. It also emphasizes the value of using research findings to inform future interventions and enhance their impact on participants' well-being.

11. These findings imply that factors other than the intervention may have influenced the observed outcomes, or that the intervention applied to the Zumba group did not produce measurable changes in life quality or physiological status within the study's time frame. The intervention may not have had a noticeable impact on life quality or physiological status within the study's timeframe. Moreover, Further analysis or exploration may be needed to understand why these differences were not significant and to determine the true impact of the interventions on life quality and physiological status.

### Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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